

2019

Green Bond European Investor Survey



Climate Bonds INITIATIVE



This report was prepared by the Climate Bonds Initiative, with analysis support from Henley Business School.



Sponsored by Luxembourg Stock Exchange, Credit Suisse, Lyxor Asset Management and Danske Bank.

Introduction

This is Climate Bonds Initiative's (CBI) first green bond investor survey in what is planned to become a series of surveys. To begin with, CBI targeted Europe-based investors because Europe appears to have the most established pool of dedicated green bond and ESG asset managers. In the future, we plan to survey North American, Asian and Latin American investors.

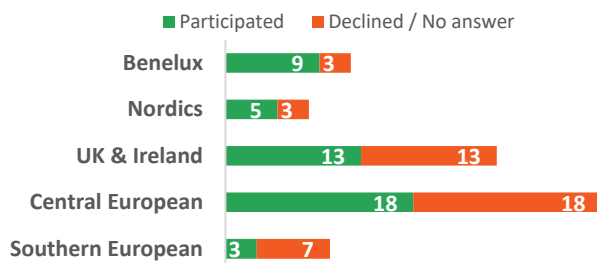
We asked investors how they perceive the green bond market.

The goal of the survey is to identify actions and approaches that have the potential to accelerate the issuance of green bonds both in Europe and globally. It explores the drivers, challenges and required tools and incentives which could encourage investors to buy (or buy more) green bonds and support market growth. Since investment decisions are complex and depend on many factors, we have tried to isolate the factors that pertain to the green bond market, i.e. *ceteris paribus*.

CBI surveyed 48 of the largest Europe-based fixed income asset managers to gain a comprehensive understanding of how the fixed income investment community is addressing or intending to address climate change through investment decisions. The total assets under management (AuM) of respondents is EUR13.7tn, and their total fixed income AuM is EUR4.3tn, with an average of EUR90bn and median of EUR34bn.

The overall response rate is 45%, but rates differ by region. Over 60% of the investors approached in Benelux and the Nordics took part, while in Central Europe and UK & Ireland half participated, and in Southern Europe the figure dropped to less than a third.

Response rate suggests differing commitment by region



More details on the response rate, respondents and the survey methodology are provided in Appendix 1.

Asset owners were not invited to participate unless the funds were internally managed. Acknowledging that this constituency will be critical in increasing the demand for green bonds, asset owners will be surveyed separately at a later point.

About Climate Bonds Initiative

CBI is an investor-focused not-for-profit, promoting investment in the low-carbon economy. CBI undertakes advocacy and outreach to inform and stimulate the market, provides policy models, market data and analysis, and administers the international Climate Bonds Standard & Certification Scheme.

CBI's green bond database is based on alignment with the Climate Bonds Taxonomy, which excludes all fossil fuel power.¹

Climate Bonds Certification is a labelling scheme. Rigorous scientific criteria ensure that it is consistent with the 2°C warming limit of the Paris Agreement. Certification requires initial and ongoing third-party verification to ensure the assets meet the metrics of sector criteria.²

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Glossary of terms and abbreviations

AuM – Assets under Management.

UoP – Use of Proceeds define the intended allocation of the bond proceeds by category of investment. CBI assesses what assets and/or projects each bond will (re)finance and determines the UoP by reference to the eight categories defined by the Climate Bonds Taxonomy. To the extent possible, allocations to adaptation and resilience (A&R) measures are also distributed by category. Throughout this report, UoP refers to allocations to the categories defined by the Climate Bonds Taxonomy and to unallocated A&R.

Sectors – BICS (Bloomberg Industry Classification System) or GICS (Global Industry Classification System) sectors define the issuer's industry, i.e. the economic activity used to support the repayments of the bond. Throughout this report, we refer to BICS or GICS, as appropriate.

EM – Emerging Markets. CBI follows the MSCI market classification (<https://www.msci.com/market-classification>).

DM – Developed Markets. CBI follows the MSCI market classification (<https://www.msci.com/market-classification>).

Climate-aligned issuer – Bond issuers that derive at least 75% of their revenues from *green activities*, whereby activities are assessed against the Climate Bonds Taxonomy. Where such bonds are labelled as green, they are referred to as green bonds in CBI research and data. Where not labelled, they are referred to climate-aligned bonds and/or bonds from fully-aligned issuers.

TCFD – The Task Force on Climate-related Financial Disclosures, commissioned by the Financial Stability Board, has developed a set of recommendations for voluntary and consistent climate-related financial risk disclosures in mainstream filings.

TEG – Technical Expert Group on sustainable finance set up by the EU to develop unified metrics for climate-friendly investments. The EU's TEG published the first part of the EU Taxonomy for sustainable finance in June 2019.

NGFS – The Central Banks and Supervisors Network for Greening the Financial System seeks to share best practices and develop climate risk management while mobilising global climate finance.

Key issues for green bond investment



Issuer Types (ranking comparison)

Current GB Market	Investor Preference
Development Bank	Non-Financial Corporate
Financial Corporate	Financial Corporate
Non-Financial Corporate	Sovereign
ABS/MBS	Development Bank
Local Government	Local Government
Sovereign	ABS/MBS

Sectors (ranking comparison)

GHG emissions	Investor Preference*	Current GB Market
Energy / Utilities	Energy / Utilities	Energy / Utilities
Industrials	Industrials	Buildings
Consumer Discretionary	Consumer Discretionary	Transport
Consumer Staples	Materials	Waste
Real Estate	Real Estate	Land Use / Agriculture
Materials	ICT	Industry
ICT	Consumer Staples	

* Refers to Non-Financial Corporates
GHG emissions and Investor Preference in terms of GICS sectors; Current GB Market in terms of UoP categories.

Summary of findings

Survey results indicate a lack of adequate supply of green bonds, with 67% of respondents overweight against the market. *See p. 4*

Investors regard transparency very highly and green bonds are well positioned to play an increasingly important role.

Investors want deals with high climate impact

There is a broad positive correlation between the level of interest from respondents in industry sectors with the greenhouse gas (GHG) emissions of those sectors. This suggests that respondents are informed of climate change issues and are looking to invest capital in sectors that need to lower their GHG emissions the most. *See pp. 6-7*

- When asked to identify the non-financial corporate sectors in which they would like to buy more green bonds, respondents highlighted Industrials, Energy and Utilities, Consumer Discretionary, and Materials as the top sectors. *See pp. 6-7*
- Respondents are supporting all UoP categories, as defined under the Climate Bonds Taxonomy. The Taxonomy excludes certain assets and projects that are not ambitious enough or aligned with a 2-degree future, most notably investments in fossil fuel power generation and related technology, given the existence of a viable alternative (renewables). *See p. 6*
- Compared to their GHG emissions, Industry and Land use appear to be the most under-funded sectors at a global level. Governments could step in with supportive policy initiatives and possibly sovereign bonds, especially since respondents expressed strong demand for this issuer type. *See pp. 7-8*

Investors value green credentials

The most important factor for making a green bond investment decision is satisfactory green credentials at issuance. *See p. 9*

- Accountability and discoverability (i.e. ease of identification) are among the main advantages that green bonds bring to the capital markets.
- Respondents demonstrated high expectations of integrity, with 79% saying they would not buy a green bond if the proceeds were not clearly allocated to green projects at issuance. By the same token, 55% would definitely sell if post-issuance reporting was poor, and 30% would be more likely to. *See pp. 9-10*

Investors want more issuance from corporates

Deals from financial and non-financial corporate issuers represent 45% of current outstanding green bonds, whereas 93% of respondents highlighted corporate issuance as one of their preferred investment channels. *See p. 5*

- Non-financial corporate and sovereign issuers represent a substantially lower share of currently available bonds compared to stated demand from respondents. *See p. 5*
- Respondents identified Industrials, Energy and Utilities, Consumer Discretionary, and Materials as the top sectors where they want to see more green bond issuance. From the top five bond issuers in the top five sectors – i.e. out of 25 bond issuers – only six have issued green bonds. This points to significant potential for unmet demand to be fulfilled through scaling up green bond issuance. *See pp. 6-7 and p. 21*

Investors view policy as key to scaling up

Respondents view policy as the most effective way to scale up the green bond market, with standardisation of definitions being a priority. *See pp. 10-14*

- The EU’s TEG is establishing a classification system for sustainable finance which will help to standardise green definitions in the EU and internationally.
- Policies such as tax incentives and differentiated capital treatment of low- versus high-carbon assets, designed to channel investment from high- to low-carbon assets, are also regarded as having high potential. *See p. 11*

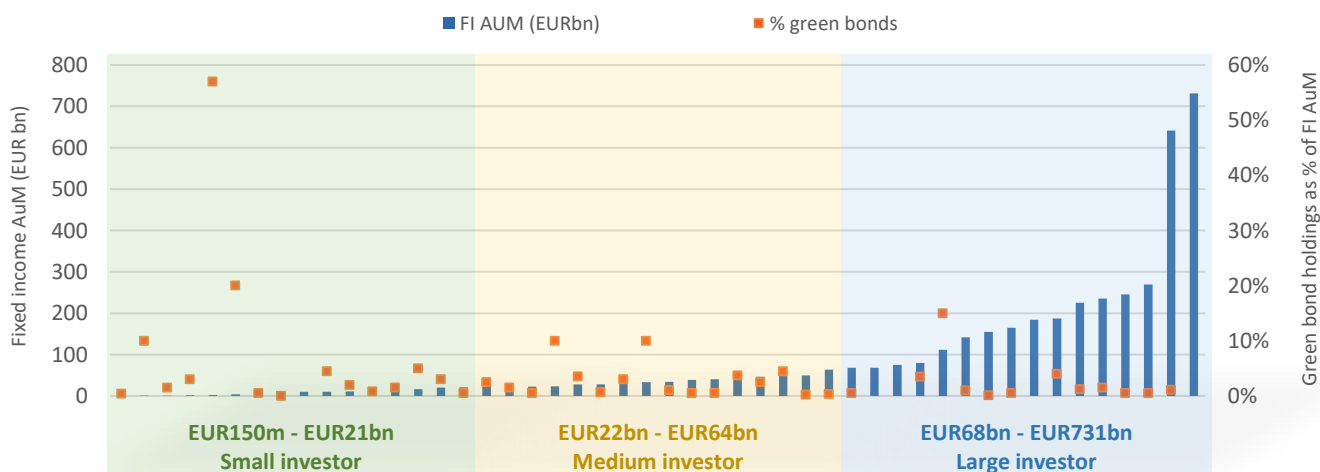
Credit rating agencies and similar institutions may play a critical role by developing integrated ratings and encouraging smaller investors to increase their green bond investments. *See pp. 10-11*

EM green bonds are viewed favourably but investors want more and bigger deals

Respondents value the transparency and comparability that green bonds bring and welcome the opportunity for closer scrutiny that green bonds provide, especially in EM. *See p. 15*

82% of respondents can buy EM debt. However, the limited availability of EM green bonds is exacerbated by respondents’ restrictions on credit rating, currency exposure, and minimum size requirements. *See p. 15*

Respondents in the lowest AuM tercile tend to have a larger proportion of green bond holdings

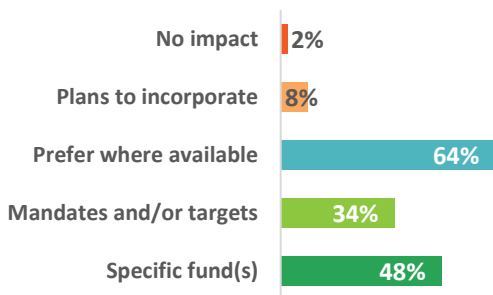


Investment policy overview

To start off, respondents were asked to describe how green bonds had impacted investment decisions and how much of their fixed income AuM were green bonds.³ Since multiple options could be chosen for the first question, the figures below add up to more than 100%

Almost two-thirds of respondents (64%) said they prefer green bonds where available and competitively priced (over vanilla equivalents). Over half of these also have a specific green bond fund and/or mandate, suggesting that their interest in green bonds permeates their other funds and mandates, not just the dedicated ones.

Two thirds prefer green bonds where available and competitively priced



Almost half of the respondents (48%) have a specific green bond fund, and a third (34%) have specific mandates or targets. Some have both, as overall 56% of respondents had either specific fund(s) or mandates.

Just 2% said that green bonds have not impacted their investment decisions, and 8% had plans to incorporate them in their investment decision-making.

Around 67% of the respondents are overweight against the global green bond market, highlighting unmet demand for green bonds. The share of green bonds in the global fixed income market is around 0.5%, but 88% of respondents invest 0.5% or more of their fixed income AuM in green bonds.⁴

On average, respondents have invested 4.6% of their fixed income AuM in green bonds. Large respondents have a smaller percentage (2.8%) of holdings invested in green bonds compared to small asset managers (7.4%).

- **Nordic investors** have access to plentiful green bond opportunities in their local currencies (e.g. 243 SEK-denominated bonds totalling SEK235bn/USD28bn) and/or from local issuers. Nordic respondents invest the highest percentage of holdings in green bonds (6%).
- **Respondents from the UK** invest less (3%), which is unsurprising given the woeful lack of green bonds denominated in GBP (21 bonds totalling GBP6bn/USD8bn).

