



## About this Guide

- CDKN aims to help decision makers in developing countries design and deliver climate compatible development.
- This CDKN Guide aims to support people with interests in achieving environmental goals and commitments, in particular green growth and infrastructure development. It may be of particular interest to finance and planning authorities at national, regional and city level. The guide discusses the key building blocks and enablers for green bond markets, reflecting on what these markets need for success.

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## New markets for green bonds

### A guide to understanding the building blocks and enablers of a green bond market

#### Introduction

This guide has been developed in response to the interest of developing markets in the potential for capital markets to connect institutional private capital with projects that deliver positive environmental impact. Green bonds are a vehicle for doing this.

The guide has been written for those with responsibility and interest in achieving environmental goals and commitments, in particular green growth and infrastructure development. It may therefore be of particular use to environment, finance and planning ministries and related teams in regional and city authorities.

The guide draws on learning from CDKN's project to assess the potential for a successful green bond market in Colombia, and its broader climate finance work in other developing and emerging markets.

The guide discusses the key building blocks and enablers for a green bond market. Though the focus is on green bonds, some of the issues and steps relate to wider capital market development. The guide reflects on what green bond markets need for success, and offers explanation of the key elements required to build them. At the end of each section, a series of questions is asked for your market and, depending on current market attributes and challenges, suggestions are given for the next steps.

Social and development impact bonds are not covered by this guide, though many of the same principles apply.

The guide covers five building blocks:

- the enabling environment (including policies, regulation, taxes, and market infrastructure and institutions)
- investors
- issuers and project pipeline
- governance
- definitions and standards.

**Key terms underlined throughout the Guide are defined in the glossary at the end of the document.**

#### What is the demand?

The Business and Sustainable Development Commission describes at least US\$12 trillion in market opportunities for business from sustainable business models.<sup>1</sup> The United Nations estimates an annual funding gap of \$2.5 trillion is needed for the achievement of the Sustainable Development Goals (SDGs),<sup>2</sup> and within this, US\$1 trillion is needed annually for clean energy alone. A large number and broad range of projects and assets that contribute to achieving the 17 SDGs need this funding for their development and operation.

One of the SDGs where 'green finance' has been successfully mobilised is on clean energy and climate action. The Paris Agreement on climate change entered into force in November 2016, after 196 countries committed to reducing greenhouse gas emissions. Significant quantities of finance are now needed to convert country commitments (Nationally

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Determined Contributions, NDCs) to implementation and a low-carbon, climate-resilient economy.

Despite recent increases in volumes of climate finance, a significant funding gap will arise unless new sources and channels of finance are mobilised.<sup>3</sup> Existing international public finance dedicated to climate change is unable to achieve the rapid change required in meeting the finance gap alone. Furthermore, public sector balance sheets do not have the capacity to fund the amounts needed, and so an estimated 80–90% of funding will need to come from the private sector.<sup>4</sup> Bank balance sheets can take only a proportion of the private finance needed so the capital markets have to be leveraged, along with other sources such as insurance and peer-to-peer.<sup>5</sup>

On the investor side the demand for green bonds has grown quickly with asset owners and managers diversifying their investment portfolios and seeking positive impact beyond financial return. In the light of the global commitment to shift to a green and low-carbon economy, the green bond market has the potential to grow substantially, while attracting more diverse issuers and investors.

### What is a bond?

For consistency in this Guide, we use the definition of a bond as a debt investment in which an investor loans money to an entity (typically corporate or governmental), which borrows the funds for a defined period of time at a variable or fixed interest rate.<sup>6</sup> Bonds are used by companies, municipalities, states and sovereign governments to raise money and to finance a variety of projects and activities. The bond market – also called the debt market, debt capital market or credit market – is a financial market in which participants can issue, buy and trade these debt vehicles.

### What is the benefit?

The growth of bond markets provides increasing opportunities to finance the implementation of the SDGs, climate commitments (NDCs) and other green growth projects. Green bonds are becoming an increasingly prevalent form of green finance, particularly for clean and sustainable infrastructure development and their large funding needs. Green bonds offer a vehicle to both access finance from the capital markets and deliver green impacts that can be verified against standards. In developing countries, green bonds are already financing critical projects, including renewable energy, urban mass transit systems and water distribution.

Green bonds mobilised over \$93 billion in 2016 to projects and assets with positive environmental impacts. At the current growth rate, they could mobilise over \$200 billion in 2017.<sup>7</sup> Of total global bond issuance, however, this is still around just 1%.

A green bond market has three key benefits to a country and its environmental goals and commitments.

- It increases the finance available for green projects, therefore incentivising an increase in their number. Today, green bonds mainly finance projects within renewable energy, energy efficiency, low-carbon transport, sustainable water, and waste and pollution.
- It is a viable vehicle for enabling the increasing pool of sustainable investors to access environmental projects. Bonds are an instrument and an approach with which foreign

investors are familiar, so these institutions need little new understanding or capacity. Investors are also interested in placing money where the environmental impact achieved is highest per unit of currency, and emerging and developing economies have the potential to offer this where lower project costs exist.

- It can be a catalyst for further development of the domestic capital market and financial system more broadly beyond environmentally related projects.

Similarly to financial markets more broadly, a successful green bond market is one that has the following attributes.

- Depth** – sufficient quantity and size of issuance to gain and maintain market interest. Macroeconomic factors can have an impact on investor capacity, such as the level and stability of interest rates and level of investable funds in the economy.
- Breadth** – a variety of issuers across sectors and size, as well as a broad and engaged investor base, including both domestic and international issuance. A variety of investors across rating, price, tenor and sector interests, in particular the domestic institutional investor base.
- Self-sustainability** – a market which is initially supported by the public sector during its inception and growth phases but that eventually can be self-sustaining without ongoing support.
- Longevity** – repeat issuance that sustains a high, and ideally growing, level of outstanding issuance.
- Confidence** – through established ratings agencies and independent reviewers with local knowledge.

In addition for green bond markets, a successful market should also have the following.

- Diversity** – in the use of proceeds across environmental objectives and technologies etc.
- Impact** – truly directing additional capital towards positive environmental impacts.

**So what exactly are green bonds?**

The World Bank definition of a green bond is “a debt security that is issued to raise capital specifically to support climate related or

environmental projects”<sup>8</sup>. Green bonds have the structure of traditional bonds with the use of proceeds exclusively applied to finance or refinance projects that deliver environmental benefits. A thematic green market helps make the link between green economy projects and demand from investors for these types of assets. Under the Green Bond Principles defined by the International Capital Market Association (ICMA), the bond must also align with four core components:<sup>9</sup>

- use of proceeds
- process for project evaluation and selection
- management of proceeds
- reporting.

