Helaba

Focus on: Sustainable finance
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Green corporate bonds

Frameworks informed by sound pragmatism



Dr. Haiko Stefan
Sustainable Finance Advisory
Tel.: 069 / 91 32 - 79 63

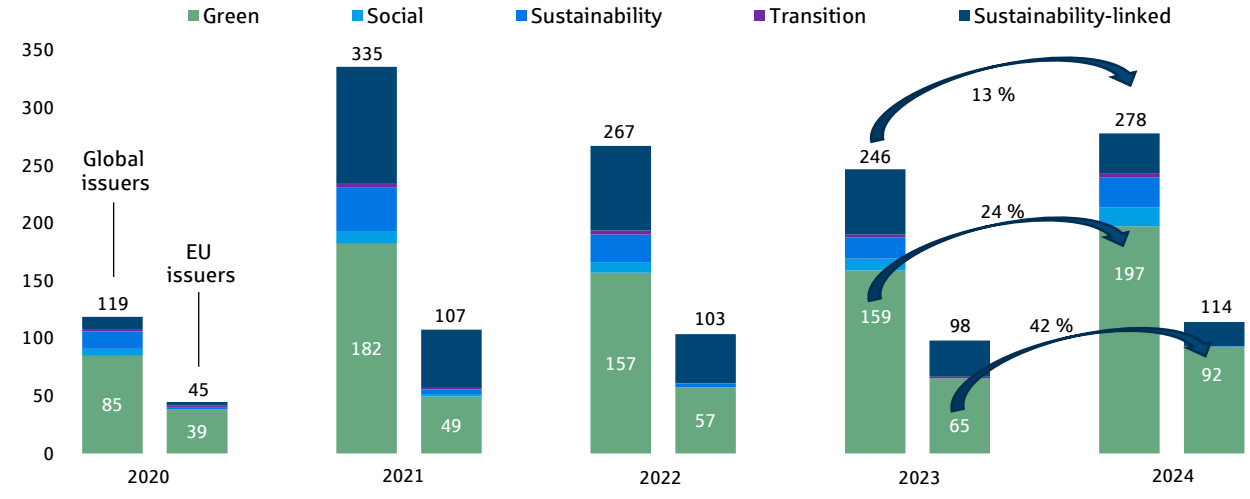
2024 saw a considerable rise in the global volume of corporate Green Bonds that was primarily driven by issuers in the European Union. In light of this trend, we decided to take a more in-depth look at established market practices by examining a sample of active issuers in this segment over the past year. Based on our analysis of selected frameworks, proceeds were largely allocated to projects in the eligible categories of renewable energy, clean transportation and energy efficiency. At the same time, our findings clearly show that Green Bonds can be used to finance a broad range of environmentally friendly projects. While there is an increasing tendency to align the projects described in the framework with the EU taxonomy, there is a notable divergence in the extent to which issuers are doing so. In addition, although none of the frameworks in our sample were more than three years old, some were more up to date than others. The look-back period for projects financed by Green Bonds was often - but not always - limited and issuers typically chose one of the well-established agencies to provide the required second-party opinion. On the whole, the ICMA's voluntary guidelines, the Green Bond Principles, continue to serve as the primary reference for the market, which nevertheless adopts a pragmatic approach to integrating any significant regulatory changes. Taken together, this creates an ideal environment for a steady increase in the number of Green Bond issuers and, consequently, in the volume of issuance.

Green Bonds on a growth trajectory

Global issuance volume of corporate bonds with an ESG component grew by 13 % in 2024, with the majority of this increase attributable to a 24 % increase in Green Bonds. The impact of other use-of-proceeds (UoP) categories - social, sustainable and transition - was significantly lower. Sustainability-linked bonds were an exception in this respect, with their issuance volume registering a marked decline. From a regional perspective, a large part (42 %) of the momentum in the Green Bond market is attributable to issuers from EU countries.