A lack of suitable assets is impeding the growth of the green bond market. Results from this survey are provided by a group of investors overweight against the green bond market, which may have influenced their decision to participate. However, this reinforces the fact that investors are eager to support this market and that the lack of available assets could be a barrier to entry for potential new entrants to the market.

"We prefer to source green bonds in the primary market where possible, since it is challenging to find scale in the secondary market."

Thomas Back – Senior Portfolio Manager, Swedbank Robur

Green bond investment preferences

Preferred channels for green bond investment

Respondents were invited to describe their preferred channels for green bond investment, which include a mixture of issuer types, instruments, and business activities. Respondents were asked to select all that applied.

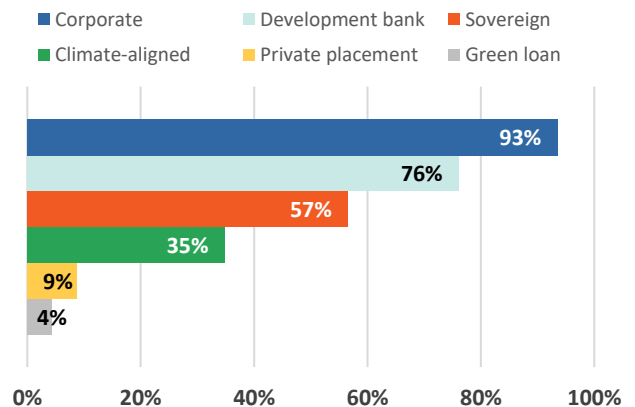
Over 90% of respondents expressed a preference for corporates, followed by development banks and sovereigns. A third expressed an interest in bonds from climate-aligned issuers, and some are interested in private placements (9%) or green loans (4%).

Respondents that actively invest in green bonds (56%) tend not to prefer bonds from climate-aligned issuers and have lower preferences for green bonds issued by development banks. On the flip side, they have higher than average preferences for private placements and green loans.

Respondents with 1% or more of their AuM in green bonds are three times more likely to include sovereigns among their preferred channels. Sovereign bonds are typically larger in size, thus offering more opportunity for investments.

Only large respondents show interest in green loans, possibly because of the resources required to evaluate such instruments.

Respondents prefer corporates, development banks and sovereigns



"Local governments could issue green bonds to develop infrastructure for low carbon transport such as hydrogen fuelling stations."

Andreas Dankel – Head of Credit, Danske

35% of respondents highlighted climate-aligned issuers as a preferred investment channel. Climate-aligned bonds without the green label may not be suitable for investors with dedicated green bond funds, since the green bond label is used to identify the permitted assets according to the policy guidelines of such funds. However, they could be slotted into a broader responsible investment strategy, and there is plenty of opportunity to do so.

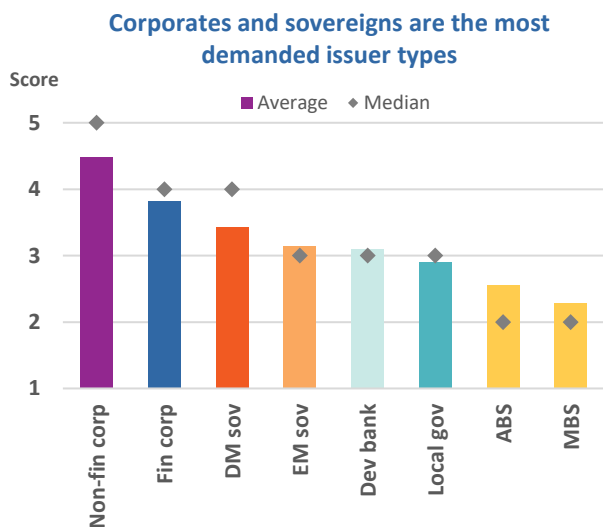
CBI analysis from September 2019 revealed USD859bn of outstanding bonds from climate-aligned issuers, compared to USD569bn of labelled green bonds (as of the cut-off date).⁵

Private placements were chosen by 9% of respondents. Most respondents said they were not permitted to or preferred not to buy private placements because of liquidity constraints.

Preferred issuer types

Respondents were asked to assign a score between one and five to eight named issuer types, according to the intensity of their demand for each, 1 being the lowest and 5 the highest.

Non-financial corporates emerged as the clear preference among respondents, followed by financial corporates. Apart from the highest average score, non-financial corporates also exhibit the lowest variation of answers, suggesting it is a priority issuer type for most respondents.



Respondents expressed higher demand for issuance from Developed Market (DM) sovereigns over EM sovereigns. This is likely related to the higher risk, currency restrictions, lack of liquidity, and possibly lower transparency associated with EM.

The greatest variation in demand is for green ABS and EM sovereign issuance, closely followed by development banks and green MBS.

In relative terms, some issuer types are under- or over-represented relative to the demand described by respondents. It is precisely these types of relative imbalance that this survey aims to understand and highlight.

In absolute terms, there is too little issuance across issuer types, according to investors.

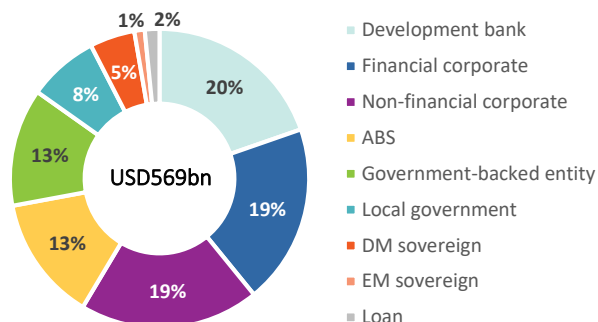
“Too much issuer concentration makes it hard to construct a well-balanced green bond portfolio. Issuers from a wide variety of sectors are needed to diversify risks.”

François Millet – Head of ETF Strategy, ESG and Innovation, Lyxor Asset Management

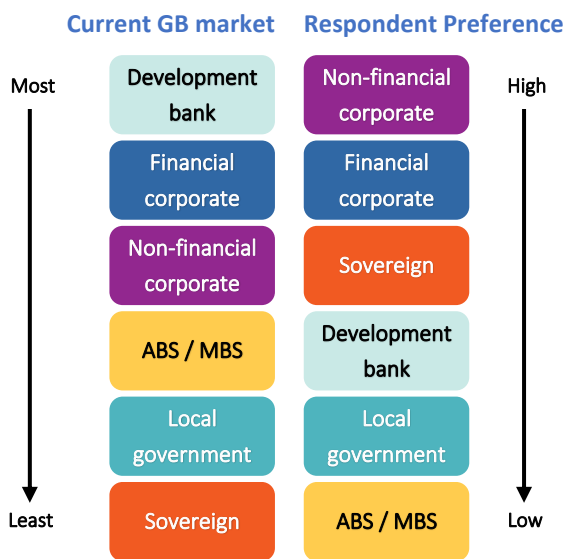
Demand vs supply of green bonds by issuer type

Development banks, financial corporates and non-financial corporates are each responsible for about a fifth of green bond issuance by value.

Development banks and corporates dominate current green bond issuance



Comparing respondent preferences with current green bond availability points to opportunity particularly for non-financial corporate and sovereign issuers to bring more green bonds to the market. In both cases, policymakers will be instrumental in addressing the barriers to issuance that exist among these issuer types (e.g. potential extra costs of issuing green bonds, identification of suitable projects, etc.). The *Moving the Market Forwards* section contains more detail on this topic.



Note: Comparison excludes government-backed entities and green loans.

Respondents expressed demand for both DM and EM sovereigns. The momentum in sovereign issuance, if sustained, could help to narrow the supply/demand imbalance. Germany, Spain, Egypt, Peru and Colombia have indicated an interest in issuing sovereign green bonds, while the Netherlands, Hong Kong and Chile entered the market with green sovereign bonds in H1 2019.

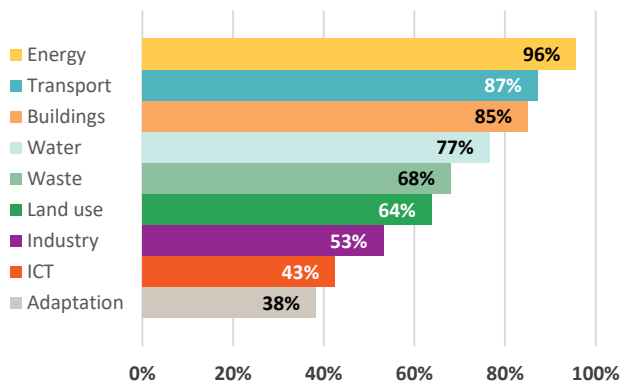
Development banks are pioneers and prolific issuers of green bonds, so comparing the size of this issuer type to demand from respondents indicates a relatively adequate supply. From an investor standpoint, and relative to other issuer types, perhaps this suggests development banks could more effectively support the market's growth "indirectly" rather than as green bond issuers themselves, e.g. through de-risking tools (such as credit guarantees and insurance policies), anchor investing (for instance via private placements or junior debt), providing technical assistance, etc.

Preferred investment categories

Preferred use of proceeds by sector

Respondents were asked to disclose the use of proceeds of their current investments, and which UoP categories they would like to finance. The UoP sectors are categorised according to the Climate Bonds Taxonomy.¹

Majority of respondents show interest in most UoP categories



The Adaptation category in the chart above is a catch-all preference category for investor willingness to fund investment in adaptation and resilience (A&R) measures. While A&R measures can be – and often are – financed together with mitigation measures for a specific sector, the survey specifically asked about A&R as such measures may involve funding programmes rather than specific assets and there are issuers who have raised funding specifically for A&R investment (e.g. flood prevention and protection, coastal defences). The Netherlands sovereign green bond is a recent example.

“Our green bond investments are currently focused on mitigation. We would increase our holdings in Adaptation / Resilience if there were more opportunities available.”

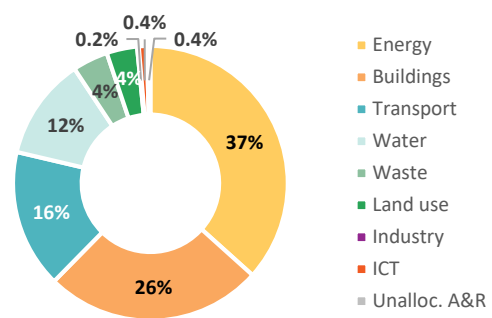
Johann Ple – Fixed Income Portfolio Manager,
AXA Investment Management

There is currently more demand for bonds financing mitigation in preference to adaptation, although there is clearly interest in buying green bonds with UoP financing all categories:

- **Mitigation investment preferences:** Energy is most popular, followed by Transport and Buildings. ICT and Industry are less popular UoP categories, but there is still material interest.
- **Adaptation investment preferences:** Water and wastewater management was cited most often. However, only 38% of respondents are investing or intend to invest in A&R, mainly due to lack of opportunities and/or lack of clear metrics.
- Medium-sized respondents seem to be more selective about the activities they finance, showing less intention to buy green bonds in every UoP category.

No categories seem to be excluded by investors, suggesting they are willing to support all areas of the market. The UoP categories that respondents said they invest or would like to invest in broadly correspond to UoP allocations of issued bonds. This is possibly influenced by limited investment choices and/or the fact that the UoP is not necessarily related to the issuer’s sector.

80% of issuance to date is allocated to Energy, Buildings and Transport



Preferred non-financial corporate sectors

UoP categories define the assets or projects being financed, i.e. what the proceeds will be spent on and hence the sources of GHG emissions to be addressed.

Industry sectors define the business activity or economic function supporting the debt repayment. A company from any sector may issue a green bond to finance an UoP category, at least in theory. For example, Apple is classified in the Information Technology sector according to GICS⁶ (Technology, according to BICS⁷), but the UoP of its recent green bonds pertains to Buildings, Industry and Energy, as those were the types of projects financed.

As investors tend to analyse investments by sector rather than UoP category, certainly among non-financial corporates, we explored investor preferences for industry categories as well.

Respondents were asked to list the top three non-financial corporate sectors in which they would most like to buy green bonds. We categorised these according to the commonly used GICS. Whilst this was often straightforward, some responses were ambiguous: for example, ‘Transport’ could mean either Industrials (e.g. rail transport) or Consumer Discretionary (e.g. automotive). It is also worth noting that the preferences refer to non-financial corporates, not necessarily to the overall preferences (i.e. including other issuer types).