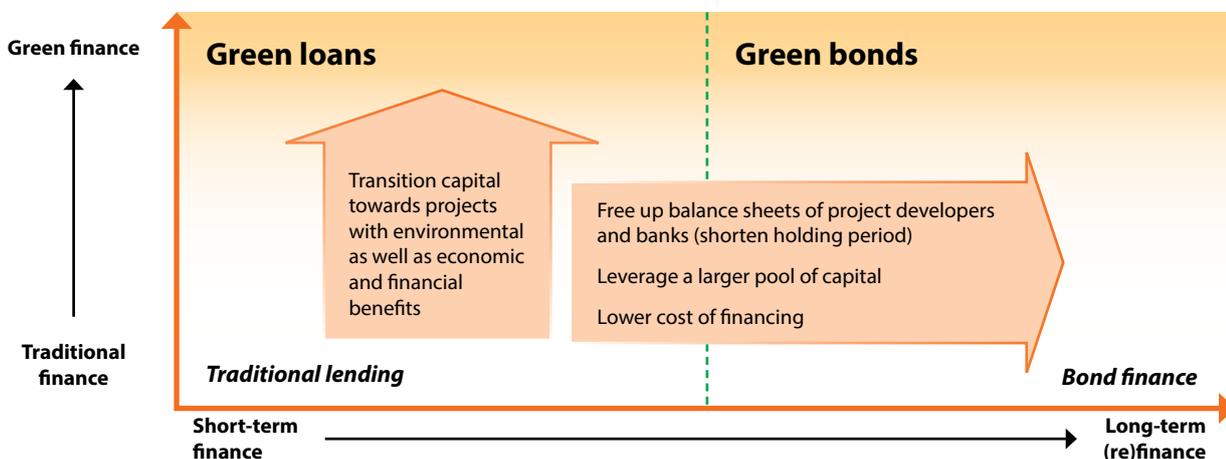
Green bonds are not the single solution for driving finance towards green projects and businesses, but one of a variety of equity, debt and insurance products, each suited to different needs and circumstances. Green bonds come at a particular point of the project finance cycle because, like normal bonds, they are largely issued to refinance existing projects. They come in at operational (rather than construction) phases, for example, where the risks are lower and more suited to this investor base. Compared with a bank loan, bonds typically carry a lower interest rate (reflecting the lower risk), longer tenors and larger size. Figure 1 shows the role of green bonds in the spectrum of green versus traditional and long- versus short-term finance.

A green bond is differentiated from a traditional ‘plain vanilla’ bond by its predetermined use of proceeds, signifying a commitment to use the funds raised to finance or refinance green projects. Climate bonds, where the proceeds are used to finance mitigation or adaptation projects, are a subset of green bonds which as a whole can be used to finance a broader set of projects with environmental impact.

Green bonds that designate themselves as such are referred to as ‘labelled’ green bonds. There are two key minimum criteria that make a bond a labelled green bond:

- the issuer declares the bond as green and predefines the use of proceeds as the financing or refinancing of green projects or assets

**Figure 1: The role of green bonds in a financial system**



- the issuer commits to some level of transparency and reporting on the use of proceeds (and ideally impact) over the life of the bond.
- annual reporting by companies and public sector entities on key environmental indicators
- inclusion of environmental risk in fiduciary duty.

Issuers may wish to go beyond these minimum criteria by following established principles, guidelines and standards to increase the rigour of issuance and its attractiveness to investors. It is also common practice in most markets for green bonds to receive external review, verification or certification.

‘Unlabelled green bonds’ are securities issued by single-purpose (or near single-purpose) green businesses, such as renewable energy producers, where the use of proceeds will naturally lead to positive environmental impact. The term is used only occasionally, however, in indices, and is not commonly used in the market.

## Enabling environment

Ensuring that both bond issuance and bond investment are attractive in the market is key to developing the scale and repetition of issuance. To do this requires unrestrictive and ideally supportive political positions, policies, regulation and tax regimes.

A country can also benefit from the presence of established listing authorities and financial market institutions, in particular development banks, private sector banks and credit rating agencies that have knowledge and experience of bonds, and potentially experience of green bonds in their wider international organisation. This can enable quick transfer of skills into the domestic market at the first signs of an emerging green bond market.

### Supportive policy, regulation and taxes

The presence of supportive policies and the absence of restrictive ones, on both the issuer side and investor side of green bonds, plays a key enabling role in the development of a green bond market. Especially important and effective are environmental policies and regulations that support demand and supply for green projects and assets. These may include:

- environmental standards and enforcement
- environmental licences and permits
- environmental taxes (such as carbon, landfill, emissions and resource-use taxes)

Regarding standards that issuers must conform to, a balance needs to be achieved between ensuring integrity of the market and avoiding long, complex or expensive processes that would deter initial and repeat issuance (see the section on green bond standards on page 11 for more information).

Beyond policies, regulations and taxes specific to the environment, broader national positions may restrict the viability of bond and other financial markets more broadly. These may include, for example, restrictions on the ability of certain issuers, in particular cities and state-owned companies, to issue their own green bonds. This is more often the case for accessing international markets than for domestic markets.

Innovative policy tools specific to green bonds are already under review in various markets, recognising the urgency and scale of environmental challenges (examples are given below and in the following box).

Tax incentives may also be attractive to governments from a cost-efficiency perspective, as reduced tax receipts on individual issuances may be compensated by increased volume of issuance generated. For example, tax offsets, credits and exemptions for environmental investments are also potential enablers for a green bond market.

### What are others doing?

The People’s Bank of China – the central bank and key driver of China’s green finance agenda – is reviewing the potential to provide preferential lending rates to green investments.

In 2016, the French Banking Association proposed implementing preferential risk weightings for green investments by adding a “green support factor”.

Kenya’s Capital Markets Authority proposed green bond tax incentives as part of its green bond policy, to be implemented in 2017.

### Case study: Effective policy initiative

Green bond issuance from China increased in 2016 from almost zero to 236 billion yuan (US\$36.2 billion), accounting for 39% of global issuance in 2016.<sup>10</sup> The People’s Bank of China and the National Development and Reform Commission both provide incentives to develop the green bond market. The People’s Bank of China allows green bonds issued by financial institutions to be used as collateral for low-interest central bank loans, giving banks a strong incentive to issue green bonds. Guidance from China’s National Development and Reform Commission proposes incentives for dealing with the simplification of the issuance and approval process for corporate issuers, including the following.

