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Green Bond Market: Who are Its Protagonists?

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GREEN BOND MARKET: WHO ARE ITS PROTAGONISTS?

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Elaborated by:
Economic Studies and Information Program

Romy Calderon
Head of the Program

Javier Carbajal
Senior Economist

Latin American Association of Development
Financing Institutions (ALIDE), General Secretariat.

Paseo de la Republica 3211, San Isidro
P.O. Box: 3988 | Lima, 100 Peru
Phone: +511-203 5520
secretariageneral@alide.org
www.alide.org

Design:
Social Communication Unit

Hanguk Yun
comunicaciones@alide.org
Ext. 226

Hector Bernal
comunicaciones2@alide.org
Ext. 227

Photos:
www.pxhere.com

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1

Introduction

Although more than a decade has passed since the first green bond issue appeared, it is in these past five years that their growth has become fast-paced. One of the factors most responsible for that growth has been the greater consciousness and consensus that have taken hold among countries regarding the major problems being created by climate change and the financial costs it entails.

Countries have become more aware that those environmental problems are more telling in society day-by-day and that, as such, their solution calls for joint action at the global level, as expressed in international initiatives like the Paris Agreement, the United Nations Sustainable Development Goals (SDGs), the G20 Green Finance Study Group (GFSG), and the Financial Stability Task Force on Climate-Related Financial Disclosures (TCFD), among others. However, financial resources are needed if these initiatives --and many others at different government levels-- are to function.

The UNEP Finance Initiative estimates that the transition to low-carbon and climate-resilient economies will require investing at least US\$ 60 trillion between now and 2050. That figure includes approximately US\$ 35 trillion to decarbonize the world energy supply by means of renewable energy and energy efficiency; US\$ 15 trillion to adapt existing infrastructure to changing meteorological conditions; and US\$ 2 trillion to reorient global land use to satisfy growing demands for agricultural crops and stem tropical deforestation (UNEP FI, 2018). Climate investment needs in Latin America alone are estimated at between US\$ 75 and US\$ 80 billion a year, almost three times the amount currently being invested for that purpose.

That is the gap in climate financing that must be bridged. Even though the concept has not yet been clearly defined, it refers to public and private financial flows for investments and activities to reduce carbon emissions or increase resilience to the impact of climate change. In that connection, a wide range of climate financing initiatives have been introduced since 2016, compared with any other year since 2000 (UNEP, 2017).

Moreover, if other aspects that go beyond the financial are considered --what is known as socially responsible investment (SRI) that also evaluates the social or environmental aspects or good governance of the enterprises or countries in which the investments are made--, it can be noted that the value of the assets administered in that way has reached some US\$ 22.9 billion at the global level. This represents growth of 25.2% compared with that of 2016, according to a report published by the Global Sustainable Investment Alliance (GSIA) (GSIA, 2017).

A combination of public and private financing could prove beneficial for reaching climate and environmental goals. As a result, it is highly important, for mobilizing private capital, to take advantage of the potential offered by leveraging public finances, ranging from financial support through financing and incentives and the creation of new sustainable financial markets to the implementation of new sustainability regulations and practices (UNEP FI, 2016, p. 15). Here, National Development Finance Institutions (DFIs) can take advantage of their experience in creating new markets in the financial system to help attract more private sector funds with which to finance Paris Agreement objectives.

DFIs have become valuable public policy instruments for getting the private sector to invest in mitigation measures and have created a growing number of specialized financial instruments along that line. One of the financing options that has shown the strongest growth is green bonds, whose issuance increased by 100% in 2016 and 74% in 2017, rising from US\$ 89,000 million to US\$ 155,000 million. The year 2018 was expected to see the strengthening of the green bond market and apparently growth has moved in that direction.

The purpose of this document is to reveal the role of multilateral development banks (MDBs) and DFIs in promoting green bond issuance and development of that market. The document is organized into seven sections. The section following this introduction gives a brief definition of green bonds and of the different types that have been issued. The third section details the various standards that have been applied to bonds of this kind, stock market indices that have appeared and the certifications used. The fourth and fifth sections describe the current situation in the bond market in line with the climate and the global green bond market. The sixth section makes a brief analysis of the role of multilateral development banks and national development finance institutions in promoting bond issues and development of that market. Lastly, the seventh section sets out the conclusions and some general observations.



2

Conceptual Aspects of Green Bonds

These are any type of bond for which the proceeds are earmarked to finance, or refinance, in part or in full, new or existing projects that are eligible as “green or sustainable projects,” and that are in line with four basic principles: use of the proceeds; project evaluation and selection process; management of the proceeds; and reports (ICMA, 2018). In that way, the issuer can self-label the bond as green and ensure that the proceeds will be used to finance green projects, thereby committing to a certain level of transparency and accountability. It is precisely this possibility for self-labelling that critics of this instrument offer as evidence of its being a self-labelled security, without any legally binding principles to guarantee investors the legitimacy of their demands as issuers.

In the face of that situation, institutions like the International Capital Markets Association (ICMA) and the Climate Bond Initiative (CBI) Climate Bonds Standard¹ have established the bases or principles that define what a green bond should be. Both institutions indicate which activities are eligible for inclusion, how they should be communicated, and what transparency and information procedures are to be followed in regard to the use of the proceeds. That includes the hiring of auditors to state their opinion about the projects and their fulfillment.