The frequency of each industry sector cited, as well as the share of total AuM, were measured and compared to the contribution of GHG emissions from each sector.⁸ A more detailed explanation of our methodology and assumptions is provided in the endnotes.^{9,10}

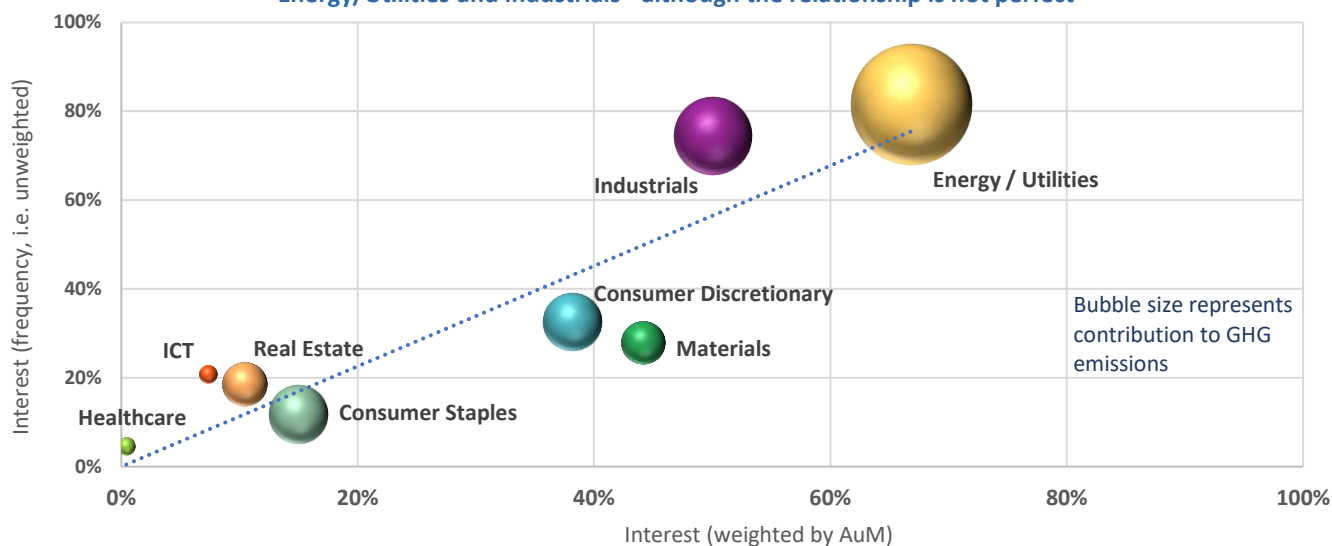
Investors want to see more issuance particularly from the following five sectors (by GICS category):

1. **Industrials** (e.g. transportation, machinery, services)
2. **Utilities** (e.g. electric, gas, water)
3. **Consumer Discretionary** (e.g. automotive, retail, electronics)
4. **Energy** (e.g. oil & gas, but for *renewable* energy projects)
5. **Materials** (e.g. metals & mining, chemicals, forestry products, construction materials)

“We would welcome more green bonds from sectors such as Capital Goods, Healthcare, and Basic Industries to enable greater diversification. Green bonds could enable capital markets to support companies from these sectors in their transition to low carbon business models.”

Scott Friedman – Credit Analyst and Portfolio Manager,
Newton Investment Management

Respondents broadly show more demand for bonds in the highest emitting sectors - such as Energy/Utilities and Industrials - although the relationship is not perfect



How to read this chart

The level of interest is based on the number of respondents (vertical axis) as well as the respondents' share of AuM (horizontal axis). The sector's contribution to GHG emissions is represented by the size of each bubble.

One can therefore infer the level of demand relative to respondent size by comparing the position of each bubble with the trend line. Sectors below the line, such as Consumer Discretionary and Materials, are more in demand by large respondents relative to those above the line, such as Real Estate and Industrials.

The comparison with GHG emissions, shown above, is to assess whether there is a relationship between the sectors respondents want to invest in, and their level of pollution. There cannot be a perfect match between the two because the activities of some sectors lend themselves to debt financing better than others, and companies in those sectors are thus more able to issue green bonds. Notwithstanding this, the results are interesting.

There is a broad positive correlation between the level of interest in sectors with their GHG emissions. This is likely due to the higher need for green investment being precisely in the most polluting sectors, and the fact that green bond issuance is severely lacking in some high-emission sectors like Industrials and Metals/Mining. Even so, Materials – and to some extent Industrials – garnered relatively more interest from respondents than their emissions would suggest, whilst Consumer Staples (e.g. agriculture) seems to be less demanded relative to its level of pollution. It is also noteworthy that Consumer Discretionary is considerably more in demand than Consumer Staples, despite similar GHG emissions, due to substantial demand for automotive bond exposure.

These results point to a sophisticated investor base, with the knowledge and capital needed to address climate change issues through investment decisions. Issuers, particularly those in sectors with the largest GHG emissions, can absorb this capital by issuing green bonds to fund their transition to a low carbon, climate resilient business model.

Where's the green?

Appendix 5 shows the five sectors (BICS) where respondents said they would most like to buy more green bonds. The five largest bond issuers by amount outstanding (in USD) in each sector were identified. The current combined size of the bonds from these 25 issuers is USD1.5tn, almost thrice the size of the entire green bond market as of April 2019.

However, it was determined that **only 8 of the 25 issuers have issued green bonds**: one from Industrials (railway company SNCF Réseau), five from Utilities (EDF, Duke Energy, State Grid of China, Enel SpA, and The Southern Co.), and two from Consumer Discretionary (Volkswagen and Toyota Motor) as of Q1 2019. There are no green bond issuers in the top 5 in the Energy and Materials sectors. We note that while *GICS* classifies renewable energy as Utilities, *BICS* does so under Energy, so the top five BICS Energy issuers could include renewable energy producers (and green bond issuers). In any case, fossil fuel producers could invest in renewables and respondents expressed a preference for this.

There is therefore potential for unmet demand to be satisfied through large scale green bond issuance, as these companies align their business activities and practices with a 2-degree future.

“Oil and gas companies could issue transition or energy efficiency bonds to finance their path away from fossil fuels and towards a sustainable future.”

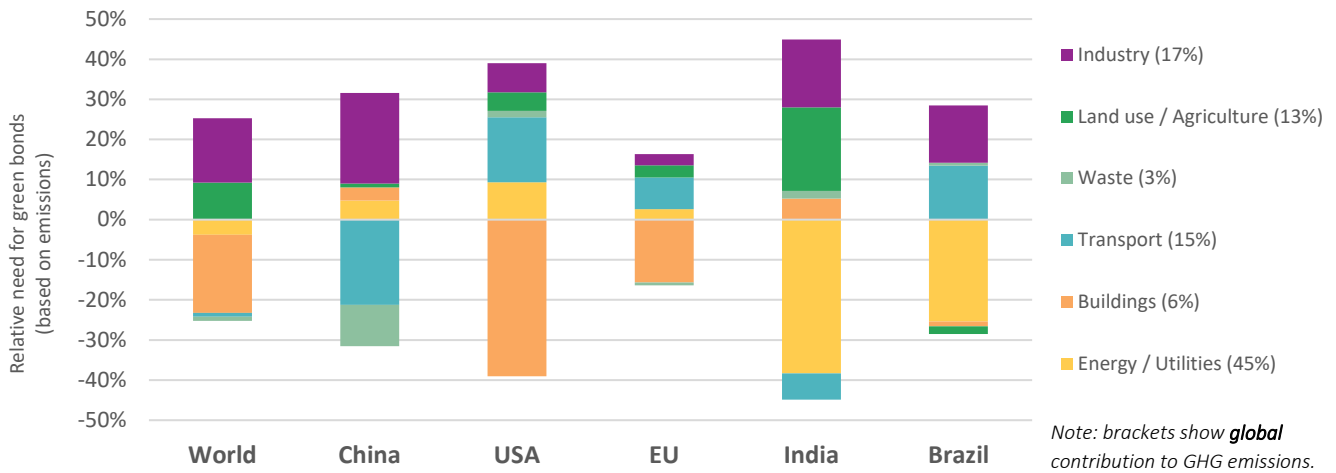
Felipe Gordillo – Senior ESG Analyst,
BNP Paribas Asset Management

Funding gap: GHG emissions v green bond UoP

To identify relative funding gaps, we compared UoP categories to GHG emissions.¹¹ Unlike the previous comparison, which was framed in terms of non-financial corporates' *GICS* sectors, there is no restriction on issuer type in this analysis. **GHG emissions based on *GICS* sectors are now compared with available green bonds based on UoP categories, rather than to investor preferences.**

The analysis is on a best-efforts basis, the results being indicative rather than exact. Since *GICS* sectors do not match UoP categories exactly, the categories in the chart below are an adapted version of the UoP categories. More detail is provided in the endnotes.^{12,13}

Green bonds could be leveraged to address relative sector funding gaps across the world



How to read this chart

The graph shows mismatches between green bond issuance in different sectors and their contribution to GHG emissions, *relative to other sectors*. The sum of all sectors in a given region therefore adds up to zero. **The results show relative (not absolute) imbalances.**

The vertical axis represents the relative need for issuance in each sector category, given its contribution to GHG emissions in each region. Sector categories above the 0% line thus have a “shortfall” of issuance relative to others (i.e. the share of emissions exceeds the share of green bonds), whereas those below have an “excess” (i.e. the share of emissions is lower than the share of green bonds). For example, since Industry contributes 17% to global GHG emissions but only 1% of green bonds, it has a relative shortfall of green bonds of 16%.

The most striking conclusion is that Industry is considerably under-funded across all regions given its high emissions profile, but particularly so in China. **Land use/Agriculture is also consistently under-funded**, except for Brazil where a lot of sustainable forestry and paper product companies have issued green bonds.

On the other hand, **Buildings is typically over-funded**, apart from small shortfalls in China and India, but especially in the USA given the large amount of US green MBS issuance from Fannie Mae.

These findings compare with relatively high interest in Industrials and low interest in Real Estate expressed by survey respondents.

This again suggest substantial upside potential in issuing green bonds to finance the transition to a low-carbon economy in high-emissions sectors.

There is, however, more variation for sector categories. Energy/Utilities, for example, is relatively under-funded in China, USA and EU but over-funded in India and Brazil. Transport is relatively better funded in China and India than elsewhere.

Green bond issuance in the EU seems to be most in line with the region’s emissions profile since the mismatches are smaller (<20% positive or negative). Conversely, India and the USA demonstrate greater mismatches. Europe is the largest regional green bond market with investments across sectors.

The role of government in addressing imbalances

As noted above, respondents highlighted their preference for more sovereign green bonds, which only represent 7% of issuance as of Q1 2019. In this context, the relative funding gaps highlight the types of projects and investments governments, and policy setters more broadly, should prioritise.

For example, governments could direct relatively more resources towards the under-funded sector categories in order to meet their Nationally Determined Contributions under the 2015 Paris Agreement. The most obvious way to do so would be to create policies and/or issue sovereign green bonds, channelling investment into priority areas such as agriculture and

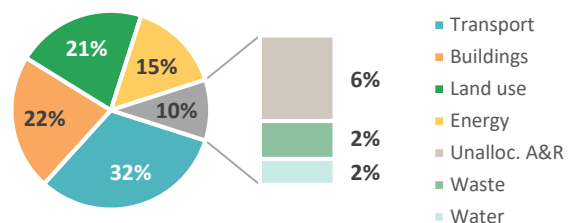
decarbonising transport. Even for assets and projects that can be more appropriately funded by the private sector, it is up to each policymaker to devise supportive policy whether in the climate or capital markets arena.

“We would like to see the commitments of the COP21 Paris agreement translated into new regulations at country level, to support the evolution of the green bond market.”

Wolfgang Pinner – CIO Sustainable and Responsible Investments, Raiffeisen Capital Management

Sovereign issuance through Q1 2019 (USD34bn) has seen quite different allocations to sectors compared to the overall market mix. Transport, Land use and Adaptation represent a larger share, whilst Energy and Water are less represented. Q2 2019 issuance, which is not included in the data as it is after the report cut-off date, has seen more allocations to Transport (from Chile) and Water and Adaptation / Resilience (Netherlands).

Transport, Buildings and Land use represent 75% of sovereign issuance



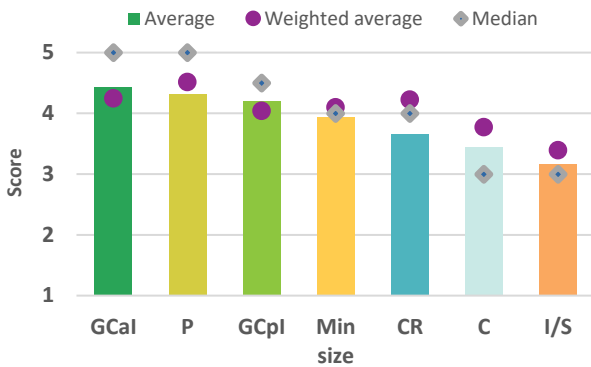
Some categories, such as Transport, Land use and Adaptation, thus appear particularly suitable for sovereign funding, although some creativity may be required. For example, agriculture falls within Land use but the proceeds may better be used to develop institutional capabilities and funding programmes for sustainable agriculture, rather than directly in project implementation. Water and Waste also show high potential for public sector issuance.

Investment decision-making

Labelled green bonds require issuers to define the UoP as green. Most issuers also obtain an external review and declare their intentions to report how and when the proceeds are mobilised. One would thus expect such factors to influence investment decision-making.

Respondents profess a high level of integrity and commitment to green, expecting the same from issuers. They were asked to rank the relative importance of seven factors for green bond investment decisions.

Green credentials and pricing are the most important to decision-making



Abbreviations:

GCal = green credentials at issuance, **P** = pricing, **GCpl** = green credentials post-issuance, **Min size** = minimum size of issue/liquidity, **CR** = credit rating constraints, **C** = currency preferences, **I/S** = issuer/sector constraints

The most important factor for making a green bond investment decision is satisfactory green credentials at issuance, followed by pricing and satisfactory green credentials post-issuance. Credit rating constraints, currency preferences and issuer/sector constraints appear to be the least important factors in the specific context of green bond selection.