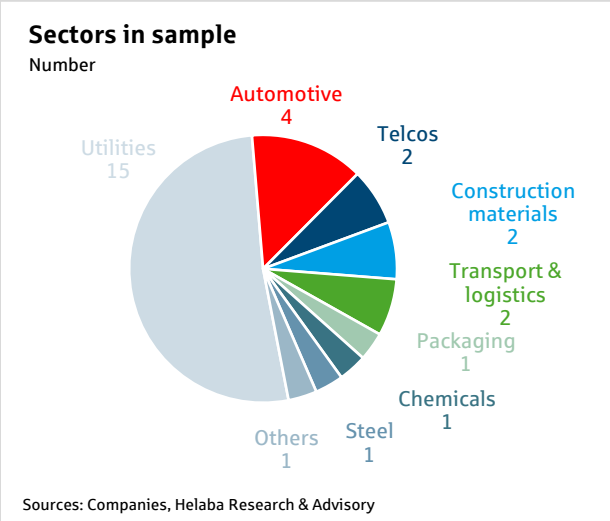
Sustainable corporate bonds

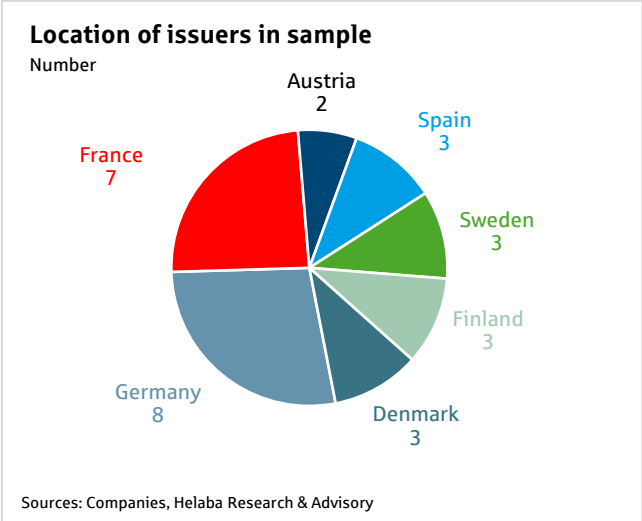
Issuance volume in USDbn, globally and in the EU



Sources: Bloomberg, Helaba Research & Advisory

We took the opportunity that these figures presented to take a closer look at the frameworks of 29 issuers that were active on the primary market in 2024, with the aim of shedding light on established market practices. In doing so, we confined ourselves to corporate issuers from the DACH region, France, Spain and Scandinavia. For this reason, it comes as no surprise that almost half of our sample is made up of utilities. The remaining issuers are from the automotive, construction materials, telecommunications, transport & logistics, chemicals, as well as the steel and packaging industries. In general, these sectors are frequent borrowers on the bond market; as such, we are confident that the analysis of the 29 frameworks comprising our sample provides a representative snapshot of today's issuers on the Green Bond market. The only key issuer group of the last few years absent from our analysis is the real estate sector.





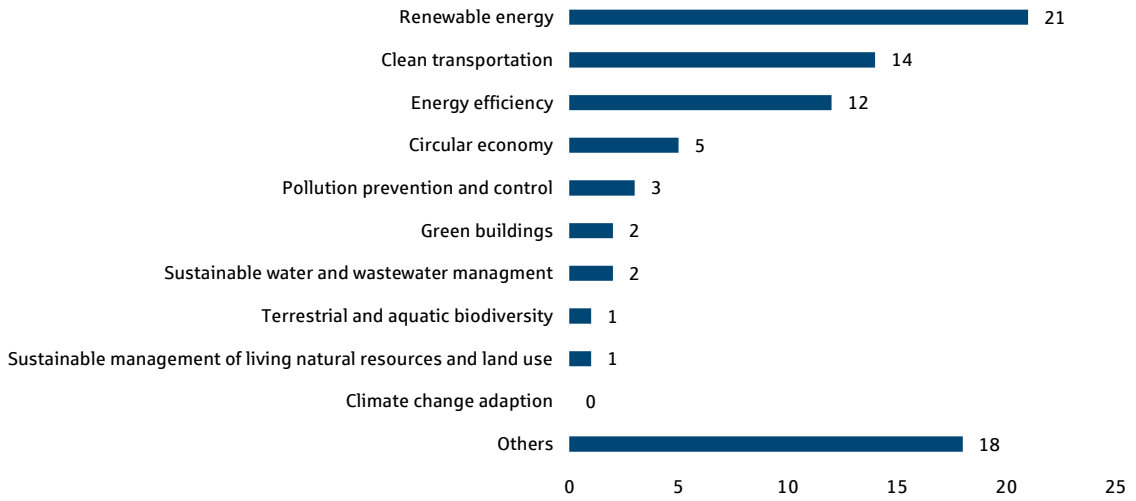
Despite a clear focus on certain projects, a broad range of eligible categories exists