It is also important to clarify a few points and draw attention to several differences from other types of bonds. Green bonds encompass climate and environmental bonds, provided that they are in line with the four principles cited above (ICMA, 2017). Furthermore, a carbon bond is a certificate that registers a reduction in the carbon footprint, while a sustainable bond finances or refinances both green and social projects. In that way, by complying with specified principles and guidelines, bonds that yield environmental and social benefits can be classified into: green, social, and sustainable bonds. In order to do this, the bonds must be verified independently of their fulfillment of those criteria, or of other criteria under which they may be issued.

Once again, a key characteristic of green bonds is the use made of the proceeds (specified in the bond offering prospectus and/or registration documents), which are managed separately within issuing institutions and are earmarked for use in the project's financing over the life of the instrument (BVM, 2016).

Green bonds are generally used to finance operations or assets relating to: renewable energy, energy efficiency, sustainable waste management, conservation of the terrestrial and aquatic biodiversity, sustainable water and wastewater management, products adapted to an ecological and/or circular economy, production technologies and processes, and adaptation to climate change.

There is another organization, in addition to the ICMA, that establishes the principles on which green bonds are based, the “Climate Bonds Initiative” (CBI), which defines labelled green bonds or bonds certified as being green as those bonds where the use of their proceeds are earmarked to finance new projects and also to refinance existing projects with environmental benefits.² It also distinguishes between labelled green bonds and climate bonds. The former are marketed by the issuer as “green” bonds, whose proceeds are for green projects and climate assets, while climate bonds are represented by a broader universe of bonds whose proceeds are earmarked for climate projects, but have not yet been labelled as green.

The World Bank, on the other hand, defines a green bond as debt securities that are issued to produce capital specifically to back environmental projects or ones relating to climate change.³ The Bank is seconded by countries like China and India, where the former, as the world's largest issuer, explained through its Central Bank its notion of what a green bond is, and India is also working on its own rules. Critics of this type of bond issues point out that the fragmentation in the conception/establishment of standards creates uncertainty among investors and will, in time, curb future growth of the market (Flood, 2017).

To this fragmentation, it is necessary to add the tones of green, as expressed in the degree to which the activities financed by the issues are totally green or not. As a result, issuers that engage fully in activities that are considered “green” are known as “pureplay,” and issuers that don't belong to that group are known as “brown companies.” All issuers, irrespective of the economic sector in which they operate, have the possibility and responsibility of executing and/or financing projects that mitigate a negative environmental impact (Santiago B. d., 2018, p. 4).

¹ Created in 2009, it is a non-profit organization whose purpose is to mobilize fixed income markets toward climate change solutions.
² Bonds and Climate Change: State of the Market 2016, Climate Bonds Initiative.
³ IFC (2018).

Most used Types of Green Bonds

Today there are a wide variety of types of green bonds, the most common of which are described below:

- **Go Bonds:** The most common type of long-term debt security. These bonds are backed by the issuer's full faith and credit and the funds are earmarked for specific projects or activities or for general corporate purposes. Most green bonds are go bonds and the proceeds are earmarked for eligible green assets or projects (ADB, 2018, pp. 25-29).
- **Corporate bond:** This is a bond issued by a corporation with the issuer's guarantee that the principal capital will be paid back, together with the interest earned, to investors that acquire part of the bond (bondholders). This category includes bonds issued by "YieldCo"⁴ vehicles to finance acquisitions of assets.
- **Project bond:** This is a special type of debt instrument issued to finance an infrastructure or energy project in full or in part. The project is established as an independent legal entity and the cash flows from one or several projects collateralize commitments to the investor, which is directly exposed to the project risk. Project bonds are considered ideal for green labelling, inasmuch as the establishment of an independent legal structure guarantees that the funds collected will be used for the planned purpose, and will facilitate external review, monitoring, and the presentation of reports.
- **Covered Bond:** Debt securities issued by financial institutions collateralized by an underlying array of assets normally earmarked for home mortgages, in addition to a general right to the issuer's assets. In other words, they are backed by a basket of assets, either mortgage loans or public sector debt, and enjoy a two-fold guarantee: that of the issuing institution itself, on the one hand, and a group of assets, on the other. These bonds are considered close relatives of ABSs, but are issued directly by the bank itself, instead of a special-purpose vehicle, and the issuer continues to be fully exposed to the credit risk and liquidity of the underlying assets, so long as they are kept on its balance sheet.
- **ABSs:** These are bonds or securities collateralized by adjusted financial assets (specific projects), generally accounts receivable. The rights to the grouping of underlying assets provide the cash flow and the guarantee to protect ABS investors.

Because of the collateralization of the assets, ABSs are considered highly suitable for obtaining financing in the capital market for assets that are too small or that lack a sufficiently high credit rating to attract direct investments.