- Allowing for private placements and aggregation for certain project types and under certain circumstances.
- Adjusting corporate bond issuance approval conditions. For example, proceeds can account for up to 80% of the total investment of a project.
- Supporting issuers to use green bond proceeds to improve their capital structure: issuers are allowed to use up to 50% of the bond proceeds to repay bank loans and invest in working capital. Issuers with a credit rating of AA+ and good operational performance could use these proceeds to replace high-cost debt in existing green projects under construction.

## Informed institutions

### Credit rating agencies

Credit rating agencies play a key role in bond markets, to inform investors of the relative risk profiles of investments through independent assessments of the creditworthiness of bonds to be issued. Credit rating is a highly concentrated industry, with three large agencies providing around 95% of ratings globally: Moody's Investors Service (Moody's), Standard & Poor's (S&P), and Fitch Ratings. 'Investment grade' is defined by S&P as BBB– or higher, by Moody's as Baa3 or higher, and by Fitch Ratings as BBB or higher.

The presence of domestic credit rating agencies varies by market, but they must have international credibility and be active in bond ratings for their assessments of this type of issuance to be taken into consideration by international investors. The large rating agencies are increasingly offering services to assess green bonds that are in addition to their core credit ratings. For example, Moody's offers a green bonds assessment, and S&P has set out plans for a new green bonds evaluation tool.

### Underwriters

Underwriting is the guarantee to acquire a new issuance in full or in part as well as additional support such as structuring the issuance, pre-financing of an issuance and subsequent placement. Underwriting is an instrument that facilitates the access of a company to the capital market.

The level of engagement with the green bond market by banks within the country, along with their experience in underwriting, is key to adding credibility to a green bond market. Alternatively, where no mature bond market yet exists in a country, developing the local knowledge base in underwriting is key to building a strong and independent future market.

### Listing authorities

Stock exchanges also support domestic market development by having rules for bond listings. Listing a green bond on a stock exchange can provide issuers with an opportunity to access a wider pool of capital and to increase the profile of their issue. Exchanges are important market places to connect buyers and sellers, enhancing market liquidity. Of the outstanding *labelled* green bonds at the end of 2016, some 72% (US\$130 billion) were listed on exchanges,<sup>11</sup> including London, Luxembourg and Shanghai. However, only 44% (US\$308 billion) of green bonds that are *unlabelled* are listed on exchanges.

Through dedicated 'segments', exchanges can facilitate investor decisions and raise awareness of environmental and social investment opportunities, by providing guidance, training and support tools, including performance benchmarks such as indices. They can also facilitate access to a broad investor base, including large institutional investors such as pension funds and insurance companies. This can include playing an important role in connecting the high demand for green products from institutional investors in developed economies with the burgeoning green projects and financial markets in emerging and developing economies. Finally, exchanges can improve the liquidity of green bonds, thanks to greater market connectivity and more centralised trades.

Requirements to list a green bond are discussed in more detail on page 13

Green bonds from new markets in emerging economies have also been issued as private placements, a direct sale from an issuer to investors that is not listed on an exchange, though it is still registered.

## Investors

Nearly 1,500 investors globally, with US\$45 trillion of assets under their management, have made public commitments to responsible investment.<sup>12</sup> There are several benefits to investors in allocating capital to green bonds, including:

- using well-understood products to start 'greening' their investments access to green assets/projects without higher project risk
- achieving an environmental as well as financial 'return' on investment
- achieving compliance with green mandates, voluntary pledges and objectives (e.g. the UN's Principles for Responsible Investment, PRI)
- strengthened reputation – demonstrating awareness and commitment to green growth
- deeper engagement with company management on green issues.

Investors in green bonds can include mainstream institutional investors, specialist responsible investors and corporate treasuries. Figure 2 shows the variety of investors in green bonds and an approximation of where they sit on geographical focus (vertical axis) and developmental/environmental mandates versus financial ones (horizontal axis).

### Domestic investment

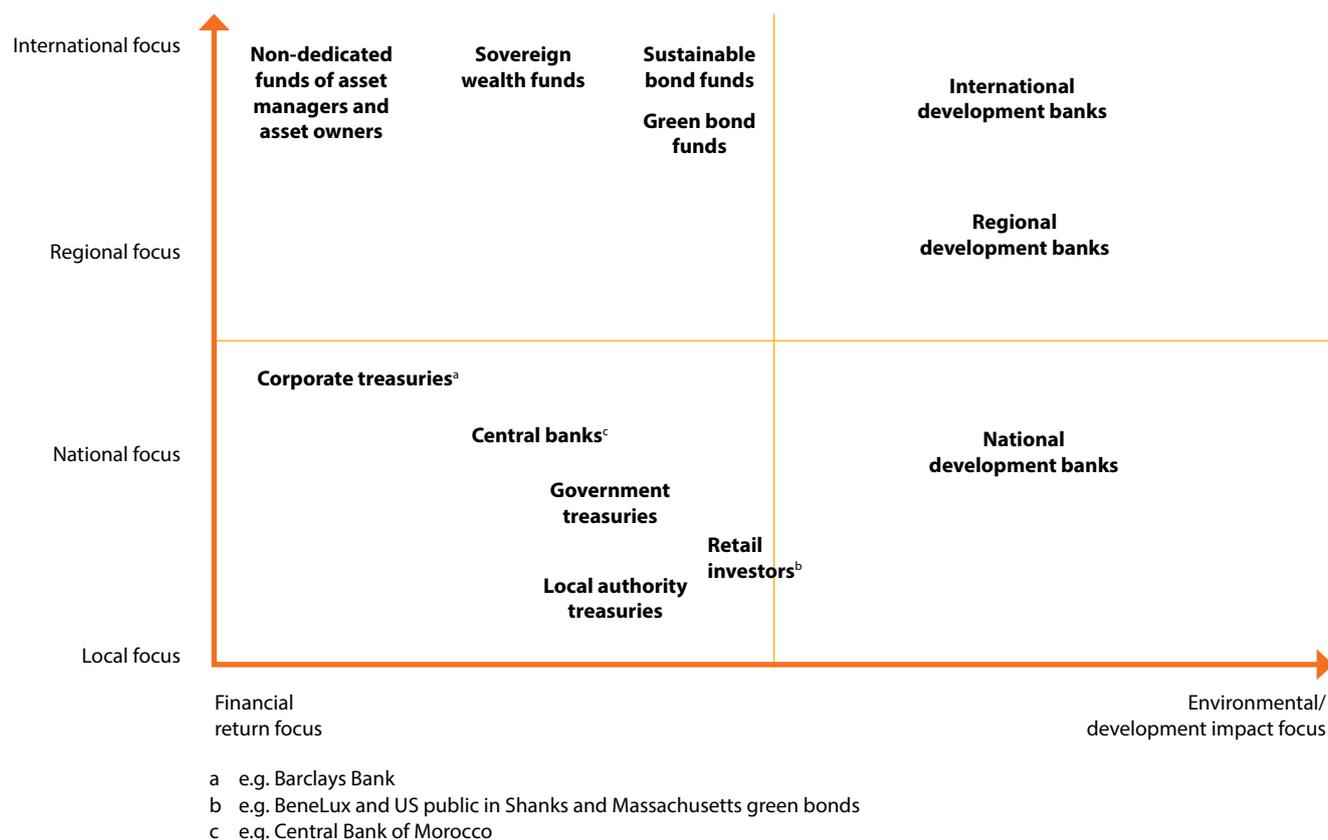
Demand for green bonds can come from a range of investors, and domestic investors are key. Domestic capital markets have an important role to play in mobilising private capital to finance domestic development. By giving companies the ability to borrow domestically in local currencies, domestic capital markets can also reduce currency mismatches for borrowers, thus reducing risk. This is particularly so in countries with high savings rates and long-term pension schemes, as they can recycle domestic capital into local projects.