Before issuing a Green Bond, issuers are required to draw up a Green Bond or Green Finance Framework. In particular, this framework includes information on how proceeds from the bond will be used. In many cases, the projects that they are intended to (re)finance are allocated to eligible categories recommended by the ICMA (International Capital Market Association) in its Green Bond Principles (GBP). Our research reflects this approach and reveals that the most frequently chosen categories were those of "renewable energy", "clean transportation" and "energy efficiency". The objective of projects within these categories is to address the most important and obvious challenge in terms of sustainability - mitigating climate change by cutting greenhouse gas emissions. At the same time, these priorities are mirrored in the weighting of the sectors represented in our sample as technological advances, particularly in the energy and mobility sectors, have led to enormous volumes of investment. Furthermore, issuers in the remaining industries are also investing in projects to generate green electricity for their business operations or to boost the electrification of their own vehicle fleets. That said, our findings indicate that Green Bonds are also used to (re)finance a wide range of projects beyond e-mobility or wind and solar power: Twelve issuers in our sample, for instance, included the ICMA's category of "energy efficiency" in their frameworks. While the types of projects financed in these cases are extremely diverse, they all have one shared goal of avoiding greenhouse gas emissions by saving energy (rather than switching to a different energy source). It is also evident that the proceeds of Green Bonds are not only used for projects that contribute to decarbonisation. Examples in other areas include, above all, efforts to create a circular economy and to prevent pollution, although the sustainable management of natural resources and the conservation of biodiversity are also significant fields for investment. For example, the Austrian utility Verbund AG has incorporated "terrestrial and aquatic biodiversity conservation" into its framework in order to finance measures to improve the ecology and biodiversity around its hydroelectric power plants, such as bypass waterways. In contrast, the Finnish packaging manufacturer UPM Kymmene requires large quantities of wood fibres and, consequently, has assigned various silvicultural activities to the category of "sustainable management of living natural resources and land use". Both examples provide a striking illustration of how receptive the market is to projects that are highly specific to a given company - provided that they deliver

clearly identifiable environmental benefits as required by the ICMA's Green Bond Principles. Issuers restrict themselves to one eligible category in around one third of the frameworks we analysed, while the other frameworks include up to five categories. The only exception is a single framework with six categories.

Use of proceeds

Frequency of categories in ICMA's Green Bond Principles



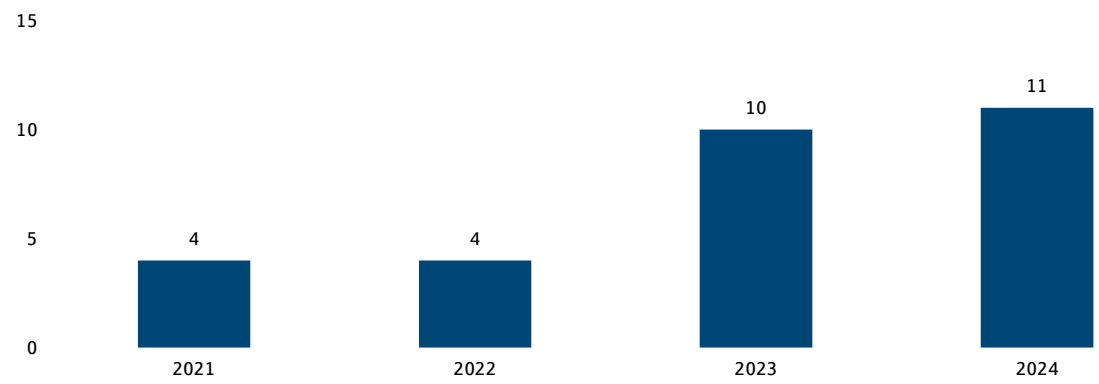
Sources: Companies, Helaba Research & Advisory

No fixed best before date for frameworks

To successfully place a Green Bond, it is crucial to have a sufficiently up-to-date framework as issuers, market standards and the regulatory regime are constantly evolving. However, our analysis reveals that there is a considerable degree of flexibility in this respect: While 38 % of the frameworks in our sample were published in 2024, 34 % date back to 2023. The remaining 28 % are from 2022 or 2021. Furthermore, last year saw a large number of first-time issuers, such as Iliad, Heidelberg Materials and Voestalpine, who typically made their debut on the market with brand new frameworks. A number of other issuers, however, used considerably older frameworks, with Redeia, RTE, E.ON and Autoliv issuing Green Bonds based on frameworks published in 2021, for instance. Among other things, this may be due to the fact that the utilities RTE, Redeia and E.ON had closely aligned their frameworks with the taxonomy as early as 2021. In this way, they were among the first to meet the most stringent quality standards, making subsequent adjustments unnecessary. Meanwhile, the example of Autoliv, a supplier of automotive safety systems, demonstrates how investors do not appear to apply any specific cut-off date, even for older frameworks without any reference to the taxonomy.