Comparing the mean scores with the weighted averages suggests large respondents place less importance on green credentials at- and post-issuance whilst attaching more importance to credit metrics: credit rating constraints, currency preferences and pricing. This could be due to lower rated bonds and deals in less robust currencies still being considered a ‘high risk’ category and therefore subject to liquidity concerns, i.e. less option to sell the investment in the secondary market if the bond ceases to meet the investors’ requirements (limited pool of potential buyers).

Enhancing the appeal of green bond investing

Respondents were asked to rank factors that could make investing in green bonds more attractive.

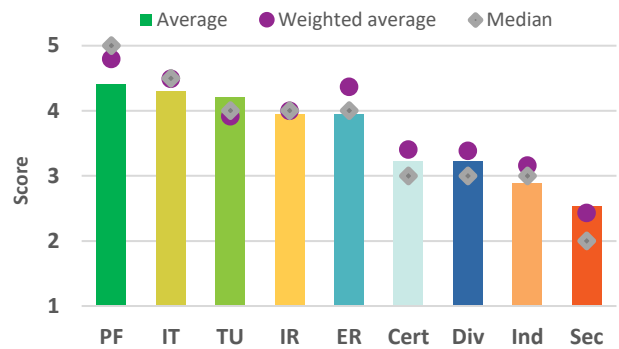
Positive issuer fundamentals and issuer transparency emerged as the most important factors to increase the appeal of green bonds.

Post-issuance disclosure/transparency, impact reporting and external reviews follow not far behind. CBI’s *Post-issuance reporting in the green bond market 2019* publication identifies the trends and best practice for post-issuance reporting.¹⁴

“Transparency and disclosure are the most important considerations in green bond investments.”

Luca Terruzzi – Senior Portfolio Manager, Anima SGR

Positive fundamentals and transparency are the most attractive features



Abbreviations:

PF = positive fundamentals, **IT** = issuer transparency, **TU** = transparent UoP, **IR** = impact reporting, **ER** = external review, **Cert** = certification (CBI), **Div** = diversification, **Ind** = index inclusion, **Sec** = securitization

Central European and UK respondents differ the most, the former attaching much more importance to impact reporting and portfolio diversification than the latter.

Impact reporting is gaining importance within the investment community. Yet, it is still not a fundamental factor in investment decision-making. Not surprisingly, it’s more influential for respondents that have integrated green bonds to a greater extent.

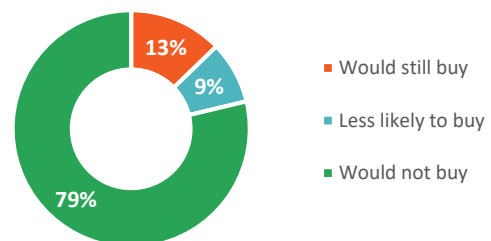
“The ability to measure and report impact could be developed to support investment in green bonds.”

Nathalie Rodes and Luisa Flores – Senior Portfolio Analysts, Sustainable Thematics, Research and Portfolio Management, La Banque Postale AM

Green integrity drives investment decisions

The vast majority of respondents (79%) said they would not buy a green bond if, at issuance, the proceeds were not clearly allocated to green projects. Only 13% of respondents said they would, whilst 9% would be less likely to.¹⁵ This reflects the importance assigned to green credentials and transparency at issuance.

Unclear green UoP strongly influences investment decision-making



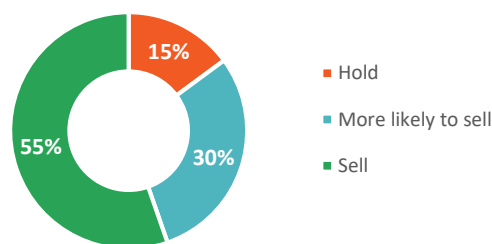
Large respondents seem considerably more inclined to buy a bond with unclear green UoP (23%). This is probably linked to the fact that they focus on credit credentials rather than green credentials in upfront decision-making. This could mean that large asset managers are more concerned with having an exit strategy, while medium-sized and small asset managers are more likely to be buy-and-hold investors with specific green mandates. This question was not specifically asked in this survey.

Lack of clarity on the UoP at issuance seems to impact the investment decisions of Central and Southern European respondents more than those from the UK & Ireland, where only 61% would not buy a bond if unsure about its greenness.

Over half (55%) of respondents said they would definitely sell a green bond if *post-issuance* reporting was poor, and only 15% of respondents said they would not. Interestingly, 30% would be inclined to sell but would engage with the issuer before divesting. One or two respondents said they may not sell the bond, but would strip its green label, and if it were in a green bond fund, they would move it elsewhere.

This question highlighted some regional differences, too. Overall, Central and Nordic European respondents seem to place more importance on post-issuance disclosure than those from other parts of Europe, with none stating they would hold onto the bond. Conversely, 67% of Southern European respondents and 31% of UK & Irish ones would do so. This approach could also be influenced by the relative size of the respective green bond markets: much larger in the former than the latter regions.

Poor post-issuance reporting can lead to bond sale



Nordic respondents seem to have a greater culture of issuer engagement compared to other European regions, with four of five saying they would engage with issuers before deciding to sell or keep. This could be partly due to Nordic countries having local currency bonds and possibly stronger relationships with issuers.

Greater issuer engagement on ESG strategy is an emerging trend in the fixed income space and green bonds appear to be facilitating this process.

Moving the market forwards

Preferred market tools and mechanisms to scale up the green bond market

Respondents were asked to select from a list of market tools and mechanisms which could help to scale up the green bond market.

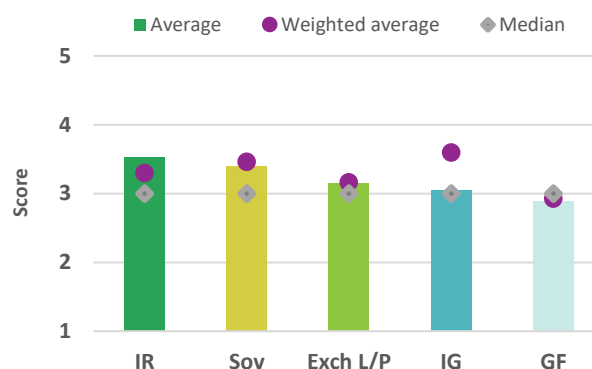
Respondents ranked integrated credit ratings¹⁶ and sovereign green bond issuance as the most effective market mechanisms, although large respondents show relatively more preference for investment guarantees. The least preferred tool is green funds set up by international organisations, as shown opposite.

Rating agencies and similar institutions could play a focal role in assisting investors, especially smaller ones, to increase their green bond investments. Increasing the scale of the market means that small respondents can grow their green bond investments. The current supply deficit is choking this potential. The survey suggests that small and medium-sized respondents believe that international credit ratings with integrated environmental analysis are the most effective way to scale up the market, possibly as a result of limited resources. The same results apply to respondents that have the lowest integration of green bonds in their investment decisions and processes.

Attitudes towards sovereign bond issuance seem to be somewhat influenced by the domicile of the respondent. For example, UK respondents do not believe sovereign green bonds will support growth as much as those from the Benelux. This could be linked to the sovereign bonds already issued from Belgium in 2018 and the Netherlands in May 2019 (past this report's cut-off date).

Anecdotally, several respondents highlighted the challenges (for issuers) of providing green bond disclosure in a standardised way as well as (for investors) locating and comparing pre- and post-issuance green bond reports. The same respondents suggested a repository for all documentation related to green bonds accessible by all market participants, assisting issuers and investors, and possibly even in an open access format. Some also suggested that such a database could be managed by a not-for-profit or other independent third party.

Integrating credit ratings seen as most effective market tool



Abbreviations:

IR = integrated ratings, Sov = sovereign bonds, Exch L/P = exchange lists/platforms, IG = investment guarantees, GF = green funds

At present, 17 stock exchanges including Luxembourg, Tokyo, and Vienna, have, or plan to introduce, green bond platforms. Some of those (e.g. Luxembourg) provide green bond documentation databases for bonds listed on their platforms.

In this context, the Inter-American Development Bank (IDB) is currently developing a public Green Bond Transparency Platform for Latin America and the Caribbean, with advisory support from a consortium of market actors including standard-setters, external review providers, issuers, investors and underwriters.¹⁷

Policy mechanisms are perceived as more effective than market ones

Policymakers are shaping the vision of tomorrow through today's regulation. In the green bond market everything is still voluntary, but soft law is supporting green bond issuance. CBI classifies existing policies in a policy database.¹⁸ Existing policies are extremely limited but include subsidies and tax incentives, which were two of the options presented as possible responses.

Green bond subsidies and tax incentives

(as of May 2019)

Subsidies

China has at least four regional subsidy schemes in place, including in Beijing, Xiamen, Xinjiang and Shenzhen.

Hong Kong's Green Bond Grant Scheme provides up to HKD800k subsidy to offset the cost of an external review.

Japan's Financial Support Programme for Green Bond Issuance offers subsidies of up to JPY50m (USD4.5m) to meet costs related to green bond issuance.

Malaysia's Green SRI Sukuk Grant Scheme permits institutions raising funds in compliance with the SRI Sukuk Framework to claim 90% of external review cost subject to a maximum of MYR300k (USD77.5k) per bond.

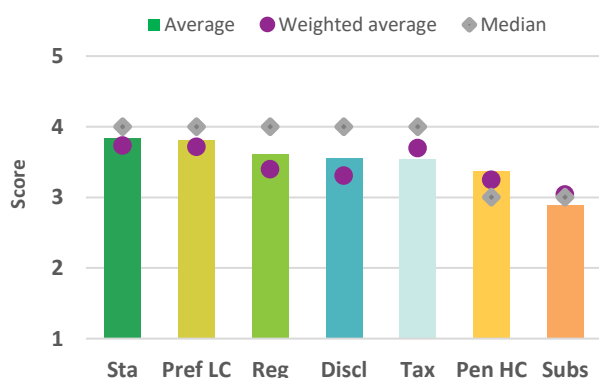
Singapore's Green Bond Grant Scheme assists eligible issuers with 100% of the costs of an external review up to SGD100k (USD73k).

Tax incentives

Malaysia offers SRI Sukuk tax deduction on issuance costs until 2020. While not related just to green bonds, it also offers tax incentives for green technology activities in energy, transportation, building, waste management and supporting services, as well as financing incentives under the Green Technology Financing Scheme (GTFS).

Respondents view policy as the most effective way to scale up the market, a view supported throughout responses. Asset managers were invited to rank policy mechanisms that could be used to help scale up the green bond market. All the policy tools listed scored relatively high, except for subsidies.

Policy mechanisms score higher than market tools



Abbreviations:

Sta = standardisation, **Pref LC** = preferential treatment of low-carbon assets, **Reg** = regulatory trends, **Discl** = mandatory disclosure, **Tax** = tax incentives, **Pen HC** = penalise high-carbon assets, **Subs** = subsidies

Standardisation of definitions was the highest scoring policy mechanism on average, with respondents less active in the green bond space seeing more potential in this policy tool. This is likely due to such respondents being more reliant on external definitions of green, consistent with other survey results.

The Technical Expert Group on Sustainable Finance (TEG) is establishing a classification system for sustainable finance which

will help to standardise green definitions in the EU and internationally, which could offer some clarity in this area.

Preferential capital treatment of low-carbon assets and regulatory and legislative trends were a close second (after standardisation). Interestingly, penalising capital requirements for high-carbon assets – the flipside of preferential capital treatment of low-carbon assets – was among the lowest scoring options. This may be partly due to respondents not wanting to “shoot themselves in the foot”, as they could be hit if this policy were implemented. This would especially impact larger investors with comparatively more brown assets, who unsurprisingly seemed less supportive of this policy than smaller asset managers.

It was also suggested that penalising investment in high-carbon assets could be avoided by selling off such assets whilst not actually being invested in green ones. Therefore, policies encouraging investment in low-carbon assets directly would be more effective.

Mandatory climate-related financial disclosures and tax incentives were the next highest scorers. Large respondents, and those with a greater percentage of green bonds, tend to be more aware and assign more importance in bringing scale to the implementation of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD, see next page).

Respondents seem to believe that incentives could have a material effect in helping the market grow, regardless if they were for issuers or for investors. Essentially, respondents believe that the carrot rather than the stick will move climate finance forward.

Subsidies were by far the lowest scoring tool. A common reason given by respondents for the lack of appeal of subsidies was that they believe the subsidy would simply “go in someone’s pocket” instead of being a robust tool to scale up green investment. While both subsidies and tax incentives are extremely limited in both geography and scope, green bond subsidies are currently available in five countries, while tax incentives, which respondents claimed to prefer, are only active in Malaysia.

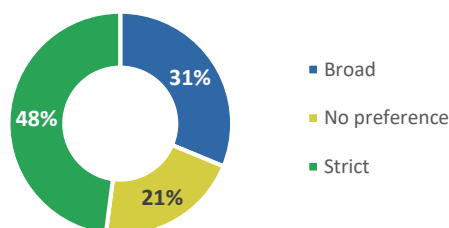
“We need simplicity and transparency. So clearer definitions, the use of international standards and labelling, supported by potential regulation, would enhance growth and scale in the green bond market.”