- **Sukuk or Islamic bond:** Instruments structured to produce yields for investors similar to those of a bond, without infringing on the Islamic (Sharia law) prohibition against earning interest. As a result, Sukuk bonds offer two options: first, to participate in the ownership of assets relating to specified projects or activities; and second, to buy coupon zero bonds that are not interchangeable, but only allow for the receipt of a prefixed amount of the accrued capital at maturity --in other words, they are issued at a discount (The Economist, 2014). Green financing is in keeping with the Islamic principle of Maqasid al-Shariah that refers to the protection and preservation of a corporation's benefits and interest (IUCN NL, 2017).
- **Supranational, quasi-sovereign, agency bond (SSA):** bonds issued by international financial institutions like the World Bank and the European Investment Bank ("supranational issuers"). The characteristics of SSA bonds are similar to those of corporate bonds. Agency bonds are included in this category (those issued by export-import banks, for example), as are those of quasi-sovereign national development banks (Mexico's Nacional Financiera, S.N.C. (Nafin), for example).
- **Municipal bond:** Bonds issued by a municipal, regional, or city government.
- **Sovereign bond:** Bonds issued by a national bank or government. This is like the bond issued by France in 2016, whose proceeds are earmarked for fulfilling its obligations stemming from the Paris Climate Agreement or for protecting the biodiversity and fighting pollution.
- **Financial sector bond:** A type of corporate bond issued by a financial institution to collect capital specifically to finance "capital injections" (in other words, to grant loans) for green production activities (Rabobank or the Agricultural Bank of China, for example).

⁴ These are a class of emerging assets of companies that trade on the stock market and whose activity centers on paying back to the shareholders the cash flows produced by renewable energy assets.

Verification of Green Status: External Evaluators



financed, which rests on internationally recognized criteria, like those established by the IMCA and the CBI, which are covered in detail in this section.

3.1. International standards applied for consideration as a green bond

Different standards, indices, guides, and certifications have been created to give a greater measure of transparency and certainty regarding the sustainability of the projects backing green bond issues. These have been gaining increasing acceptance among market participants, the most noteworthy being the ICMA Green Bond Principles and the CBI Climate Bond Standards. Both standards help to determine whether a bond qualifies as being green or not. Generally speaking, green bonds must undergo verification/certification by third parties in order to establish that the proceeds are financing projects that produce environmental benefits.

In recent years, countries like China and India have established more specific regulations, but their application in most cases continues to be voluntary.

The standards widely accepted today by the different international markets that have set up a green bonds segment are stated below.

3.1.1. Green Bond Principles (GBPs)

Created in 2014 by the ICMA with the collaboration of issuers, investors, and environmental organizations, the Principles are a series of minimum commitments that companies wishing to add a green label to their issues must comply with. Voluntary, collaborative, and consultative in procedure, the GBPs recommend transparency and disclosure of information and promote integrity in the development of the green bond market, clarifying the approach to be used in issuing a green bond.

These principles are designed to orient issuers in regard to the key elements for issuing a credible green bond, and also to provide necessary information for helping investors evaluate the environmental impact of the investments they make in green bonds. It is recommended that, in order to ensure compliance with each of the principles, a review be made through an external institution with recognized expertise in environmental sustainability or other aspects of green bond issue; that an auditor verify compliance with internal standards or affirmations made by the issuer; and that a rating of the green bond be obtained from a qualified third party, such as a rating agency, among others.

(i) Use of the proceeds

The keystone of a green bond is the use of the funds obtained for green projects. As a result, these must be properly described in the Bond Issue Prospectus and mainly in the report prepared by the verifying institution. In the event that these resources are to be used to refinance projects, it is recommended that the issuer indicate the estimated proportion that is to be financed and the one to be refinanced with the bond proceeds.

(ii) Project evaluation and selection process

With some green bonds, the proceeds are not earmarked for the direct financing of a particular project. The issuer's objective is to collect funds with which to finance a portfolio of green investments not known beforehand at the time of issuance. In those cases, it is essential that the issuer of a green bond have a well-defined process monitored by a third party for selecting the projects (methodology) to be financed with the funds collected, indicating the sector or sectors that are eligible. (MEXICO2, A2G, BVL, 2017, p.7).

(iii) Management of the funds

In general, an indication of how the proceeds have been allocated and managed (governance methodology) is required. The net proceeds obtained by the green bond, or a sum equal to those resources, should be credited in, for example, a sub-account, transferred to a sub-portfolio, or be properly identified by the issuer, making the funds' traceability clear at all times and capable of demonstration through an internal formal process associated with green projects.

(iv) Report

Issuers produce information about the use of the proceeds of the issue up until their complete allocation. Inclusion of the results and the impact obtained (indicators are offered in both cases) is voluntary. Here the GBPs recommend the use of qualitative performance indicators, as well as --when applicable-- quantitative measures (energy capacity, electricity generation, decline in water use, reduction in number of cars utilized, etc.). These should be incorporated into the regular reports presented to the investors, together with detailed information about each of the projects and how they are in line with the green bond context.

The GBPs define four types of bonds (MEXICO2, A2G, BVL, 2017, p. 18).