Domestic institutional investors in bonds often include pension funds and insurance companies. Depending on the nature and mix of current domestic investors, green bonds can provide an attractive proposition to them. Investor risk appetite and credit ratings will determine the spread of businesses and public entities (cities, for example) that can issue bonds.

### International investment

International investors are mainly interested in 'offshore' (i.e. non-local currency) issuance from developing and emerging markets to avoid foreign exchange and currency risk, leaving local currency bonds primarily for local buyers. Some more specialist international funds with higher risk profiles can step in to take local currency issuance.

**Figure 2: Different profiles of investors in green bonds**



Source: PwC/CDKN analysis

The highest credit rating that a bond issued internationally may have is limited by the credit rating of the issuance country. This rating takes account of unavoidable political, institutional, financial and economic factors that affect all issuers and transactions predominantly based in a particular country.

For issuance in 'hard currency' (such as the US dollar or the euro) there is a limited pool of allocations to emerging-market debt driven by specific funds and indices. Only a subset of this has an appetite for understanding and investing in green bonds. Green bond funds with no specific higher-risk market mandate are likely to require higher credit ratings and lower currency risk than dedicated emerging market bond funds.

Consistent positions on financial policy and market intervention by governments can help give confidence to both domestic and international investors. Similarly, consistent policy positions and support for green growth and environmental objectives also give investors confidence in green bonds.

In order of likely importance, investment considerations by institutional investors include the following.

1. Credit and price:
  - ▶ investment grade rating given by a locally based, credible rating agency, and the lower total risk

### What are others doing?

#### India's first dollar-denominated green bond

In March 2015, the Exim Bank of India issued a five-year US\$500 million green bond: India's first dollar-denominated green bond. The Exim Bank will use the proceeds to fund eligible green projects in countries that include Bangladesh and Sri Lanka. The issue was rated BBB- by Standard & Poor's and Baa3 by Moody's.

The Exim Bank issue was oversubscribed 3.2 times from 140 accounts by attracting US\$1.6 billion in bids. A majority 58% participation came from fund managers, while banks came in with 20% commitments and sovereign wealth funds or insurance companies accounted for 18%. Geographically, 60% of participation came from Asia, 30% from Europe, the Middle East (West Asia) and Africa, and the remaining from offshore US investors.

*"The bond reinforces our commitment to the environment and helps us connect with socially responsible investors that care about the green investments that we facilitate"*

*– Yaduvendra Mathur, chairman and managing director, Exim Bank*

## Key questions for your market

Question	Answer	Action	
<i>To what extent is the environmental policy and market regulatory environment unrestrictive, and supportive of bond and green project investment and issuance?</i>	<b>Restrictive</b>	Domestic investors are constrained by regulations, for example by requiring large allocations to government securities, allowing only investments in instruments that have minimum rating thresholds, or allowing the purchase of only those securities that are listed on an exchange.	Review economic and fiscal cost and benefit of removing the restrictive regulations. Amend fiduciary duty and stewardship guidance so that environmental, social and governance (ESG) aspects are at least neutral or, better, promoted. Review case for changing pension fund benchmarks from short to long term.
	<b>Neutral</b>	Neither restrictive nor supportive regulations.	Scope the business case for implementing new policies, regulations and tax structures to support bond and green bond markets, looking at successful examples in other markets.
	<b>Supportive</b>	No notable restrictions, some regulations encouraging the bond market and environmental investment. For example: preferential risk ratings, exemptions from loan-deposit ratio caps for loans funded by green bonds, and fast-track approval procedures for green bonds.	Review regulations to confirm whether they: <ul style="list-style-type: none"> <li>• support investment from a broad group of investors</li> <li>• support issuance from a broad group of issuers.</li> </ul> Ensure any future developments in market structure are supportive of green investments. For example, include green assets in revisions of covered bond legislation.
<i>To what extent are there existing tax incentives?</i>	<b>None</b>	No tax incentives in place for investors or issuers.	Consider implementing tax incentives such as tax credits and bond exemptions. For example, those incentivising investment in the municipal bond market in the US.
	<b>Some</b>	Tax incentives in place to encourage investment, either in green bonds if a market exists, or in green assets.	Review the effect of green bond tax incentives (if applicable) and ensure they are incentivising a broad base of issuers and investors. Otherwise, look at existing incentives for green assets and see if they can be applied to green bonds.
<i>What is the depth and credibility of credit rating agencies?</i>	<b>Local</b>	One or two local credit rating agencies.	Review the extent to which domestic (and potentially international) investors place reliance on these agencies. Engage the international agencies to understand what they can do in the market.
	<b>Mixed</b>	Credible domestic credit rating agencies and the presence of one or more of the big three international agencies with experience in green bonds.	Engage the international agencies that are present to bring their green bond knowledge and expertise into the market. Support capacity-building in domestic agencies.
<i>What experience do banks with operations in the market have regarding arranging and underwriting green bonds?</i>	<b>Low</b>	Low levels of engagement with green bonds.	Engage the banks to assess their appetite for building capacity to offer underwriting services to the green bond market, and support their understanding of the opportunities.
	<b>High</b>	High levels of engagement with green bonds in other markets, including experience in underwriting.	Further engagement with large banks to ensure they are engaged with future green bonds. Where the banks have experience in other markets, encourage them to bring this knowledge and experience into the market.
<i>Is the national credit rating ceiling above investment grade?</i>	<b>No</b>		Focus resources on developing a strong outlook for the national credit rating ceiling, and focus green bond market effort on the domestic investor base.
	<b>Yes</b>		Understand which public, development bank, city, financial institution and corporate issuers can issue internationally with a rating above investment grade.