Alban De Faÿ – Head of Fixed Income SRI Process, Amundi

Green bond definitions

Respondents expressed differing views on the best strategy for defining green bonds. Half believe the definitions should become stricter (48%), a third indicated the opposite (31%), and a fifth expressed no preference (21%).

More respondents prefer stricter definitions



Notably, several respondents explained that they would prefer a two-pronged approach, with **broader definitions initially to scale up the market, followed by a progressive tightening** as the market becomes larger.

Large respondents seem to prefer broader definitions compared to small investors, perhaps because they are more likely to have in-house screening criteria and green assessments, relying less on external definitions. Their apparent preference for broader definitions may thus reflect the desire not to lose opportunities that they can screen out anyway. This is based on a division of the answers by terciles determined by respondent size. Looking instead at the weighted average of answers, it is tilted towards stricter definitions compared to the simple average.

There is a marked difference between UK and Central European respondents. Most Central European respondents (61%) prefer a strict definition of green, while the same percentage from the UK are in favour of a broader definition of green.

“We support clear and consistent definitions to safeguard the integrity of the market and look for a dialogue with all stakeholders to further grow the market.”

Willem Hettinger - Senior Responsible Investment Specialist, APG

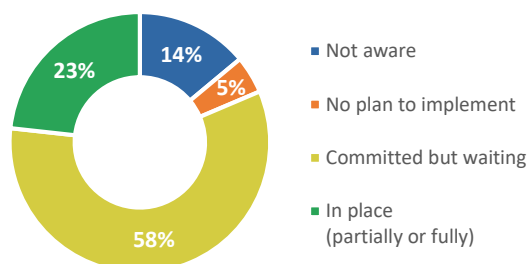
Implementation of TCFD recommendations

The Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD) is a market-driven initiative, set up to develop recommendations for voluntary and consistent climate-related financial risk disclosure in mainstream company filings.

Companies benefit from guidance in providing information to investors, lenders, insurers, and other stakeholders. The funding side benefits from increased, if not yet consistent, disclosure.

Respondents were asked to describe their commitment to implementing the recommendations of the TCFD.

Over 80% of respondents either will or have already implemented TCFD



Commitment and implementation

- 58% of respondents are committed to implementing but waiting for further guidance or regulation.
- A quarter have it in place for some or all of their portfolios.

Differences by asset manager size

- Large respondents are more likely to be implementing TCFD (at least partially).
- Smaller respondents are more likely than large ones to have it in place for all portfolios.

Differences by region

- Implementation is already in place (at least partially) in the Benelux (50%), Central Europe (12.5%) and UK (9%). One possible reason is that respondents from some regions are likely to be more involved in TCFD discussions than others.
- All respondents from Nordic countries are committed but waiting for guidance.

- In France, Article 173 of the Energy Transition Law already requires carbon disclosure for listed companies, banks and institutional investors. It could be used to develop a roadmap for mandatory disclosure requirements elsewhere.

The current focus of the Network for Greening the Financial System (NGFS) is also on improving disclosure and standardising scenarios for climate risk. Central bank members of NGFS are committed to defining and promoting the implementation of best practices including the TCFD recommendations.

TCFD is not a game-changer for green bonds

One third of respondents believe TCFD will result in more demand, one third that it won't, and one third refrained from answering this question.

Most respondents do not believe that TCFD will directly influence their investment decision-making, while an increase in supply would. The clear added value of green bonds is the transparency of assets – this is in line with TCFD – and could potentially indirectly affect demand and supply of green bonds.

Respondents with higher relative holdings in green bonds are considerably more likely to buy more green bonds under TCFD recommendations than respondents with relatively low holdings in green bonds (88% vs 43%).

Policy is the main driver – and its lack the main obstacle – for the green bond market

Respondents were asked to describe the main drivers and obstacles to the development and scale of the green bond market, often giving more than one answer for each. Summary results are presented on the following two pages.

Given the breadth of drivers and obstacles, they have been grouped into three categories: **Policy**, **Issuers**, and **Investors**. This is based on which key stakeholder would primarily be responsible for addressing each issue. The grouping is not always clear-cut and was done on a best-efforts basis.

Policy is the main consideration, with most drivers and barriers falling into this category. This emphasises that policy is crucial in implementing the drivers as well as addressing the obstacles to the development of the green bond market. This suggests that while the growth of the market to date has been a collaborative effort involving issuers, investors, and policymakers, it is policy initiatives that are expected to accelerate the scale of the market.

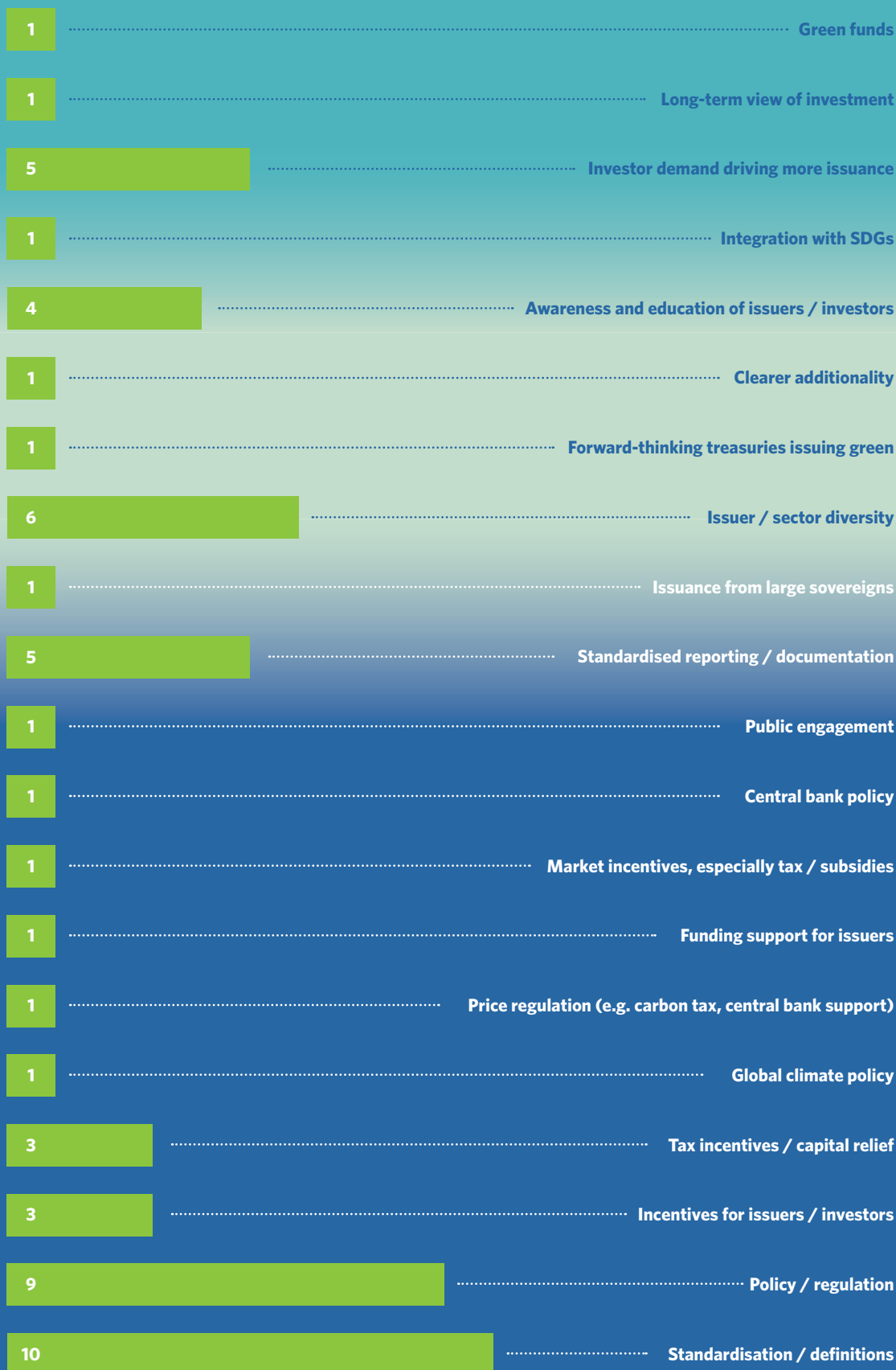
The next most common group is issuers. However, this group is more prevalent among the obstacles, suggesting that these are often “experienced” by issuers, but it is via policy that they will be supported or solved.

There may be some bias in the groupings given that this is a survey of investors and one of the categories is investors. Whilst this may be true, as investors would likely point towards “failings” of other categories than of themselves, it remains valid because considerably more respondents pointed towards a lack of policy rather than problems among green bond issuers, and even these can often be traced to a lack of adequate policy.

It is interesting that policy measures were so often highlighted as crucial, suggesting the public sector is vital for the capital markets to address climate change adequately and at scale.

In any case, CBI intends to conduct surveys with other stakeholder groups in the future, such as issuers, and this question will be put to those groups as well.

Drivers linked to standardisation, coherent policy and issuer diversity emerge as the key drivers for scale...



Investors



Issuers



Policy

Frequency

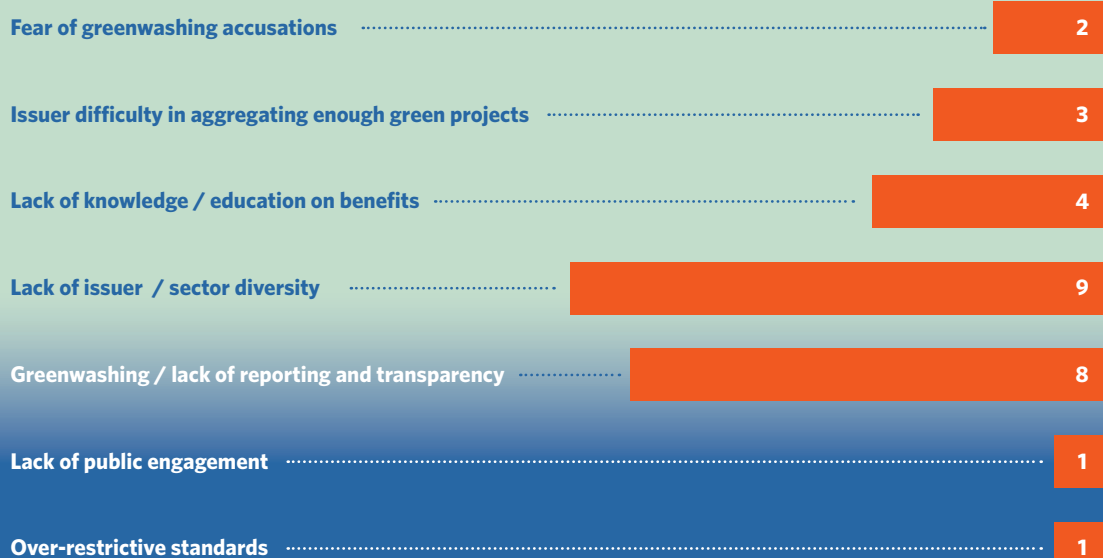
...whilst lack of standardisation, issuer diversity and transparency are the main obstacles



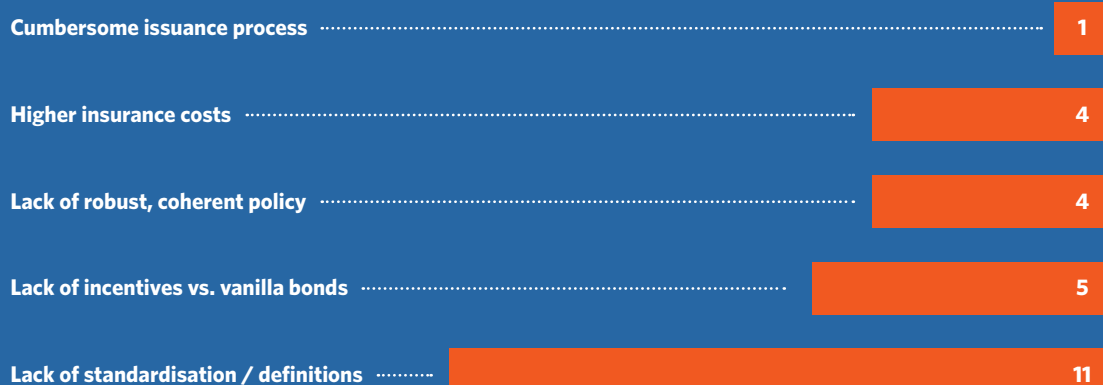
Investors



Issuers



Policy



Frequency

Emerging markets

Participation

Growing populations and increased urbanisation mean that many EM will require large scale investments in infrastructure. This infrastructure needs to be low-carbon and climate-resilient to combat the risks associated with extreme weather events. Green bonds provide a vehicle for large scale public and private sector funding and, for those countries with direct access to capital markets, can attract new participants from the international investment community. Aggregation could also extend green bonds to encompass smaller scale projects.

Outstanding EM green bonds, as of 30 April 2019, amount to USD114bn, or around 20% of the green bond market. Meanwhile, EM currently contribute 63% to global GHG emissions.¹⁹ It is thus critical to determine how investors can support the expansion of EM green bonds.