- Balance sheet-linked green bond: A public or private institution issues bonds with recourse to the issuer's balance sheet.
- Green bond linked to a specific income: Fees, taxes, or rates that are the source of the payment are committed to pay green bond issuance liabilities.
- Project-linked Green bond: In this issue, the investor is directly exposed to the project risk, with or without potential recourse to the issuer. As a result, the proceeds are earmarked to finance the assets underlying the green project and the payback sources are the cash flows produced by the project assets and balance sheet.
- Securitized green bond: These are bonds collateralized by specific projects like covered bonds, ABSs, and other structures. Asset cash flows are the first source of payback. This is the case of a securitization operation.

3.1.2. Climate Bond Standards

The Climate Bonds Initiative (CBI)⁵ also maintains a Climate Bond Standard (CBS) and an international green bonds certification scheme. The CBS establishes clearly defined criteria for verifying a bond's certain green credentials. The CBI scheme includes a framework for the monitoring, presentation of reports, and guarantee of compliance with the CBS. This is an environmental standard, not a substitute for financial due diligence. (CBI, 2015, p. 2).

The CBS has pre- and post-issuance requirements that issuers seeking certification must comply with. In both cases, in order to obtain the "Climate Bond Certified" label, issuers must hire an independent verifier⁶ to evaluate whether a bond fulfills CBS requirements.

The CBS incorporates key elements of the GBP and, as a result, issuers whose green bonds comply with the CBS standard automatically qualify under the GBP standard. Furthermore, information about the bond is also reviewed by the Climate Bonds Standard Board. The intention is for development of that standard to lead to greater trust, quality, and transparency of the Green Bonds market. Other regional or national green bond standards are also being developed today.

In that way, certification implies revision/verification by a third party expert of the issuer's internal processes and controls against a green standard previously defined by project category. (CNV, 2018).

(i) Pre-issuance requirements

Evaluate and certify that the green project to be funded complies with the criteria established by CBI and that the issuer's internal control process is underway, including the disclosure of information for project selection and decision-making, establishment of the internal resource collection control system, the issuer's behavior of "ensuring reasonable activities" prior to the issuance, and information about the bonds and the plan for collecting funds.

(ii) Post-issuance requirements

Verify that the issuer keeps the process of choosing projects for funding (established in the previous stage) operative, together with that of allocating resources to selected projects and assets selected within the 24 months following issuance of a green bond. Insofar as the information to be handed over to the investors and the Climate Bonds Standard Secretariat is concerned, the issuer must present a report, at least once a year, listing the projects and assets to which the bond proceeds will be allocated (or reallocated), incorporating the months assigned to each, together with the expected impact of those projects.

Like the GBPs, the CBS requests that issuers include qualitative performance indicators for the projects financed, together with --when possible-- qualitative indicators with regard to the expected impact.

Comparing the two standards (Table N°1.), it can be seen that the CBS is intended for green bonds targeting low carbon emission projects, while the GBPs apply to a broader range of projects. The CBS contains a fuller list of types of low carbon emission projects, including 46 sectors of project types that could be financed from the proceeds of green bond issues.

The CBS contains both pre- and post-issuance requirements and a specific list of projects for which the proceeds can be used, establishes compulsory procedures for following-up on the use of the funds, requires that bond issuers present annual reports on the use of the funds, and recommends that the bonds be approved by an external verifier in order to prove that they comply with the standardized criteria. Once an eligible project has been identified, the CBS requires that the issuers obtain verification from third parties approved by the CBS Board.

5 Es una organización internacional creada por distintas instituciones financieras, apoyada por la Rockefeller Foundation y Bank of America, entre otros, dedicada a "promover la inversión en proyectos y activos necesarios para una rápida transición hacia una economía baja en carbono". Para lo anterior, su estrategia plantea desarrollar un mercado líquido de bonos verdes, el cual permita reducir los costos de capital para los proyectos que apoyen este objetivo, tanto en países desarrollados como emergentes.

6 Some verifiers are: CICERO, DNV-GL, Sustainalytics, Vigeo, Oekom Research, and KPMG, among others.

The database of green bond issuers is growing and becoming more diversified around the world, while the green bond regulatory frameworks are being reinforced, boosted by government policies of different countries. In that connection, the government of China

has published governmental guidelines⁷ based in large measure on international market practices in regard to the green bond principles, together with an official green classification.

France, in turn, has launched an official green public label for green

Cuadro N°1: Comparación de Estándares

	Green Bond Principles (GBP)	Climate Bonds Initiative (CBI)
Definition of Green	Provides only high-level orientation, through its categories of eligible projects, on what is called "green".	Detailed guide through a green taxonomy
Targets	Low carbon emission projects	A broader range of projects
Recognition	Reference to global self-regulation for the international green bond market	The CBI standard and taxonomy are widely considered by the official sector and the market.
	Recognized and reflected in markets that are able to regulate or are considering the possibility of regulating, for example: China, the EU, India and the ASEAN member countries.	The CBI has played a key role in advising China on the creation of its green bond market and is a fully-fledged member of the EU High-Level Expert Group on Sustainable Finance
Result	The GBPs provide high-level principles for green bond issuers centering on transparency and information.	The CBI produces (i) one standard for the certification of green bonds, (ii) a green taxonomy, and (iii) a list of green bonds
Representativity	Represents a consensual opinion based on contributions by the entire market through the green bond principles and its almost 250 members and observers.	The CBI represents, in particular, a favorable viewpoint, as reflected in the composition of its Climate Bonds Standard Board (CBSB).
Market Orientation	The Green Bond Principles are not involved in the investigation of individual green bond issues.	The CBI manages a bond certification system that can be renewed after the issuance and that uses independent "accredited verifiers."
	Offers broad market orientation through its online questions and answers.	The CBI's list of green bonds is widely used by the market and serves as a point of reference for index and database suppliers.