- ▶ profile when country/currency risk and any credit-enhancement mechanisms are factored in
  - ▶ same pricing and tenor as comparable non-green bonds
  - ▶ little if any preference on issuer type (corporate, bank, municipal/governmental, supranational, etc.).
- Alignment with global standards, especially the ICMA Green Bond Principles, and, where possible, recognised industry standards.<sup>13</sup> To be eligible for a fund, the green bond must be included in a green bond index.
- Transparency:
  - ▶ a credible and transparent green bond framework covering governance, project selection, monitoring and reporting
  - ▶ evidence of strong corporate governance to compensate for emerging market risk (political and currency)
  - ▶ consistent commitment and action on managing climate and environmental issues at the institutional level, e.g. environmental or climate change policies

## Key questions for your market

Question	Answer	Action
What is the level of <b>awareness</b> of green bonds?	<b>Low</b>	Design and implement a programme of awareness-raising materials and engagement (e.g. workshops). This would help maintain consistency across domestic and international investors and help ensure a robust and credible market.  Support investors to understand: <ul style="list-style-type: none"> <li>• how to identify a green bond and evaluate green projects</li> <li>• that green bonds have the same risk-return profile as traditional bonds</li> <li>• examples of good practice from other markets.</li> </ul>
	<b>High</b>	Engage investors to understand why awareness is not translating into investment. If there is an issue of limited supply, identify how the investor group can help encourage issuance.
Who are the major <b>investors</b> in the bond market?	<b>Banks</b>	Identify barriers to institutional investor interest in the bond market and seek to address this to broaden the investor base.
	<b>Mixed</b> (including institutional investors)	Review ease of access to the bond market for smaller and retail investors.
To what extent are <b>international</b> investors active in the market?	Almost entirely domestic	Provided investment environment is supportive, look to engage those investors, funds and indices that are active in parallel markets.  Engage international agencies and the private sector providing risk-hedging instruments, understand what they require to operate in this market, and offer products and services to reduce investor exposure to currency risk.  Review levels of withholding tax and foreign exchange levies, which can be a financial cost to issuers. Seek to reduce these if possible through international agreements.
	<b>Mixed</b> (domestic with some international)	Deepen the international investor base through awareness-raising/roadshows in key markets, in particular ahead of any major issuance from the country.
What is the credit <b>risk profile</b> of the funds of key investors?	<b>Low</b> (current investors invest only in assets of low risk/high credit rating, e.g. as a result of financial regulation)	Develop a green project pipeline to match the current risk profile, and identify and address barriers to higher risk investment. This could be through aggregation to give visibility to a green project pipeline, or by developing new green projects.  Review the case for flexing institutional investor regulation that limits scope for investment into, in terms of credit rating, higher-risk projects and alternative assets such as infrastructure.
	<b>Mixed</b> (current investors have limited risk appetite but have invested in some higher-risk bonds and projects in the past.)	Develop a green project pipeline in accordance with current investors' appetites.

- ▶ a good level of notice to the market to enable investors to get comfortable with the green as well as the financial aspects of the bond.
4. Independent verification. Independent third-party verification will be needed unless the issuer is a 'pure green' business (e.g. dedicated renewables) or has a substantial green bond track record and high level of transparency. This may be CBI certification or second opinions and post-issuance assurance from a known supplier.
5. Annual reporting. Ideally quantitative, but at minimum qualitative, annual impact reporting is an increasing expectation – though investors are pragmatic on current issuer ability to do this in detail.
6. Eligibility. General criteria for green projects are aligned with ICMA Green Bond Principles and, where relevant, with international standards on emissions reduction.
7. Initial disclosures and intended use of proceeds. Disclosure includes project categories, expected environmental impacts, new project versus refinancing, management process for tracking proceeds, reporting plan.
8. Reporting on use of proceeds and project impacts/benefits. Reporting (in public reports) includes use of proceeds, environmental impacts.
9. Independent assurance. Financial auditors are used to track bond proceeds and opinions are sought on the selection of green projects and environmental benefits from experts in climate and ESG aspects.

In addition, a group of 26 green bond investors have released a joint statement of investor expectations for the green bond market.<sup>14</sup> The key requirements are as follows.

## Issuers and project pipeline

Having an understanding of the existing bond market in a country is key to understanding the potential for a successful green bond market. In many markets, the financial sector may be the largest issuer of private sector bonds, with the government the largest issuer overall. Comparing bond issuance in-country with the profile of green bonds being issued internationally can draw useful comparisons, for example on average issuance size, rating, tenor and type of issuer.

Clarifying the project pipeline within a country can help understand the future demand for green finance and therefore the possible level of issuance. Eventually, a successful green bond market could enable infrastructure projects, and their key stakeholders, to access private finance directly, in addition to indirectly through development finance institutions.

Projects that can create major, positive green impact will vary by market – sustainable forestry in one location, for example, or green cities in another. However, it is also important to consider the size of issuance: those that are generally small are less attractive to investors, who prefer to invest in larger bonds, and are also likely to incur relatively high administrative costs as a proportion of proceeds.

First issuance in a new market is likely to start with either governments, cities, development banks or large commercial banks that have a vested interest in market development and may already be known to the capital markets. It is then likely to extend to large corporates of high investment grade, possibly where they may have operations overseas and can benefit from issuance in hard currencies. Over time, as investors get comfortable with the concept and as liquidity grows, the market may be able to extend down the credit rating scale and broaden the number and type of issuers.

## Benefits of green bond issuance

Benefits	Government	Development banks	Commercial banks	Corporates
Investor diversification			X	X
Investor engagement and longevity			X	X
Likely high demand and oversubscription			X	X
Alignment of internal sustainability and finance strategies	X	X	X	X
Reputational benefits (demonstration of commitment to environmental initiatives)	X		X	X
Demonstration of understanding this new market		X	X	
Freed up balance sheets	X	X	X	X
Increased liquidity in the market	X	X		
Raised awareness with domestic and international investors	X	X		
Demonstration of the green bond concept	X	X	X	
Alternative to raising finance internationally	X			
A tool to manage macroeconomic and fiscal risk	X			

### What are others doing?

Nigeria's government has stated its intention to issue a 20 billion naira (US\$64 million) green bond. The bond will be aimed at domestic investors and proceeds used to finance low-emission projects in areas including solar power, agriculture, transport and deforestation.