Respondents were asked to describe their appetite for EM green bonds and to outline what they could be receptive to buying.

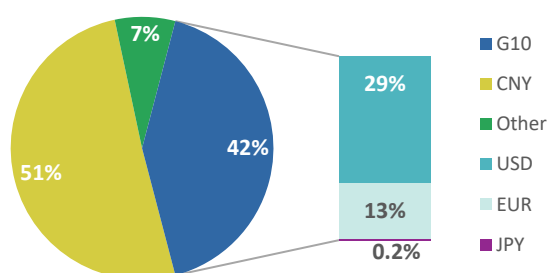
Most respondents (82%) can buy EM debt. Nordic respondents have the lowest participation by region at two out of five.

Exposure limits at country and issuer level tend to apply more to respondents that have a greater degree of integration of green bonds. However, the most common restrictions are credit rating (69%), currency (65%) and deal size (58%).

The preference is for G10 currencies

Limited opportunities in EM green bonds are further narrowed down after accounting for currency restrictions. Among the 65% of respondents that highlighted currency as a restriction, many said they were limited to USD and EUR, G7, or G10, i.e. cannot combine currency risk and asset risk. As of 30 April 2019, there was USD48bn outstanding of EM green bonds, or 42%, in G10 currencies, predominantly in USD (29% of the total).

Most EM green bonds are not issued in G10 currencies



Most respondents can and would like to buy EM green bonds, so issuers must consider how these requirements can be reconciled. Respondents told us that they would like to increase their holdings in EM sovereigns. Thus far, 81% of green sovereign bonds (by USD outstanding) have come from DM issuers.

Many EM sovereigns, particularly in Latin America, have an established presence in the Brady bond market and a history of issuing in EUR or USD. This could be extended to include green bonds. Countries such as Poland (3 bonds in EUR), Indonesia (2 bonds in USD), Seychelles (USD) and Lithuania (EUR) have issued green bonds and met with a positive reception from investors. Chile's USD and EUR deals came out in June-July, after the cut-off.

Preferred mechanisms to scale up EM issuance

Respondents were asked to rank factors that could make investing in EM green bonds more attractive and bring scale to the market.

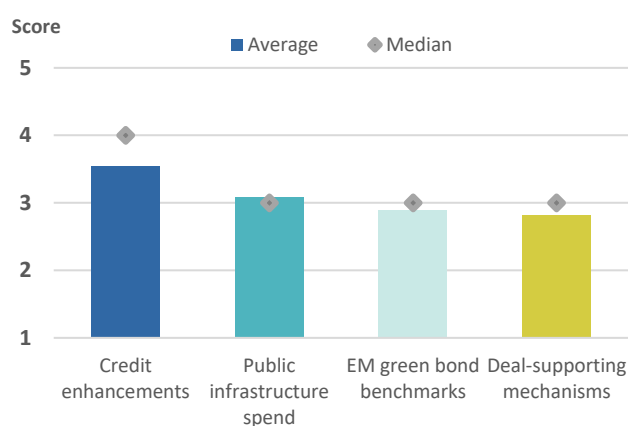
Credit enhancements available from multilaterals and/or public sector entities was the most frequently selected option, with more than half considering it important or very important.

Respondents regarded public spending infrastructure programmes, benchmarks for EM green bonds and deal-supporting mechanisms as less important.

Strong local currencies that are not used as a primary source of funding in EM might be an obstacle to local investors.

Respondents from the Nordics and the UK are the most constrained when investing in EM (40%, respectively 75%).

Credit enhancements stand out as the most effective tool to drive EM investment



Green bond integrity in EM

Three quarters of respondents able to buy EM green bonds treat EM differently from DM, stating that they require more evidence of integrity to invest in green bonds from EM.

Respondents were then asked which features would give them more confidence to invest in EM green bonds, regardless of whether they treat EM the same as DM. The fact that they named features does not mean they treat the two regions differently. Factors were split into three groups, with some overlaps:

- Transparency:** e.g. adherence to GBP, reporting UoP
- Reliability:** e.g. external reviews (SPO, audit, certification, etc)
- Risk:** e.g. insurance/CDS/guarantees, size of issue, currency

Features linked to transparency were the most common (65%), followed by reliability (48%) and finally risk (25%). Seven respondents (18%), all of which treat EM same as DM, did not mention any specific factors.

"More transparency around use and management of proceeds through standardised documentation, second party opinions, and certification would give us greater comfort when buying green bonds from EM."

Ronald van Steenweghen – Senior Fixed Income Fund Manager, Degroof Petercam Asset Management

More on...

The green halo

A quarter of respondents would be more inclined to invest in a vanilla bond issued by a green bond issuer. Although 72% of respondents would not change their propensity to invest in a green bond issuer's vanilla bonds, the fact that some investors would, points to the existence of a "green halo".²⁰ This suggests that issuing green bonds enhances the performance of the yield curve and is supportive of further issuance of green bonds.

The larger the respondent, the more inclined it would be to buy vanilla bonds from green bond issuers. The same is true for respondents whose investments include a greater proportion of green bonds.

The results regarding larger respondents might be influenced by their potential to buy more (larger ticket sizes and more bonds from an issuer), i.e. there may be some correlation with that factor. To some extent, this possible bias is enhanced by the fact that smaller respondents are more likely to be boutique and targeted ESG/responsible investors (and to hold a greater share of green bonds in their portfolios). Both of these factors would make smaller respondents less likely to invest in vanilla bonds a priori.

Private placements

Three quarters of respondents do not invest in private placements. 68% percent of these refrain because of size and liquidity concerns, 18% for lack of resources (to identify and evaluate deals) and 9% because their mandate forbids it.

This suggests that while private placements can fulfil a niche role in the green bond market, particularly when multilateral development banks support the emergence of EM local issuers, this will not be the source of the scale required to make the necessary impact.

Green bond private placements to date have largely been used in EM as a market development tool by multilateral development banks. Specifically, their preference has been to support green bond issuance by local banks, so that these have the resources and frameworks to fund the local real economy via loans.

Other types of ethical / SRI bonds

Two thirds of respondents have only bought green bonds, while a third of those surveyed have also bought other forms of "ethical bonds" or socially responsible investments, most of which are categorised as sustainability bonds (80%). Given that sustainability bonds generally include a substantial allocation to climate projects alongside allocations to social projects, this suggests investors may be looking beyond the green label to find ways to deploy funds for climate solutions. Or they are interested in combining climate and social outcomes.

The emergence and expansion of the sustainability / SDG / ESG debt market – as well as of social bonds – in recent years supports this finding. This includes both loans and bonds which identify eligible investment categories and those that link terms with achieving key sustainability performance indicators, such as improving corporate sustainability scores.

Market evolution: interest rate changes

Over half the respondents believe that a rising interest rate scenario would not affect their demand for green bonds. A quarter did not have a stance.

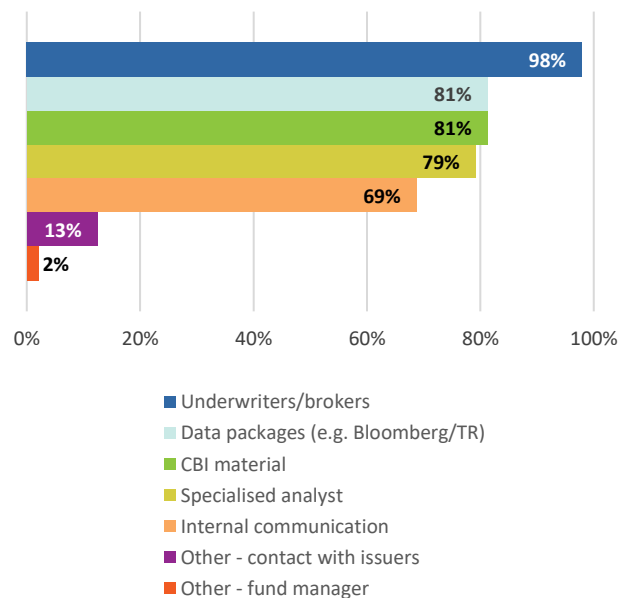
While considerations like the average duration of green bonds versus vanilla could impact a decision, only 4% believe their appetite would decrease. More than three times that number (15%) believe the opposite, i.e. that rising interest rates would increase their appetite for green bonds.

Channels for green bond information

Syndicate desks play an important role as marketers of green bonds: only one respondent does not receive market intelligence from underwriters or brokers.

We asked respondents how they stay abreast of climate finance news and keep track of the green bond market. More than half of the respondents use all listed information platforms. Not surprisingly, large respondents tend to use more sources.

One in eight respondents cited contact with issuers. It would be interesting to see if this share increases over time, given that several respondents also said that green bonds have opened up greater engagement with issuers on their sustainability strategies and policies, and that they would contact issuers if post-issuance disclosure was lacking in some respect.



Conclusions

The survey's results describe a market lacking adequate supply of green bonds given the level of demand from investors.

The need

At least USD2.3tn of additional capital per year is required to fund the mitigation and adaptation necessary to meet climate change targets, according to the IEA. For green bonds to contribute to this, they must appeal to specialist and mainstream investors alike.

The current state of play

Respondents appear to be supportive, and have the necessary resources, capital, and ambition to address climate change challenges through investments.

Green credentials are important. Results demonstrate that respondents are not particular about the precise UoP that bonds are funding, because the choice is currently so limited. However, they do regard green credentials highly and believe standardising terminology and disclosure can help market growth. This is evident by respondents' statements that they would overwhelmingly not buy a bond with unclear green credentials at issuance, and that the majority would sell a bond with poor post-issuance reporting.

Investors want to see more issuance from high-emission sectors. Respondents have preferences for certain economic sectors. Issuers in those sectors can bring bonds with UoP in the areas where the deployment of capital is most needed to

lower GHG emissions, most notably the relatively under-funded **Industrials, Materials** and **Land use** sectors.

Sovereigns could play a pivotal role in redistributing proceeds towards polluting but under-represented sectors, especially by devising and implementing policies that incentivise sustainability. They can also issue green and blue bonds to fund conservation, adaptation and resilience measures, and promulgating sustainable use of land and marine resources.

Most respondents can buy **EM green bonds**, but supply is particularly sparse, and investors have currency and deal size restrictions which can limit their options further. EM sovereigns and financial institutions could issue green bonds in G10 currencies to contribute to GHG emission reduction and lead by example.

Stakeholder positions and considerations for scaling up

Investors have no reason not to buy green bonds, so even those without dedicated funds can and are willing to be involved, often preferring green bonds where possible. Investors should continue to dedicate capital to bonds supporting climate change mitigation and adaptation.

Issuers need to come to the market in all sectors, and with all types of UoP, but applying integrity and transparency to their efforts. Our upcoming issuer survey will aim to explore barriers and restrictions applicable to this community.

Historically, reverse inquiry has been common practice for investors wanting an issuer to bring bonds on a certain part of the yield curve or with particular features, and issuers can be responsive. Investors could exert pressure on issuers with which they have existing relationships, to encourage them to come to market with a green bond, or more green bonds.

Policy mechanisms such as standardisation of green bond definitions, consistency of reporting, and differentiated capital treatment of low- vs. high- carbon assets, are identified as factors that especially need to be addressed. Disclosure – pre- and post-issuance, of both allocations and environmental impacts – is highly valued.

The results of the survey revealed a **preference for tax incentives** within the investor community. At present, only Malaysia has developed tax incentives for green bond issuers and investors.

Respondents said they would like to buy more sovereign green bonds. More sovereigns could issue green bonds to signal support for the market. Sovereign bonds demonstrate that governments are committed to supporting the green bond market by providing opportunities for scale at relatively low yields.

Implementing the recommendations of bodies such as the TCFD, TEG and NGFS into public policy has the potential to unite issuers and investors in the green bond space and scale up the market.

Sectors of focus for green bonds

More green bonds are needed in all areas of the market. Comparing GHG emissions with respondent preference and available green bonds highlights the sectors in which issuance is particularly lacking given investor demand:

- **Energy/Utilities** is the UoP category which has received the most funding through green bonds (50%), mainly via Utilities. It is also the sector with the largest contribution to GHG emissions and is most in demand from respondents. Therefore, Utilities issuers should continue to bring green bonds to market at scale and Energy issuers should consider how they can transition their business models to low carbon alternatives, particularly renewables.
- **Industrials**, mainly Industry, has a large gap between GHG emissions and available green bonds. Respondents highlighted this as a key area in which they would like to buy more green bonds. Green bond issuance needs to scale up in the Industrials sector.
- More issuance is needed from the **Consumer Discretionary** (mainly automotive) sector to address both GHG emissions and respondent demand.
- The **Materials** sector, including Metals and Mining, is a large contributor to GHG emissions. There has been no green bond issuance from Metals and Mining to date and there are no defined transition trajectories. Many respondents expressed demand for more bonds in this area.
- **Consumer Staples**, mainly Agriculture, is under-funded by green bonds in comparison to GHG emissions. However, relatively few investors highlighted this sector as one where they would like to buy more green bonds. Therefore, greening this sector could perhaps more effectively be achieved through targeted government policy/support (which could include public sector issuance, e.g. via green sovereign bonds) as well as other (non-debt) types of financing.