Source: International Capital Markets Association (ICMA), 2018.

funds that requires alignment with the green bond principles. India's Stock Exchange Council has published a list of information disclosure requirements for green bonds based on the Green Bond Principles and on international market practices. Capital market regulators in the ASEAN member countries issue green bond standards to boost sustainable investments in this type of Association bonds, in line with the Green Bonds Principles (November 2017). Japan published guidelines for green bonds in March 2017; and the European Union has created a High-Level Expert Group (HLEG) on Sustainable Finance that has formulated recommendations as a sustainable EU taxonomy and a Green Bond Standard.

2. Green Bond Indices⁸

International stock exchange indices are similar initiatives that have helped green bond issuers improve their credibility, reputation, and transparency and produce more liquidity. These are prepared by different investment banks and credit rating agencies, at times in collaboration with research institutes.

The database of green bond issuers is growing and becoming more diversified around the world, while the green bond regulatory frameworks are being reinforced, boosted by government policies of different countries.

One limitation of the standards and second opinions is that they do not make continuous supervision and verification compulsory. It is very useful for investors to have an entity that would update their certification, especially if they decide to maintain a long-term investment, irrespective of the fact that those suppliers can rule out and/or include institutions in an index. It was in 2014 that most existing indices were launched. In March, Solactive launched the first green bond index, followed in July by Standard & Poor's with its S&P Green Bond Index and its Green Bond Select Index. In October, Bank of America Merrill Lynch launched its own index and, finally, in November of that same year, the MSCI collaborated with Barclays in launching the Green Bond Index Family. (ICMA, 2017, p. 5).

The Solactive Green Bond Index includes bonds classified as "green," meaning those that collect capital for a project with specified environmental benefits, according to the CBI. Most bonds have been issued by public utility and energy companies for renewable energy projects or by supranational organizations, like the International Finance Corporation (IFC), EIB and the African Development Bank.

S&P Dow Jones Indices has adopted an integral approach in developing, in association with the Infrastructure Credit Alpha Group, two indices that cover the entire green bond spectrum. The S&P green bond index includes only bonds labelled as "green" by Thomson Reuters or the CBI. Today, it is made up of 4,349 bond issues with a total nominal value of US\$367,000 million.

The great majority of those issues have no investment grade rating. The great majority of those issues have no investment grade rating. On the other hand, S&P's Green Bond Select Index chooses only the most liquid bonds and also applies other criteria like maturities of over 2 years at the moment of issuance, the mandatory need for their classification and for their listing in a developed market, and so forth. Table N°2, summarizes the criteria that green bonds need to fulfill in order to be included on those indices. The number of components in S&P's Green Bond Select Index is far smaller: 357 (8.2% of the total bonds issued), although their market value does not differ greatly (US\$ 371,000 million) (S&P, n.d.).

In addition to those indices, The China Central Depository & Clearing Co., Ltd. (CCDC), CECEP Consulting, and the CBI developed two indices in China: the China Green Bond Index and the China Green Bond Select Index. Both of those indices have yielded higher returns with similar or less volatility than the local ChinaBond Aggregate Index and the ChinaBond Treasury Bond Aggregate Index.

China's green bond market started to take shape in 2015 after the People's Bank of China (PBOC) began to publicize the guidelines for incorporating the new class of assets into the country's financial system. The National Development and Reform Commission (NDRC) and the China Securities Regulatory Commission (CSRC) have also published a guide to the green bond standards. That approach has helped boost more regulatory advances, like the launch of reference indices that follow-up on the performance of China's green bonds (SCMP, 2018).

As regards these green bond global indices, a BIS study suggests that their profitability between July 2014 and June 2017 was similar to that of comparable global bond credit rating indices after foreign exchange exposure coverage. In fact, the global green bond reference index, the Bloomberg Barclays MSCI Green Bond Index, over the past three years tended to surpass the broad global bond reference index, the Bloomberg Barclays Global Aggregate Bond Index, after foreign exchange coverage (Table N°3). That also illustrates the importance of foreign exchange derivatives for covering green bond investments in the face of potentially adverse monetary movements.

8 Many institutional investors are forced to invest exclusively in "eligible reference" securities and for that reason the inclusion of a green bond in a reference index can be important for attracting those primary investors.

9 Solactive is a German supplier of financial indices with headquarters in Frankfurt. From its very outset, Solactive has experienced rapid growth. In 2010, there were 25 ETFs linked to indices calculated by Solactive and by January of 2018, that number had risen to over 350 ETFs.