Publication of frameworks

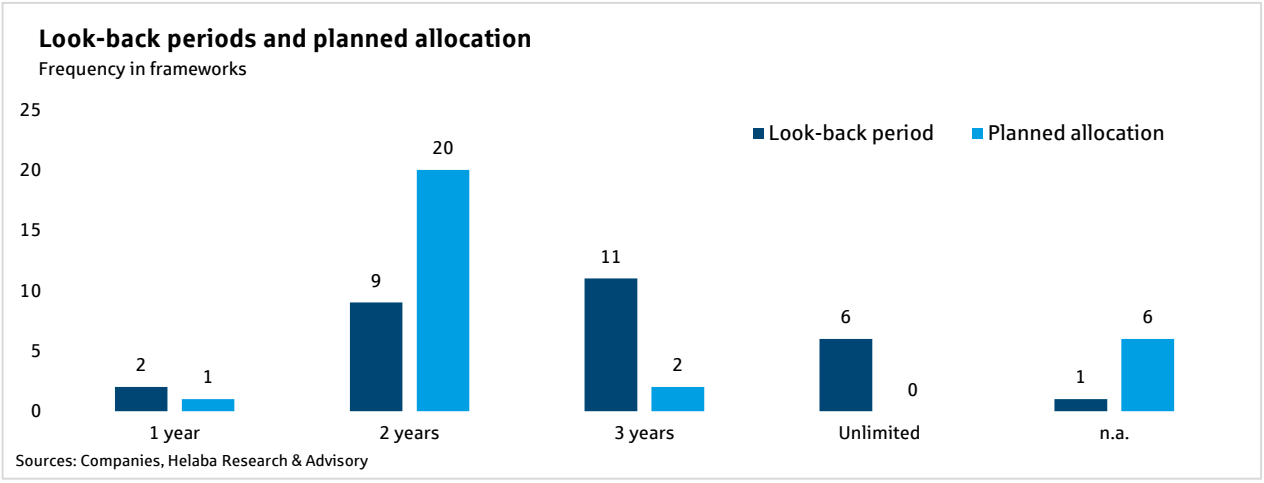
Number of frameworks



Sources: Companies, Helaba Research & Advisory

Period for refinancing and allocation of proceeds generally limited

Besides the use of proceeds, most frameworks also define how far previous capital expenditures and expenses may date back to in the case of refinancing activities. This provision addresses the needs of investors who would like to finance new and, ideally, additional projects, which is why these so-called "look-back periods" are usually limited to 3 years or less. Yet the requirements of the EU Green Bond Standard (EUGBS) [1] are much more flexible in this regard and do not specify a look-back period for capital expenditures. Instead, they only stipulate a maximum period of 3 years for refinancing certain operating expenditures. Heidelberg Materials, Ellevio and Fingrid's frameworks, for example, follow this approach. In addition, the frameworks typically provide information on when proceeds are expected to be fully allocated, which is defined as 2 years for the majority of issuers in our sample. The only exception here is the French utility Engie, which links this period to the maturity of the bonds: For maturities of 10 years, the company aims for an allocation period of 3 years; for shorter maturities, the period reduces to 2 years.