Green bonds send a strong signal to the market that an organisation is committed to a 2-degree future or better.

Appendix 1: Methodology

Survey respondents

Representatives from the largest Europe-based fixed income managers were invited to participate in the survey. Crucially, no distinction was made between those with an established reputation as green bond investors, and those not yet involved in the market.

92 organisations were contacted (sometimes repeatedly, and through a variety of channels).

- **44 participated in the full survey;**
- **4 fully or partially completed the questionnaire** but did not commit to a discussion;
- **18 replied and declined to participate;** and
- **26 did not reply.**

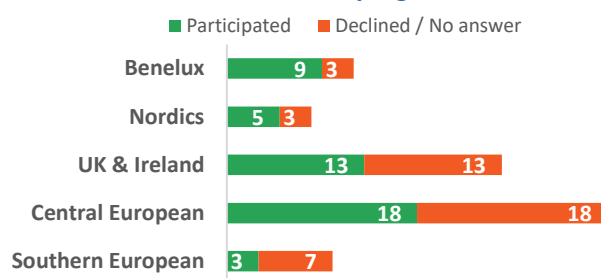
Research conducted by Influence Map found that the world's 15 largest investment management firms "have increased their holdings of thermal coal reserves in their funds by more than 20% since the Paris Agreement". Four of the five with most holdings (with a 70% average increase), participated in this survey.²¹

The overall response rate is 45%. The total AuM of respondents is EUR13.7tn, with an average of EUR285bn and median of EUR149bn. The total fixed income AuM of respondents is EUR4.3tn, with an average of EUR90bn and median of EUR34bn.

Response rates differed by region. Over 60% of the investors we approached in the Benelux and Nordic countries participated. Among Central European and UK & Ireland investors half of the invited responded, while less than one third of Southern European investors took part in the survey.

Among the Southern European investors that failed to respond were five Spanish investors, meaning that this constituency has no representation in the results. Some large US asset managers with European presence were among those in the UK who did not reply.

Response rate suggests differing commitment by region



Data collection

We conducted pilot surveys in December 2018. The survey was administered between January and April 2019.

Respondents participated in a telephone discussion during which they answered the questionnaire, seen in advance. This was complemented by CBI desk research, to independently explore the profile of respondents.

Data analysis

Data reliability: Cronbach's alpha is a reliability measure for the responses obtained. Overall, Cronbach's alpha value of 0.75 indicates an acceptable level of internal consistency.

Respondents were divided into terciles to denote **small**, **medium**, and **large** investors based on fixed income AuM. These categories are used to describe respondents throughout this paper.

CBI partnered with **Henley Business School** on the statistical analysis of the results. Some results were analysed using weighted averages based on the fixed income AuM of respondents.²²

Green bond data

The cut-off date for green bond data is end of April 2019. However, where appropriate, subsequent deals are mentioned (e.g. for sovereign green bond issuance).

Appendix 2: Participants in the survey

The following organisations have agreed to be named for their kind participation in the survey:

Aberdeen Standard Investments	Erste Asset Management (Spar Invest)	OP Cooperative
Achmea Investment Management	Eurizon Asset Management	PGGM
Actiam	Fidelity International	Pimco
Aegon Asset Management	Foresight	Raiffeisen Capital Management
Affirmative Investment Management	Franklin Templeton Investments	Robeco
Allianz Global Investors	HSBC Global Asset Management	SEB
Amundi	Julius Baer Asset Management	Storebrand Asset Managers
Anima SGR	Jupiter Asset Management	Swedbank
APG	Kempen Capital Management	Swiss Life Asset Management
AXA Investment Managers	La Banque Postale Asset Management	Swisscanto Invest
BlueBay Asset Management	Legal & General Investment Management	TKP Investments
BNP Asset Management	Liontrust Asset Management	UBS Wealth Management
Credit Suisse Asset Management	Lyxor Asset Management	Union Bancaire Privée
Danske Bank Asset Management	Mirova	UBP SA
Degroof Petercam Asset Management	Newton Investment Management	Union Investment
Ecofi Investissements	NN Investment Partners	Vontobel Asset Management

Appendix 3: Headline survey questions



Investment Policy Overview

1. To what extent have green bonds impacted your investment decisions?
2. What % of your fixed income AuM is currently invested in green bonds?

Market Dynamics for current and potential green bond investments

3. What sectors do the bonds you have invested in / intend to invest in finance?
4. What are your preferred channels for green fixed income investments?
5. If you invest or intend to invest in green bonds, how important are the following factors in making an investment decision?
6. Rank the following issues that could make investing in green bonds more attractive: *(multiple choice options)*
7. Would you be more inclined to buy a vanilla bond from an organisation that has issued a green bond, over a vanilla bond from an organisation that hasn't?
8. Would you buy a green bond if it was not clear that proceeds were going to be allocated to green projects?
9. Would you sell a green bond if post-issuance green bond reporting is poor?
10. Rank the asset classes in which would you like to buy more green bonds: *(multiple choice options)*
11. Please name the three non-financial corporate sectors you would most like to buy green bonds in:

Standards and developments

12. Rank the main market tools and mechanisms that in your opinion could be developed or leveraged to support investment in green bonds: *(multiple choice options)*
13. Rank the main policy mechanisms that would enable you to invest, or increase your investment in green bonds: *(multiple choice options)*
14. What is your approach to the recommendations of the Task Force on Climate Related Financial Disclosures (TCFD)?
15. If implementation of the TCFD recommendations is planned or in place do you envisage that you will buy more green bonds as a result?
16. In terms of strictness of definitions, would you prefer: *(multiple choice options)*
17. In your opinion, what is the main driver that will enhance growth and scale of the green bond market?
18. What is the main obstacle?

Market Intelligence

19. How do you keep abreast of opportunities in the green bond market?

Emerging markets

20. Are you able to buy EM debt?
21. What is your credit rating floor for doing so?
22. What other EM investment restrictions do you have?
23. What could drive your investment in EM markets?
24. Which green bond features would give you more confidence in investing in EM via the green bond format (for example certification, trackable use of proceeds etc)?

Private Placements

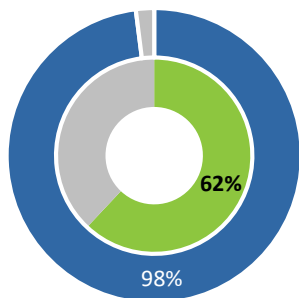
25. Do you invest in private placements?
 - a) Could you describe your private placement investments terms of: currencies, size, tenor, sectors?
 - b) If not, what prevents you from investing?
 - c) If yes, what other factors would increase your exposure to private placements?

Market evolution

26. How could rising interest rates alter your appetite for green bonds?
27. Have you bought any other types of ethical bond?
28. If yes, briefly describe how you categorise these instruments: *(multiple choice options)*

Appendix 4: Profile of survey respondents

Green bond investing is among the more sophisticated ways to express a commitment to a responsible investment strategy. Responsible investment, which addresses environmental and social aspects, is part of the broader universe of Environmental, Social & Governance (ESG) investments. It is now more pervasive than ever, and investors of all types are keen to disclose their involvement on public platforms. CBI desk research indicates that respondents are embracing responsible investment practises and that this is being openly communicated. This section is intended to provide more context around the responsible investment practices and transparency of responding investors.

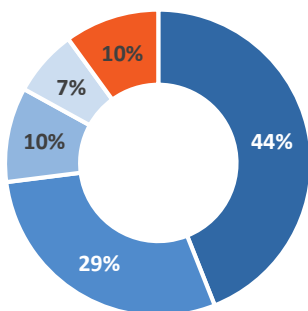


Basic commitments

98% of survey respondents are signatories of the Principles for Responsible Investment (PRI) and **62%** of the Carbon Disclosure Project (CDP). Only one respondent had not signed up to either PRI or CDP disclosure.

Signing the PRI allows organisations to publicly demonstrate their commitment to responsible investment and is regarded as the starting point for a responsible investment strategy which can include green bonds. The Carbon Disclosure Project invites companies to provide environmental information to enable stakeholders to monitor ambition and action.

Finding: Respondents are committed to international practices. UNPRI is the baseline.



Prominence of ESG on website

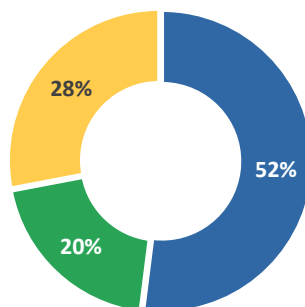
An ESG policy is one way of expressing such a strategy. We searched respondents' websites for ESG, responsible investment, impact investing, or other related topics.

44% displayed the information on their homepage, suggesting they assign a higher level of importance to responsible investment, and/or being associated with it.

29% required one click, **10%** two clicks, and **7%** three clicks or more.

10% of respondents had no such information on their website.

Finding: The majority of respondents publicly disclose their ESG commitments.

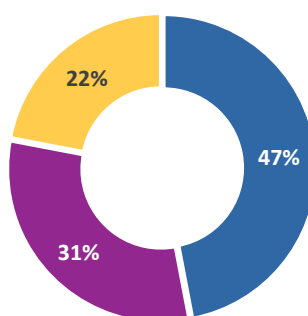


Mention of green bonds on website

If a company specifically mentions green bonds on their web site, this suggests that they are actively engaged with green bonds. Word searches were used on respondents' publications and websites: 17% of respondents are affiliated with a bank which has issued at least one green bond.

52% not only mention it but also publicly say they invest, **20%** mention it, and **28%** do not have any information available.

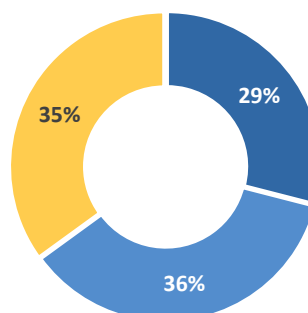
Finding: Integration of green bonds in responsible/ESG investment strategies is varied.



ESG criteria/methodology

ESG integration can be interpreted in many ways, from simple exclusion (and ESG screening) to integration of forward-looking relative ESG scores. Mention of impact investments, which can include green bonds, also implies a strong commitment to responsible investment. **31%** of respondents look at relative ESG scores, **47%** apply ESG screening criteria that lead to exclusions (primarily of weapons and tobacco, and, to a lesser degree, coal and nuclear energy), while **22%** of respondents did not provide an easily accessible description of their ESG approach to investments. Separately, 37% of our investor sample include impact investments in their equity and/or fixed income investment strategy.

Finding: The application of ESG considerations in a fixed income context differs widely, but a minority of respondents do not incorporate it into their investment strategy.



GHG foot-printing

Public disclosure of greenhouse gas (GHG) emissions at company level is mandatory in some countries, including the UK. This enables companies to define a baseline from which to make improvements. **65%** of respondents publicly report their GHG emissions (which may include disclosure of CO₂ only), either in a sustainability report, annual report, or press release. Among these, **29%** extended the foot-printing to their investments, although this tended to apply only to equity investments, while **36%** did not. GHG disclosure for the remaining **35%** of respondents could not be found.

Finding: Internal foot-printing is common. Portfolio foot-printing, particularly for fixed income investments, has yet to be widely adopted, but this is a recommendation of the TCFD and could become common practice.

Appendix 5: Top 5 sectors of interest to investors

Sector (BICS)	Issuer Name	Ticker	Total bonds	Green bonds	Amt. out. (USDbn)	Average term (y)	Sub-group	
Industrials (USD2.5tn)	SNCF Reseau	RESFER	91	7	61.8	17.69	Transportation & Logistics	
	General Electric Co.	GE	381	0	58.2	8.51	Electrical Equipment Manufacturing	
	United Tech. Corp.	UTX	39	0	37.2	8.34	Aerospace & Defence	
	John Deere Capital Corp.	DE	95	0	36.8	3.54	Machinery Manufacturing	
	Siemens Fin. Serv.	SIEGR	33	0	34.3	8.23	Electrical Equipment Manufacturing	
Energy & Utilities (USD 4.1tn)	Utilities (USD2.2tn)	Électricité de France SA	EDF	56	5	72.0	16.05	Power Generation
		Duke Energy Corp.	DUK	132	3	48.2	11.72	Utilities
		State Grid Corp. of China (PRC)	CHGRID	57	2	46.1	4.68	Utilities
		Enel SpA	ENELIM	59	3	44.7	14.17	Utilities
		The Southern Co.	SO	89	6	33.5	13.07	Utilities
	Energy (USD 1.9tn)	Petróleos Mexicanos	PEMEX	101	0	85.9	4.75	Integrated Oils
		BP plc	BPLN	81	0	59.6	4.54	Integrated Oils
		Rosneftgaz AO (Russian Federation)	ROSNRM	50	0	54.4	8.34	Integrated Oils
		China National Petroleum Corp. (PRC)	CNPCCH	39	0	53.4	3.59	Exploration & Production
		Royal Dutch Shell PLC	RDSALN	36	0	47.6	8.34	Integrated Oils
Consumer Discretionary (USD 2.3tn)	China State Railway Group Co. (PRC)	MIRAIL	160	0	254.5	7.57	Travel & Lodging	
	Volkswagen AG	VW	138	2	96.2	3.48	Automobiles Manufacturing	
	Daimler AG	DAIGR	214	0	94.3	2.52	Automobiles Manufacturing	
	Toyota Motor Corp.	TOYOTA	408	5	89.4	3.02	Automobiles Manufacturing	
	Ford Motor Co.	F	368	0	80.0	3.47	Automobiles Manufacturing	
Materials (USD 1.2tn)	Glencore	GLENLN	34	0	23.4	5.59	Metals & Mining	
	BHP Billiton	BHP	24	0	21.5	18.42	Metals & Mining	
	China National Chemical Corp. (PRC)	HAOHUA	35	0	20.2	3.63	Chemicals	
	BASF	BASGR	37	0	19.2	8.34	Chemicals	
	3M Co.	MMM	31	0	16.7	10.55	Chemicals	

Note: The table lists the top five bond issuers (by ticker) in the top five BICS sectors that respondents stated they would like to buy more green bonds from. It is intended as a scoping exercise. Amount outstanding refers to total bonds. Data correct as of 7 October 2019.