Table N°2: Green Bond Indices

Table N°2: Green Bond Indices						
	Solactive AG	S&P		BoAML	Barclays MSCI	ChinaBond
Bloomberg Symbol	SOLGREEN	SPUSGRN	SPGRNSL	GREN	GBGL	n.a.
Index	Solactive Green Bond Index EUR USD IG*	S&P Green Bond Index	S&P Green Bond Select Index	BoAML Green Bond Index	Bloomberg, Barclays and MSCI Green Bond Index	China Green Bond Index / China Green Bond Select Index / China Climate-Aligned Bond Index
Types of Bonds	Corporate, Financial, Multilateral and development bank	Corporate, Sovereign, Multilateral and Development Bank		Includes the debt of corporate and quasi-sovereign issuers, but excludes securitized and guaranteed bonds	Securitized corporate bonds associated with the government and treasury are eligible for inclusion in the Green Bond Index.	Publicly issued debt instruments, except for ABSs
Currencies	Euros or Dollars	Issued in any country and in any currency	Issued in global markets or in G10 currencies	Qualified securities must be denominated in specific developed markets and in emerging market currencies. Those denominated in a qualified emerging market currency are settled in Euroclear. Currencies that qualify today and minimum issue size requirements are stated at the end.	Reference multicurrency that includes local currency debt markets followed by the Bloomberg Barclays Global Aggregate Index. Only US\$ and EUR-denominated Green Bond Indices are available as principal points of reference.	RMB
Criteria for being considered Green	Labelled as Green by the CBI	Belonging to S&P's Green Bond Index		The funds attracted must be earmarked to finance projects and activities that promote the climate or other environmental sustainability ends.	To be evaluated in accordance with six admissible environmental categories defined by the MSCI.	Uses at least 4 of the following standards: CBI, IMCA, National Development and Reform Commission Guide, Belonging to the Green Bond category of the China Society for Finance and Banking's Green Finance Committee.
Details	According to CBI principles	According to CBI principles		Not explicit	Bond proceeds should be used in at least one of the 6 eligible environmental categories defined by the MSCI: renewable energy, energy efficiency, pollution prevention and control, sustainable water, green buildings, and climate adaptation.	n.d.
Investment Grade	Yes	No requirements	Min. Classification as investment grade or high return (Moody's, Fitch or S&P)	Must have an investment grade rating (based on an average of Moody's, S&P and Fitch ratings)	Includes only investment grade bonds that use the average rating of Moody's, S&P and Fitch.	n.d.
Maturity	> at twelve months.	> at two years after the date of issuance		> at one month		Minimum of 1 month before maturity.
Coupon	Fixed	Fixed, Zero, Fixed to Floating, Floating and Coupon less than the principal	Fixed, Zero, Fixed to Floating and Coupon less than the principal	Programmed fixed coupon, fixed to floating and callable	Includes only fixed rate securities	n.d.
Issue amount	At least US\$ 300 million or EUR 300 million, depending upon whether the issue is in US\$ or EUR	n.d.	n.d.	Minimum issue size in local currency, in millions: (1) In a developed market: AUD 100, CAD 100, EUR 250, GBP 100, JPY 20,000, SEK 1,250 and USD 250, and (2) In an emerging market: BRL 150, CLP 50,000, CNH 500, CNY 500, COP 200,000, CZK 2,000, EGP 500, HKD 750, HUF 20,000, IDR 1,000,000, ILS 300, INR 5,000, KRW 100,000, MAD 750, MXN, 1,250, MYR 300, NGN 15,000, PEN 250, PHP 4,000, PLN 300, RON 300, RUB 3,000, SGD 100, THB 3,000, TRY 150, TWD 3,000, VND 2,000,000 and ZAR 750.	n.d.	n.d.

Source: BoAML, IMCA (2018)

n.d.: No information available. Notes: (*) Launched in 2017, the first version of this index appeared in March 2014. <https://newsroom.bankofamerica.com/press-releases/economic-and-industry-outlooks/bofa-merrill-lynch-global-research-launches-green>

3.3. Impact Verification and Report

In order to ensure adequate use of the proceeds of a green bond issue, third parties are commonly asked to verify that the issue prospectus contains the necessary elements for considering the issue to be "green."

Those verifiers include credit rating agencies and accounting firms, but independent environmental consultants and research institutes have also been brought in. Today, there is more than one rule for deciding whether a bond can be considered green.

10 Measure the US\$ returns that can be obtained by covering the foreign exchange exposure of the underlying index. The reason for that is that green bond indices differ greatly from other global bond indices as to currency composition, so that currency movements alone can have a strong impact on relative yields.

Cuadro N°3: Rendimiento Bonos Verdes Globales vs Bonos Globales (2015-2018*)

	Yield (US\$ covered, in %)			Yield (EUR covered, in %)		
	Global Green Bonds	Global Bonds	Difference	Global Green Bonds	Global Bonds	Difference
2015	1.05	1.02	0.03	0.75	0.68	0.07
2016	3.44	3.95	-0.51	1.95	2.44	-0.49
2017	3.98	3.04	0.94	1.99	1.06	0.93
2018 (*)	-0.83	-0.93	0.1	-1.22	-1.33	0.11

Notas: (*) hasta marzo.