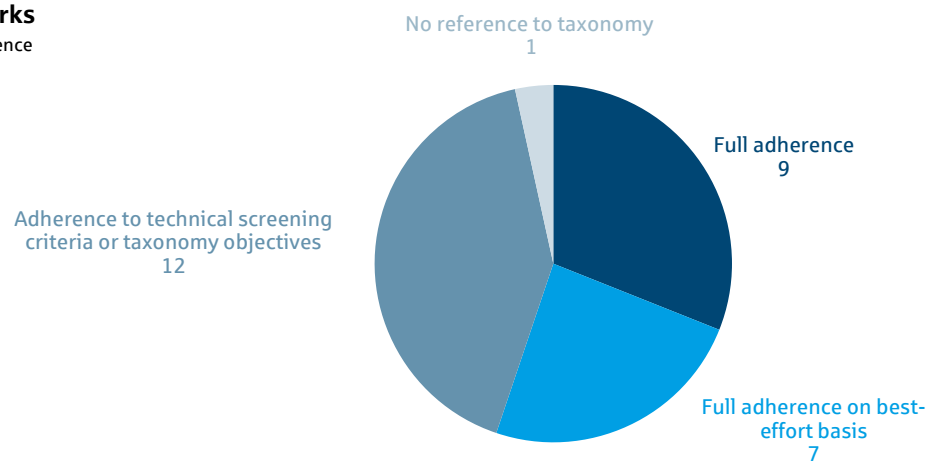


Growing importance of taxonomy alignment

Following a long period of preparation, the EU Green Bond Standard was finally launched in December 2024 as a regulated "gold standard" and an alternative to the voluntary guidelines of the ICMA's Green Bond Principles. The central feature of EU Green Bonds is the use of proceeds for taxonomy-aligned projects: A project is considered aligned with the taxonomy if it meets specific technical screening criteria demonstrating that it contributes substantially to at least one of the six environmental objectives laid out in the Taxonomy Regulation without undermining the others ("Do No Significant Harm" or DNSH)[2]. At the same time, certain minimum requirements, i.e. the so-called minimum safeguards, must be taken into account that relate to selected standards in respect of, among other things, human and labour rights. Notably, almost all frameworks already refer to the taxonomy, although the degree of adherence varies considerably. While it is not always possible to make a clear-cut distinction, those that show the strongest degree of compliance claim to meet the technical screening criteria, the "Do No Significant Harm" criteria as well as the minimum safeguards for the (re)financed projects. This is followed by frameworks that aim to meet the requirements of the taxonomy for the projects on a best-effort basis. Besides these two relatively closely aligned groups, a number of frameworks stipulate adherence to the technical screening criteria for contributing substantially to one of the six environmental objectives (excluding DNSH and minimum safeguards) or simply classify projects according to the environmental objectives. Only one framework analysed did not make reference to the taxonomy.

[1] See "Delegated Regulation (EU) 2023/2631"
[2] See "Delegated Regulation (EU) 2020/852"

Taxonomy in frameworks
Frequency and extent of adherence



Sources: Companies, Helaba Research & Advisory

There are presumably a number of reasons for this broad spectrum. For one thing, the Taxonomy Regulation does not cover all sectors of the economy. Only economic activities that are of particular relevance to one of the taxonomy's six environmental goals are eligible and can therefore also be taxonomy-aligned. Another important aspect is the fact that sustainability reporting capabilities vary considerably among issuers. After all, reporting on taxonomy-aligned projects does not only mean complying with the criteria but also providing the relevant supporting documentation. There are many areas in which gaps in information still need to be filled and the relevant reporting processes established. Our assumption is that many companies are currently on a steep learning curve in this respect, and we anticipate that the taxonomy requirements will play an even greater role in structuring Green Bonds going forward. It is also quite possible that the taxonomy will pave the way for sectors that, so far, have had little or no activity on the Green Bond market as it covers so-called "transition activities" and "enabling activities". Such activities may, for instance, include the production of iron, steel, aluminium or cement, as well as the "production of other low-carbon technologies", which can be found in sectors such as industrial machinery and electrical equipment manufacturing.

Market for SPOs already highly consolidated

A mandatory prerequisite for the issuance of a Green Bond is to obtain an assessment of the framework by an independent expert, a so-called second party opinion or SPO. This task is typically performed by an agency specializing in the assessment of ESG issues. It is interesting to note that there was a significant consolidation among agencies over the course of our sample period (2021-2024). The first agency to get the ball rolling was Moody's, which acquired Vigeo Eiris in April 2019 before subsequently phasing out the brand in February 2022. This was followed by S&P, which purchased the "Shades of Green" business responsible for drafting SPOs from the Norwegian climate research centre CICERO in December 2022. The takeover of IMUG in March 2023 by the EthiFinance Group and the discontinuation of the brand in October 2024 marked the latest step in this wave of consolidation, which has reduced the number of agencies over this period from seven to five. In our sample, ISS enjoys a slightly higher market share than Sustainalytics, which most recently issued the largest number of SPOs worldwide, closely followed by S&P. However, the question as to which agency writes the SPO does not appear to have any bearing on the success of a Green Bond, as long as it comes from an agency that is established in the market. From the middle of 2026, though, companies wanting to issue an EU Green Bond will be required to use agencies that have registered with ESMA as "External Reviewers" and meet the necessary requirements.