Use of proceeds (for green bonds denoted above):

SNCF Reseau: Low carbon transport, rail energy efficiency and protection of natural resources and biodiversity

Électricité de France: Renewable energy power assets in wind, solar and biogas, hydro

Duke Energy Corp.: 1. the development, construction, acquisition and operation of solar energy projects; 2. power purchase agreements for the procurement of solar energy; 3. rebates for rooftop solar power installations; 4. solar energy storage

State Grid Corp. of China: Renewable energy

Enel SpA: Renewables, smart grid technology, sustainable mobility, smart lighting, energy efficiency, and demand response initiatives

The Southern Co.: Renewable energy (wind & solar)

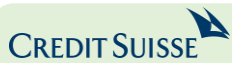
Toyota Motor Credit Co.: Electric & hybrid vehicles, new retail loan and lease contracts from TMCC for Toyota and Lexus vehicle models

Volkswagen AG: Residential buildings

About the sponsors



The **Luxembourg Stock Exchange (LuxSE)** has been engaged in sustainable finance since 2007, when it listed the first ever green bond by the European Investment Bank. In 2016 it launched the Luxembourg Green Exchange (LGX), the world's first platform dedicated to green, social and sustainability financial products. Today, LGX displays over 500 securities from issuers all over the world, accounting for over EUR200bn worth of green, social and sustainable investment. LGX is a global market leader, with a 50% share in listed green, social or sustainability bonds worldwide. The continued advocacy that LGX provides towards the need for reliable and transparent information has also given rise to an additional platform dedicated to ESG, green, and social funds. The continued excellence and expertise of LGX has been acknowledged by many key experts in the field of sustainable finance. The EU Commission selected LuxSE to contribute to the High Level Expert Group (HLEG) and the creation of the Technical Expert Group's (TEG) Green Bond Standard. LGX has also built on its expertise and past success by publishing a hands-on Guide to ESG Reporting. LGX has been named Best Exchange at the Environmental Finance Awards for three consecutive years, and last year was named Green Bond Listing Venue by the Climate Bonds Initiative as part of its Green Bond Pioneer Awards. LGX will continue to develop its services to ride on the forefront of promoting reliability and transparency in sustainable finance markets.



Credit Suisse has extensive experience in impact and sustainable investing and financing, culminating in the establishment of a dedicated Impact Advisory and Finance Department which reports directly to the group CEO. The department's mandate is to cultivate investment opportunities that help close the financing gap towards the UN's Sustainable Development Goals and includes the facilitation of new, at-scale green finance projects and initiatives for the benefit of its wealth management, institutional and corporate clients. Credit Suisse has a strong commitment to drive investment towards projects that promote climate resilience through a broad spectrum of products and services ranging from Green Bonds to thematic funds in addition to providing client advisory and thought leadership content, evidenced by membership of a number of industry leading initiatives including the US Alliance for Sustainable Finance, the IFC Operating Principles for Impact Management and the UN Principles for Responsible Banking.



Lyxor Asset Management Group, wholly-owned directly or indirectly by Société Générale and composed notably of two subsidiaries (Lyxor AM and Lyxor International AM), is a European asset management specialist, an expert in all investment styles, active, passive and alternative. From ETFs to multi-management, with EUR156.7bn under management and advisory, the group creates innovative investment solutions to meet the long-term challenges of managing savings. Thanks to its experts and engineering tradition and research, Lyxor group combines the search for performance and risk management.



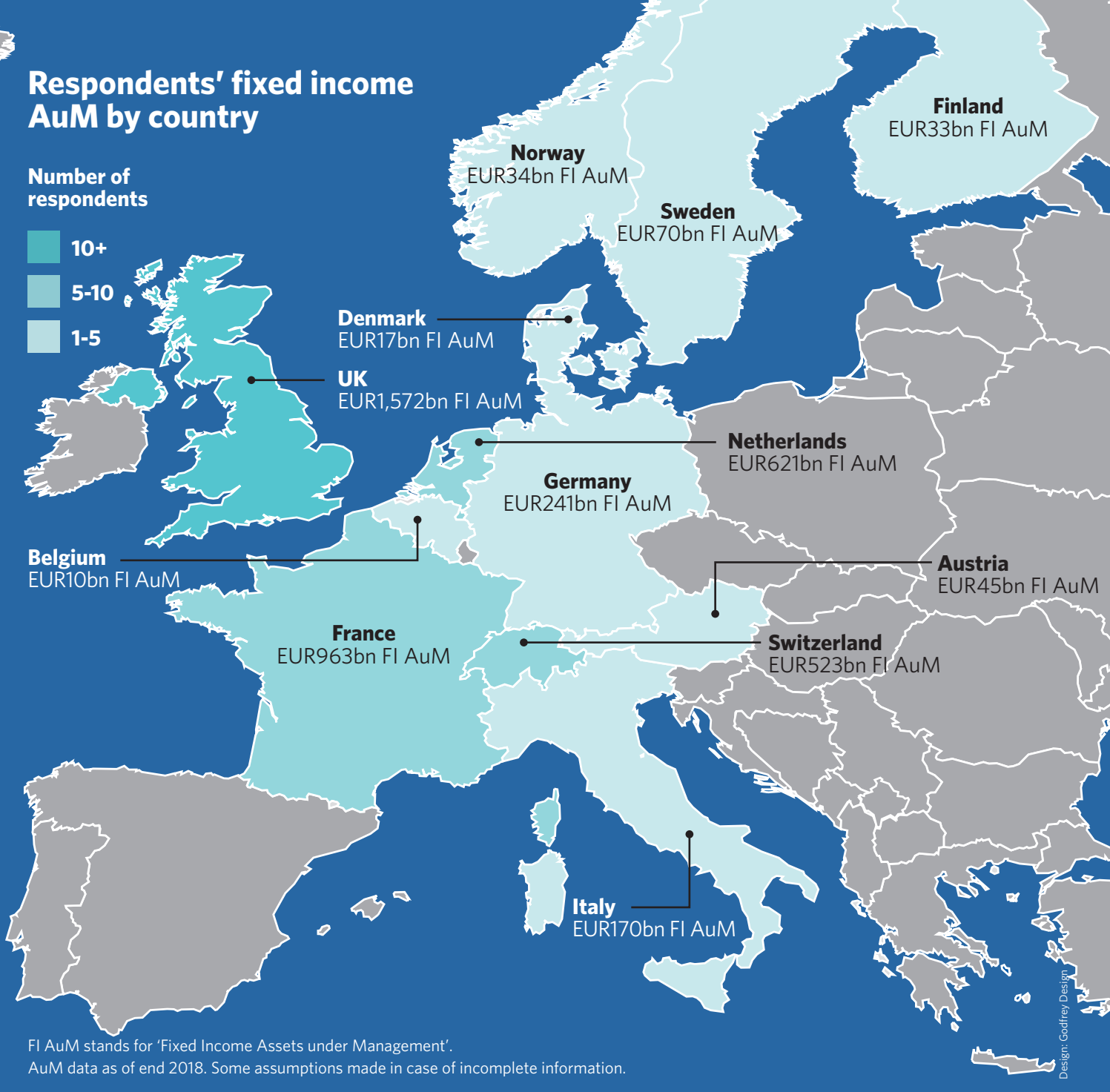
Danske Bank wants to help societies transition to a net zero carbon economy by offering green financing and providing a platform that supports the allocation of capital towards projects with an environmental and/or social benefit. The bank is fully committed to supporting the market for green and sustainability bonds by providing expertise and advice to issuers and investors, and by being an active issuer on the back of its green bond framework. Danske Bank has been a signatory of the Green Bond Principles since 2014 and is the first Nordic partner of the Climate Bonds Initiative. It recognises the importance of international commitments aimed at helping businesses to operate responsibly, and thus among others supports the 2030 Agenda and the UN Sustainable Development Goals, the UN Global Compact, the recommendations of TCFD and the UN Principles for Responsible Banking.

Endnotes

1. Climate Bonds Taxonomy.
2. Climate Bonds Sector Criteria.
3. For the former, the results are based on the raw answers, which could, and often did, cover multiple options (e.g. prefer green bonds where available and competitively priced but also have a mandate or green bond fund), hence why the sum is greater than 100%. For green bond holdings, the share was left blank for the five respondents for which a data point could not be obtained.
4. With a USD100tn global bond market and USD569bn of green bonds as of April 2019, green bonds contribute just over 0.5% to the total market size.
5. Based on research for the *Bonds and Climate Change, The State of the Market 2019* report, due to be released soon. USD518bn from fully-aligned issuers plus USD341bn from strongly-aligned.
6. Global Industry Classification Standard.
7. Bloomberg Industry Classification Standard.
8. Global emissions data from C2ES (2013). Data from Europa (2014) used to split transport emissions into Consumer Discretionary and Industrials.
9. The Energy and Utilities GICS sectors were combined as respondents often used them interchangeably and it is difficult to separate the emissions of the two. GICS sectors Information Technology and Communication Services were combined into a single ICT sector. Six respondents listed Consumer Goods as a sector, which was split evenly between Consumer Discretionary and Consumer Staples. In terms of emissions, data from C2ES was reconciled with GICS sectors since emissions data exactly matching GICS was not available. The following assumptions were made: 50% of emissions from manufacturing/construction assumed to fall under Industrials and 50% in Real Estate; using Europa data, 73% of emissions from transportation assumed to fall under Consumer Discretionary (road emissions) and 27% under Consumer Staples (other transport); all of Land use/forestry assumed to fall under Materials (due to paper/forestry and metals/mining), whilst emissions from agriculture were classified under Consumer Staples (i.e. as food); ICT and Healthcare emissions each assumed as 1% of total given lack of data.
10. Whilst most respondents were able to list three sectors, two gave only one or two. In addition, two expressed "no preference", another two answered "sectors in low supply", and one listed Adaptation as a sector – all of these were excluded from the analysis below (the latter because it could not be reconciled with the sectors).
11. Data from Climate Watch (2014). It matches C2ES data for previous chart but with some categories aggregated.
12. Both the emissions and green bond issuance data had to be adjusted in order to compare the same sector categories, which differ from the previous chart since emissions are now being compared with green bond issuance (UoP categories) rather than investor demand (GICS sectors).
In terms of emissions data: 50% of manufacturing/construction assumed to fall under Industry and 50% in Buildings (same as in previous chart); 67% of Land use emissions assumed to fall under Industry (as chemicals and metals/mining) and 33% under Land use (as paper/forestry).
- In terms of green bond UoP categories, Energy was combined with Water into a single Energy/Utilities category, Industry was combined with ICT into a single Industry category, and Adaptation was excluded as it does not fall under a specific category and does not contribute to GHG emissions.
13. The issuance share of each sector category was subtracted from its emissions share, with the resulting percentage point difference shown in the chart. It indicates the need for green bond issuance relative to other sector categories, given the level of emissions. A shortfall of issuance is thus shown as a positive value, whereas an excess is negative.
14. CBI, *Post-issuance reporting in the green bond market*, 2019.
15. Both of these were asked as a binary "Yes"/"No" question, but some respondents answered "Maybe" with an explanation – this option is expressed as Less/More likely in the two charts.
16. Integrated credit ratings are credit ratings that integrate ESG risks, providing a more holistic and accurate assessment of issuers' risks.
17. IDB, *IDB and UK Announce Partnership to Support Green Finance Growth*, October 2019.
18. CBI, Green Bond Policy Data Set.
19. Center for Global Development, *Developing Countries Are Responsible for 63 Percent of Current Carbon Emissions*, 2015.
20. NatWest Markets, *Green Halo 2.0*, 2019.
21. Influence Map, *Who Owns the World's Fossil Fuels*.
22. In the few cases where a figure for fixed income AuM could not be obtained, an assumption of 50% of total AuM was applied.

Respondents' fixed income AuM by country

Number of respondents



FI AuM stands for 'Fixed Income Assets under Management'.
AuM data as of end 2018. Some assumptions made in case of incomplete information.

Design: Godfrey Design

Source data from Refinitiv Eikon, Bloomberg, climatebonds.net and other parties. All figures are rounded.



Suggested citation: Almeida, M., Filkova, M., Harrison, C., and Sette, P. *Green Bond European Investor Survey*, Climate Bonds Initiative, November 2019.
Henley Business School, analysis support: Dr. Ivan Sangiorgi, Dr. Lisa Schopohl



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