El desempeño de los “bonos verdes globales” es medido por el Índice de bonos verdes de Bloomberg Barclays MSCI y el desempeño de los “bonos globales” es medido por el Índice de Bonos Agregados Bloomberg Barclays. **Fuente:** Allianz Global Investors (2018).

Another basic aspect for adding credibility to an issue is establishing an information model on the impact of the project financed from the proceeds of the bonds. Financial organizations like the African Development Bank, the European Investment Bank, and the World Bank have established a general framework for that purpose that proposes to enhance itself with the very feedback from the issuers and investors participating in the market. According to

that framework, the information would have to collect quantitative and qualitative data about the climatic and environmental impact of the projects that have been financed with the funds collected. (BBVA, 2017, p. 12). Verification, unlike certification, can focus on compliance with internal regulations or the issuer's declarations.



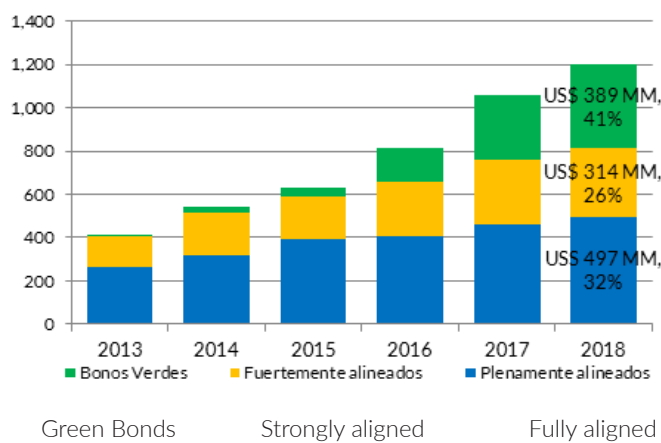


4

Climate Change-Aligned Bond Market

According to the Climate Bonds Initiative, CBI (2017), this market is composed of labelled green bonds (use of the proceeds is defined and the bonds are labelled as being green), as well as of a broader array of bonds issued by institutions that promote a low carbon economy, but that are not certified and labelled as being green. The climate change-aligned bond market shows the growth potential of green bonds, among whose principal issuers are national and sub-national governments, multilateral development banks, development banks, financial institutions, non-financial institutions, corporate enterprises and public agencies. At September 2018, the CBI had identified US\$ 1.2 trillion climate-aligned bonds in circulation , among which are fully aligned and strongly aligned issuers and US\$ 389,000 million in certified green bonds.

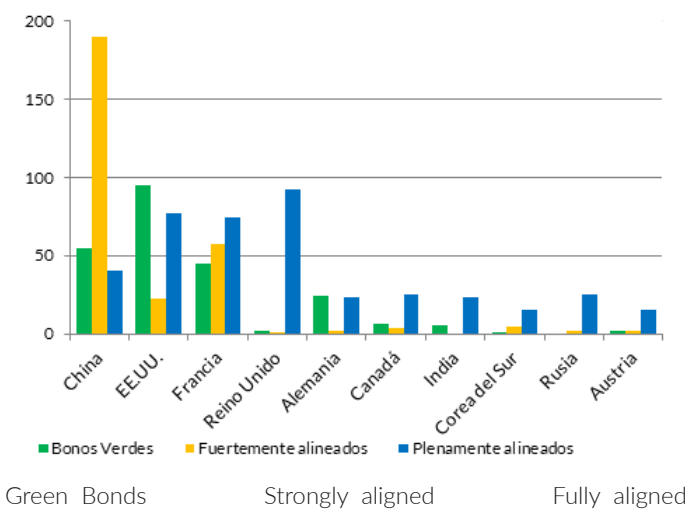
Chart N°1: Climate change-aligned Bonds (Thousands of millions of US\$ in circulation)



Source: Climate Bonds Initiative (CBI)

There are US\$ 250 billion in U.S. municipal bonds relating to climate change that although considered by the CBI to be among the universe of climate change-aligned bonds (US\$ 1.45 trillion) are not part of its general analysis. China heads the ranking of country issuers of climate-aligned bonds due, for the most part, to the large volumes of strongly aligned bonds it issues. The United Kingdom has the largest volume of fully aligned bond issues in circulation, followed by the United States and France. India, South Korea, Russia, and Austria are also among the top 10 due to their fully aligned bond issues.

Chart N°2: Principal Bond Issuer Countries (Thousands of millions of US\$)

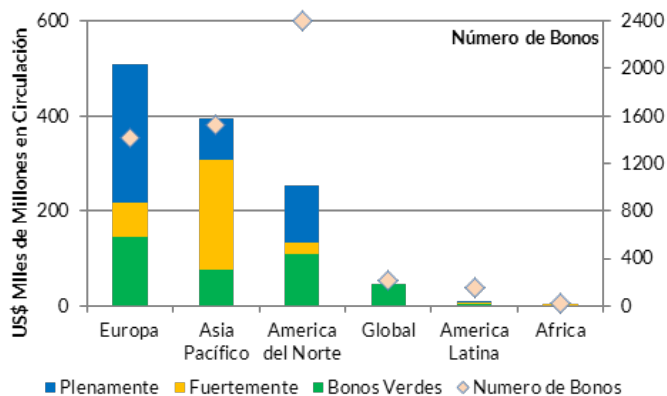


Source: Climate Bonds Initiative (CBI)

France has the largest volume of labelled green bonds (US\$ 44 billion) and of bonds issued by strongly aligned issuers (US\$ 58 billion). In the Asia-Pacific region, for its part, strongly aligned bonds are dominant. China's volumes are by far the largest in the region in both the cases of issues of strongly aligned issuers (US\$ 189 billion) and of green bonds (US\$ 55 billion), and represent 20 and 8 times those of the region's second most important market, respectively. North America ranks third, but its volume of bonds issued by fully aligned issuers is 19% greater than that of Asia-Pacific and its total number of climate change-aligned bonds reached 2,400.