SPOs issued for frameworks (2021-2024)					
Agency	2021	2022	2023	2024	Total
ISS Corporate	0	0	4	4	8
Sustainalytics	2	1	2	2	7
Moody's	0	0	2	3	5
S&P	0	0	2	2	4
CICERO	0	2	0	0	2
Vigeo Eiris	2	0	0	0	2
IMUG	0	1	0	0	1

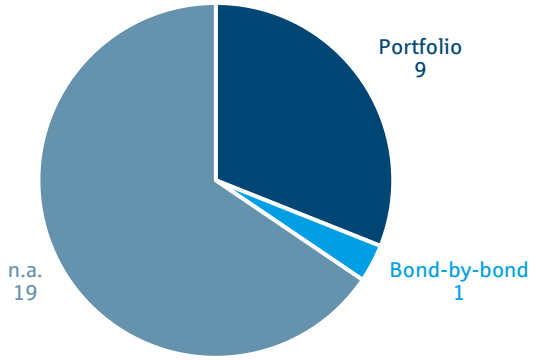
Sources: Companies, Helaba Research & Advisory

Widespread use of portfolio approach to manage proceeds

The ICMA's Green Bond Principles allow for the proceeds of Green Bonds to be managed either per bond (bond-by-bond approach) or on an aggregated basis for multiple Green Bonds (portfolio approach). The majority of companies do not explicitly state in their frameworks which approach they adopt. Nevertheless, a total of nine issuers in our sample indicate that they apply the portfolio approach, with only one issuer opting for the bond-by-bond approach. The approach a company decides to use also has consequences for the allocation and impact report, which issuers are required to publish once a year until full allocation. For example, when the bond-by-bond approach is taken, the report provides a detailed breakdown on how the proceeds of each Green Bond are allocated to the eligible categories and the impact that they have. For the portfolio approach, on the other hand, it shows how the aggregated proceeds of all Green Bonds are allocated to the categories and what overall impact is achieved.

Use of bond-by-bond or portfolio approach

Number of frameworks



Sources: Companies, Helaba Research & Advisory

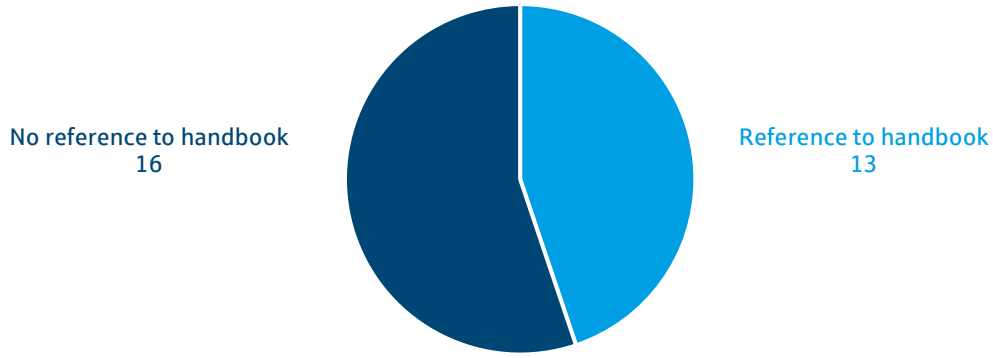
ICMA recommendations for the impact report help to standardise reporting

The ICMA's Green Bond Principles require companies to publish an annual impact report until full allocation of proceeds to make the projects' positive environmental impact transparent. For this reason, the frameworks usually contain one section with information on performance indicators that measure the impact of projects on the environment and will be included in the upcoming impact report. In this section, the frameworks typically refer to the ICMA's "Harmonized Framework for Impact Reporting", the aim of which is to achieve a greater level of standardisation in impact reporting.[3] This handbook was most recently updated in November 2024 and contains core principles and recommendations for the annual impact report. Furthermore, it contains numerous impact reporting metrics that companies can use for their (re)financed projects. For "renewable energy", for example, it proposes reporting the annual generation of electricity from renewable sources in MWh or GWh, while it recommends reporting the avoided greenhouse gas emissions in tons of CO_2 for "clean transportation". Many issuers allow themselves a certain degree of flexibility, in a similar way to referencing the taxonomy, by avoiding terminology that

[3] See "Harmonized Framework for Impact Reporting (June 2024)"

promises full implementation of the handbook's recommendations, preferring instead to use phrases such as "where possible" or "on a best-effort basis". We expect that an increasing number of companies will adopt this pragmatic approach and that, accordingly, reporting will become gradually more standardised - without becoming overly prescriptive.