*"The green bond issuance will be the first stage in enabling Nigeria to tap into the growing global market for green bonds"*  
– Amina Mohammed, Minister of Environment, Nigeria

### What are others doing?

In early 2016, Yes Bank in India issued a green bond of 3.5 billion rupees (around US\$54 million) that was bought entirely by the International Finance Corporation (IFC). The IFC in turn issued a green bond of the same size on the London Stock Exchange. This enabled the indirect investment by international investors in local currency issuance.

## Benefits of green bond issuance

The continued growth of the green bond market internationally is evidence that issuers, as well as investors, see a benefit from this method of financing, despite possible additional administration and costs involved. In the table below we set out the most common reasons and benefits to issuance for different types of issuer.

## Key questions for your market

Question	Answer	Action
<p>What is the level of <b>awareness</b> of green bonds?</p>	<b>Low</b>	<p>Design and implement a programme of awareness-raising and engagement (e.g. workshops). This would help maintain consistency across domestic and international issuers and help ensure a robust and credible market.</p> <p>Support issuers to understand:</p> <ul style="list-style-type: none"> <li>• how to identify projects for a green bond</li> <li>• that the additional steps for a green bond rather than a 'plain vanilla' one are not a barrier, and likely less onerous than they may appear</li> <li>• examples of good practice from other markets.</li> </ul>
	<b>High</b>	Engage issuers to understand why awareness is not translating into issuance. If an issue is of limited demand, identify how the bonds could be made more 'investable'.
<p>What is the <b>rating</b> profile of bonds in the market?</p> <p>(Rating from local provider before any country risk/credit rating taken into account)</p>	<b>Entities needing finance do not have credit ratings</b>	<p>Look for project and objective synergies with those that are able to issue bonds (e.g. development finance institutes, banks).</p> <p>Support relevant entities with awareness-raising and technical assistance in their journey towards gaining a rating.</p>
	<b>Typically below investment grade</b>	<p>Review potential to raise ratings, e.g. through:</p> <ul style="list-style-type: none"> <li>• reviewing the benefit of structuring and of over-collateralisation (high level of cash flows relative to risk)</li> <li>• reviewing opportunities to pool assets in special-purpose vehicles (this can also reduce barriers of issuance size)</li> <li>• using credit guarantees from development finance or government entities <ul style="list-style-type: none"> <li>– rather than providing revenue guarantees or first-loss support direct to projects, consider providing them to bonds with a portfolio of projects</li> <li>– consider the potential to channel donor or international climate fund support through a domestic facility to provide guarantee support</li> </ul> </li> <li>• providing a centrally run green project refinancing fund that supports sovereign and municipal green bonds and reduces risk (through government guarantee/support or increased returns enabled by tax reductions)</li> <li>• enabling issuance from higher-rated issuers.</li> </ul>
	<b>Typically low investment grade</b>	The actions above can also be applied here.
	<b>Typically highest investment grade</b>	<ul style="list-style-type: none"> <li>• Review the interest for broader spread of issuance ratings if relevant.</li> <li>• Review any limitation of investor appetite even for lower risk green bonds.</li> </ul>
	<b>No</b>	<p>Identify, encourage and support potential issuers of 'demonstration issuance' – typically government cities, financial institutions or development banks. Government ministries are especially well placed to do this because of a relatively high credit rating in the market. Engage a development bank(s), either as an issuer or investor, to support this demonstration. Demonstration issuance helps to prove the concept and the investor demand, and also raises the profile of the country's financial market.</p> <p>Aggregation of small projects or issuance can help to reduce barriers of investor attractiveness and high administration costs.</p> <p>Establish a temporary technical assistance fund to cover green bond framework development, second opinions and reporting, and help issuers get over the initial barrier of this new process. This also helps ensure a good standard for the initial issuance and builds capacity in the service provider market. A fixed and transparent cap on time/funds available may motivate issuers to act quickly.</p>
<p>Have any green bonds already been <b>issued</b> in the market?</p>	<b>Yes, but in small sizes</b>	Share the detail and learning from these bonds across the market. Engage with issuers of large traditional bonds to identify the potential of demonstration issuance – again, these are likely to be cities, financial institutions or development banks.
	<b>Yes, in large sizes</b>	<p>Ensure the detail and learning from these bonds is shared across the market. Engage with issuers of traditional bonds to broaden the green bond issuance base.</p> <p>Consider establishing a dedicated 'green segment' on the stock exchange to help investors identify and assess green investment opportunities.</p>
<p>What does the project <b>pipeline</b> look like?</p>	<b>Unclear</b> (low volume or visibility of bankable projects, not justifying investment by key market players to understand and engage with the market)	Define and widely communicate green project priorities for the country. Set this out in a green infrastructure/ climate investment plan that sets out the path to green growth for the country and includes specific targets and actions by sector.
	<b>Strong and clear</b> (high volume and visibility of appropriate bankable projects and a robust project pipeline)	<p>Identify and engage potential issuers of green bonds to finance these projects.</p> <p>Check that awareness and understanding of the pipeline is high across relevant potential issuers and investors.</p>

## Governance and leadership for market development

To be successful, green bond market development must be coordinated, with engagement across key market players of the public and private sector. Good governance requires rules and regulations, but also trust, leadership and collaboration across the public and private sector.

Stakeholders of a successful market can work together on the development of the market through focused collaboration, and through green bond market development committees or councils. Committees with representatives from central banks, ministries, development banks and other financial sector and corporate players are emerging around the world, including in Brazil, China, Colombia, India, Indonesia, Mexico, Nigeria and Turkey.

A market development committee will need to work through what is required to create an enabling environment for developing a market, such as policy, incentives and green definitions. In time, this is about building a green finance strategy for the country, with green bonds often as the market entry point. While green bonds may be the priority focus at the establishment of such a committee, the purpose is about building a market that will move capital flows towards environmental solutions.

For example, in the market development collaborations in place in Brazil and Nigeria, typical members include representatives from the ministries of environment and finance, local pension funds, public and private banks, insurance companies, local market institutions and key industrial sectors.