Use of handbook for reporting
Number of frameworks



Sources: Companies, Helaba Research & Advisory

Stage set for further growth in Green Bond volumes

The big picture that emerges from our analysis shows a market still largely influenced by the ICMA's voluntary Green Bond Principles; but one that is, at the same time, receptive to a pragmatic inclusion of relevant regulatory developments. This creates a good environment for a steady increase in the number of Green Bond issuers and, consequently, in the volume of issuance. Our findings suggest that once a company has made its Green Bond debut, it will typically follow this up with additional issues in subsequent years since the framework and SPO are already in place. Should an issuer want to make any changes, such as including additional eligible categories, it will only have to make minor adjustments to its framework and update the SPO. As such, the hurdles for a repeat issue are relatively low. Meanwhile, technological advances are opening up a wider range of opportunities for green projects, which are becoming increasingly economical as climate- and environmentally friendly technologies reach commercial viability and economies of scale come into play. Moreover, taxonomy reporting should make it easier to identify suitable projects and reveal additional investment volumes that can be financed by Green Bonds. Having said that, we remain cautious as to whether the EU Green Bond Standard will provide any additional tailwind to the market's growth. We expect that the first issuers to pursue this seal of quality will be those that have already issued Green Bonds and have aligned their frameworks closely with the taxonomy. For the time being, those with little experience of navigating the taxonomy are therefore likely to want to gather more experience before issuing an EU Green Bond.



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Publisher and editor

Helaba Research & Advisory

Editor:
Stefan Rausch

Publisher:
Dr. Gertrud R. Traud
Chief Economist/
Head of Research & Advisory

Neue Mainzer Str. 52-58
60311 Frankfurt am Main
Germany
T +49 69 / 91 32 - 79 63

Internet: **www.helaba.com**

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Appendix

Company	Sector	Country	Framework	SPO agency
Air Liquide	Chemicals	France	2024	Moody's
Amprion	Utilities	Germany	2022	Sustainalytics
AP Moller Maersk	Transport & logistics	Denmark	2024	S&P
Autoliv	Automotive	Sweden	2021	Vigeo Eiris
DSB	Transport & logistics	Denmark	2024	S&P
EDF	Utilities	France	2022	Cicero
Ellevio	Utilities	Sweden	2023	ISS-Corporate
EnBW	Utilities	Germany	2024	ISS-Corporate
Engie	Utilities	France	2023	Moody's
E.ON	Utilities	Germany	2021	Sustainalytics
Eurogrid	Utilities	Germany	2022	IMUG
Fingrid	Utilities	Finland	2023	ISS-Corporate
Heidelberg Materials	Construction materials	Germany	2024	ISS-Corporate
Iberdrola	Utilities	Spain	2023	Moody's
Iliad	Telecommunications	France	2024	Sustainalytics
Knorr-Bremse	Other	Germany	2024	Moody's
Orsted	Utilities	Denmark	2022	Cicero
Redeia	Utilities	Spain	2021	Sustainalytics
RTE	Utilities	France	2021	Vigeo Eiris
RWE	Utilities	Germany	2023	Sustainalytics
Saint Gobain	Construction materials	France	2024	Sustainalytics
Telefonica	Telecommunications	Spain	2023	Sustainalytics
Teollisuuden Voima	Utilities	Finland	2023	ISS-Corporate
UPM Kymmene	Packaging	Finland	2023	S&P
Valeo	Automotive	France	2023	ISS-Corporate
Verbund	Utilities	Austria	2024	ISS-Corporate
Voestalpine	Steel	Austria	2024	Moody's
Volvo	Automotive	Sweden	2023	S&P
VW Financial Services	Automotive	Germany	2024	ISS-Corporate

Sources: Companies, Helaba Research & Advisory