- Brazil – the Sustainable Market Development Council was convened by the Climate Bonds Initiative and the Brazilian Business Council for Sustainable Development (CEBDS in the local language), constituting enterprises, investors and banks to develop a strategic investment plan for Brazil’s new economy.
- Nigeria – the Green Bond Private Public Sector Advisory Group (GB-PPSAG) is set to guide the first tranche of sovereign bonds. Nigeria is also planning green bond guidelines for the planned domestic issuance of a sovereign

green bond, to finance a variety of projects. The guidelines will include the relevant targets under the national NDC for each project type. The proposed key areas include environment (reforestation), agriculture (biofuels) and power (off-grid solar).

The committees all look slightly different to reflect local market dynamics and needs, in particular regarding the involvement of the public sector. They range from public sector-led (Nigeria) through public sector-coordinated (Colombia) to private sector-only with public sector consultation (Brazil). Whether driven by the public or private sectors, such committees have a key role in driving and directing the market to support the implementation of the NDC, and other environmental sustainability goals and related investment plans.

## Green bond standards

Confidence in the green credentials of green bonds is essential for investor interest and a sustainable market. Credible and widely supported guidelines, standards and independent reviews help investors make informed decisions about the environmental credentials of a bond and reduce their administration in this process. International standards are the most widely used, and can provide access to listings and indices, opening up the investor base.

## International principles and standards

Principles and standards around what is green are crucial for two main reasons. First, they help investors monitor and verify the green-effectiveness of their investments, building trust in the bond and widening the potential investor base. Second, they can also help governments to support green bond issuance in line with national green growth priorities.

The commonly used international principles and standards are the Green Bond Principles of the International Capital Markets Association (ICMA) and the Climate Bonds Standards from the Climate Bonds Initiative.

The Green Bond Principles are voluntary guidelines that “recommend transparency and disclosure and promote integrity in the development of the green bond market by clarifying the

## Key questions for your market

Question	Answer	Action
Are there any green finance/green bond market development committees?	No	Design and establish a market development committee (such as those described above) by identifying members of key market players, lead convenors and terms of reference.  International cooperation between the various country committees will also allow knowledge, ideas and action proposals to be shared and activities to be synchronised.
	Yes	Focus the committee, and the spread of members, on best addressing main current barriers to a successful green bond market.
How has the bond market developed to date?	Low private sector engagement	Identify key private sector entities with a vested interest in a future successful bond and green bond market, and bring them into a committee or other role focused on market development.
	High private sector engagement	In light of current market barriers, review membership of any committee, and adjust involvement of investor, <u>underwriter</u> or <u>issuer</u> members to best address them.

approach for issuance of a green bond". Coordinated by the ICMA, they have four core pillars:

- use of proceeds
- process for project evaluation and selection
- management of proceeds
- reporting.

The Climate Bond Standard is an international standards and certification scheme for green bonds. It sets detailed green definitions and eligibility criteria, aligned with the Green Bond Principles, to verify green credentials of a bond or other debt instrument. It aims to provide a robust approach to verifying that proceeds are being used to finance projects and assets that are consistent with delivering a low-carbon and climate-resilient economy. This standard covers:

- pre-issuance requirements (identify qualifying projects and assets, and arrange independent review)
- post-issuance requirements (track and record proceeds)
- sector-specific eligibility criteria.

Under the Climate Bonds Standard, sector criteria are available for water, solar, wind, low-carbon buildings, low-carbon transport and geothermal. They are also being developed for bioenergy, land use, hydropower, marine, waste management, and information technology and broadband.

#### National guidance

National-level guidelines have also been developed that go further to describe eligible projects and the use of proceeds within those countries, in particular to align with national green growth and climate priorities. Variations exist between the national guidelines, and also with the international standards, such as on the eligibility of nuclear power, clean coal and large hydropower.

National-level guidance has been developed in a few emerging markets, including:

- China Bond Guidelines and the Green Bond Endorsed Project Catalogue – six overarching catalogue sectors that are broken down into two additional levels of project type. The six main categories are: energy saving; pollution prevention and control; resource conservation and recycling; clean transportation; and clean energy, ecological protection and climate change adaptation. There is alignment with international standards, for example, for the management of proceeds and for reporting and disclosure. Guidelines on external reviews and assurance are also closely aligned, with China taking early steps to strongly encourage the use of independent verification.
- India Green Bond Guidelines – the Securities and Exchange Board of India (SEBI) released a first draft of green bond guidelines in 2016. The ICMA Green Bond Principles were used to develop SEBI's guidelines. Differences with international standards, however, include no definition of what is green; instead, SEBI will make evaluations of this on a case-by-case basis. Issuers are also required to disclose use of proceeds and to list projects to which proceeds have been allocated in periodical filings made to stock exchanges. The guidelines are currently being reviewed by the government.
- Morocco Green Bond Guide – the Moroccan Capital Markets

Authority (AMMC) released a green bond guide in 2016, prepared with the support of the IFC. Its target audience includes issuers, investors and financial professionals. The guide aims to facilitate the development of the green sector in Moroccan capital markets, by offering an overview of the free bond issuance process, identifying the main requirements and best practices as well as clarifying stakeholder roles.

- Brazil Green Bond Guidelines – these were developed by Brazil's banking federation (FEBRABAN) in conjunction with the local Business Council for Sustainable Development (CEBDS), to grow the market.

There are four key channels emerging for the verification of green bonds.

- **Second opinions** – these are a review and statement on the green bond credentials by an external environmental specialist organisation. They lend further credibility to the 'greenness' of bond issues, although they do not constitute formal certification or verification.
- **Rating agency assessments** – these are separate from the credit rating process. The Moody's Green Bond Assessment is expressed as a score from GB1 (Excellent) to GB5 (Poor). The scale evaluates: (1) organisation, (2) use of proceeds, (3) disclosure on the use of proceeds, (4) management of proceeds, and (5) ongoing reporting and disclosure. S&P is also developing a green bond assessment tool.
- **Certification** – this is available for assets and projects that meet the requirements of the Climate Bonds Standard of the Climate Bonds Initiative. In order to receive its "Climate Bond Certified" stamp of approval, a prospective issuer of a green or climate bond must appoint an approved third-party verifier, who will provide a statement that the bond meets the Climate Bond Standard.
- **Verification or assurance** – post-issuance verification of the management of the use of proceeds, covering the tracking and reporting of funds. Regular monitoring and verification by a third party is key to building trust among stakeholders and, in turn, increasing demand.

#### Listing requirements

As noted on page 5, listing authorities have a key role to play in bond markets and can have their own listing requirements for bonds. The requirements usually align with general market practice, such as alignment with recognised principles and standards, verification, and transparency and reporting. Issuers admitting bonds to the 'green segments' on exchanges must often provide proof of an external review to confirm the green nature of the instruments and a written confirmation that the entity appointed to conduct the external review is independent and qualified.

#### Green bond segments, LSE

The London Stock Exchange (LSE) has launched a range of green bond segments, offering investors clearer access to green projects. To admit green bonds to these segments, issuers are required to provide the LSE with proof of external review (verification, second opinion, certification or rating) from an independent and qualified party.

## Key questions for your market

Question	Answer	Action
<i>Is there any domestic environmental <b>legislation</b> that ensures environmental standards for projects (and adherence to them)?</i>	<b>Limited</b>	Explore and research potential environmental legislation that may facilitate future green projects. Undertake gap analysis against peer markets and international standards.
	<b>Yes, but enforcement inconsistent</b>	Give powers to enforcement agencies to deter any market failures. This will help give confidence to investors.
	<b>Yes and enforced</b>	Review and confirm that legislation effectively covers sectors of potential bond issuance (e.g. land use, renewables), and that it is not prohibitive.
<i>What is the level of awareness of international green bond principles and <b>standards</b>, or presence of domestic guidelines?</i>	<b>Low awareness/no national guidelines</b>	Raise awareness of international standards, or establish clear and transparent national guidelines that show how international standards align with domestic priorities.
	<b>High awareness but national guidelines not in line with international standards</b>	Align domestic guidelines with international standards to give confidence to investors and rating agencies and reduce their burden in managing differences.
	<b>High awareness and national guidelines in line with international standards</b>	Support issuer, consultant and verifier market to understand and implement the standards.
<i>What is the capacity of local market players offering <b>verification</b> and rating services for green bonds?</i>	<b>Low (none or limited number)</b>	Engage institutions that could develop an offering in this market. Engage those institutions with overseas offices that have experience in green bond verification or ratings and encourage extension of skills and experience into this market.
	<b>High (local players with high credibility)</b>	Review price point, and encourage these organisations to help raise awareness and standards in the market.

## Conclusion

Overall, a green bond market requires a comprehensive enabling environment, a deep and broad base of investors and issuers, a strong project pipeline, effective corporate governance, and adherence to clear standards. Once these are developed, a successful green bond market can often self-perpetuate and deliver an increasingly positive environmental and development impact.

The challenges facing developing countries to mobilise green finance primarily come from underdeveloped financial systems in areas crucial for green investment, such as systems to structure major projects. Many of the same building blocks needed for a green bond market apply to the development of financial markets more generally. As countries seek to develop their financial, in particular bond, markets they should build into the system a structure that also supports green bonds and broader green finance.

Four recent developments mean there is now an opportunity for developing and emerging markets to use the green agenda to develop financial markets and vice versa.

- Implementation of country climate and broader environmental commitments, such as the NDCs in the UN Paris Agreement, will create a clear longer-term low-carbon development strategy and national project pipeline.

- The growth in the green bond market globally means that a set of approaches and standards, as well as knowledge and experience, are established and can be replicated and translated into new markets.
- Large owners and managers of capital are increasingly interested, and mandated, to seek positive impact as well as financial returns.
- Dedicated international climate funds and development banks are looking to support the flow of capital into environmental projects, including the development of green bond markets, through the use of concessional finance, credit enhancement tools and their own balance sheets.

The opportunity for developing and emerging markets may be substantial: the significance of green bond markets for developing countries lies in the opportunity to begin plugging the US\$2.5 trillion funding gap suggested by the United Nations to achieve the Sustainable Development Goals by 2030. Green bond markets are one tool in a suite of green and development finance vehicles that should be reviewed for their potential in countries where they do not currently exist. If a country is on a robust trajectory of capital market development, and if the benefits of addressing any barriers to market development (highlighted in this guide) outweigh the costs, further investment in awareness-raising and markets may be worthwhile, and a green bond market may be possible.



## Glossary

<b><u>Bond</u></b>	A tradeable debt instrument issued to investors for a predetermined duration of time and interest rate. Investors in the bond market are typically paid a fixed interest rate (coupon) for the duration of their loan and return their initial investment upon maturity. As such, bonds are often referred to as 'fixed income' securities.
<b><u>Credit rating</u></b>	A grade classification of a debtor's creditworthiness assigned by specialised agencies, the most prominent of which include Standard & Poor's, Moody's and Fitch Ratings. Credit ratings for corporations and countries are holistically determined through investigations and the analysis of several credit metrics. The resulting rating is typically some variation of a letter grade, from As (higher rating, lower risk) to Ds (lower rating, higher risk). Higher credit ratings result in lower costs to mobilise resources from capital markets (that is, the costs they pay on bonds issued).
<b><u>Creditworthiness</u></b>	An evaluation of a borrower's ability to manage current and potential debt obligations that is performed by rating agencies and lending institutions. Creditworthiness is based on several metrics that include, but are not limited to, a borrower's credit history, assets and liabilities.
<b><u>Green projects</u></b>	Projects with positive environmental or climate-related attributes. The projects suitable for the issuance of green bonds are referred to as green projects.
<b><u>Investors</u></b>	Investors relevant to the longer-term, lower-risk, nature of bonds are mainly institutional investors (e.g. pension funds, mutual funds, investment funds, foundations, insurance companies, investment banks, asset managers) that have long-term profit goals. Investors focused on environmental, social and governance (ESG) aspects are a segment of this category, and are natural investors in green bonds.
<b><u>Issuers</u></b>	Institutions that have a potential project with environmental/climate benefits and opt for issuing green bonds to raise funds. This can include corporates, financial institutions, development banks, cities and governments.
<b><u>Rating agencies</u></b>	Agencies that provide credit ratings, research, tools and analysis. They contribute to the transparency and integration of financial markets and so have an importance in the capital market.
<b><u>Tenor</u></b>	The amount of time left for the repayment of a loan or until a financial contract expires. <sup>15</sup>
<b><u>Underwriters</u></b>	Financial institutions (e.g. banks, investment banks, brokerage houses, securities distributors) that assume a major role in the issuance of the bond. They are hired by the issuer to act as underwriters of the operation, being responsible for the development of the structure, price, launch of the bond on the market and placement with the investors. The structuring of operation relies on the definition of the characteristics of the bonds, such as term, interest coupon and principal coupon.
<b><u>Use of proceeds</u></b>	Detailed information for investors on how money invested in a bond will be put to use, for example for specific projects or sectors.

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## About CDKN

The Climate and Development Knowledge Network (CDKN) aims to help decision-makers in developing countries design and deliver climate compatible development. We do this by providing demand-led research and technical assistance and channelling the best available knowledge on climate change and development to support policy processes at country level.

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