The most important currencies are generally similar to the majority of currencies in the bond market, with US\$ and EUR being the most represented and amounting to 26%, followed by the Chinese yuan. It should be added that the proportion of bonds denominated in yuans has fallen to 22%, in comparison with the 32% cited in the CBI 2017 report, because now the bond universe is larger and includes new green bonds. The Japanese yen, for its part, continues to be underrepresented in comparison with its presence in the global bond market.

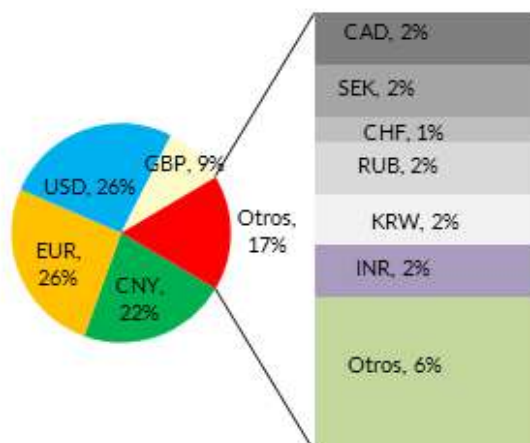
11 The global figure excludes unlabeled municipal bonds as green bonds of fully aligned United States issuers.
12 Fully climate-aligned issuers are bond issuers that derive over 95% of their income from climate-aligned assets and possess green lines of business that are also known as being fully aligned.
13 Strongly climate-aligned issuers are bond issuers that derive between 75%-95% of their income from climate-related assets and green lines of business. It should be added that a prorated sum corresponding to green income is analyzed, instead of the total value in circulation.

Chart N°3: Bond Circulation by Region


In Thousands of Millions of US\$ in circulation
Fully Strongly Green Bonds Number of Bonds

Source: Climate Bonds Initiative (CBI)

As regards the universe of bonds available for the majority of investors, according to the CBI (2018), almost one-quarter of the universe is rated AAA by international and/or local credit rating agencies and 84% of the US\$ 1,200 billion universe is investment grade. Only 5% of the bonds do not have an investment grade and the rest have not been rated.

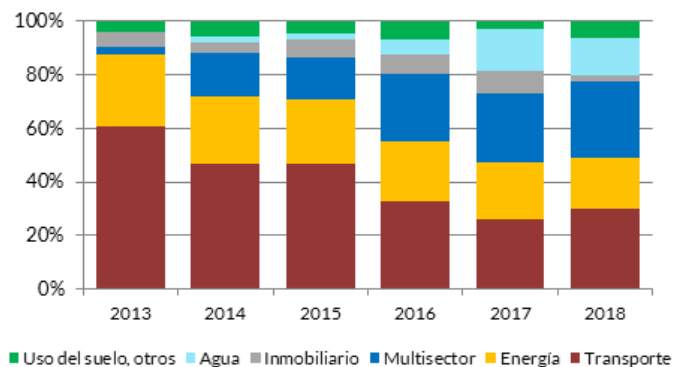
Chart N°4: Issuance by Type of Currency


Notes: USD: U.S. dollar. CNY: Chinese yuan. SEK: Swedish krona. CHF: Swiss franc. GBP: Great Britain pound sterling. CAD: Canadian dollar. INR: Indian rupee. KRW: South Korean won. RUB: Russian ruble.

Insofar as terms are concerned, most fully aligned issues have terms of over 10 years, with the average maturity of climate change-aligned bonds being 11.7 years. That is similar to the global average term for corporate bonds of a little over 11 years.

Longer terms are common in railway enterprises backed by the state or by installations with long-term assets that possess the necessary credit rating to issue debt at longer terms. As a result, bonds in circulation of fully aligned issuers tend to have a longer life.

They represent 53% of the aligned bonds in circulation with maturities of over 20 years. Even so, most labelled green bonds have terms of less than 10 years. In fact, more than one-half of the green bonds in circulation have maturities of less than 5 years.

Chart N°5: Sectoral Composition of Climate Change-related Bonds (%)


Soil use, miscellaneous -Water -Real estat -Multisector -Energy -Transport

Source: Climate Bonds Initiative (CBI)

Transportation continues to dominate the universe of climate change-aligned bonds at the sectoral level, with US\$ 532,000 million in circulation, consisting for the most part of railroad infrastructure. However, that participation in the climate-aligned universe is decreasing. According to CBI figures, it had dropped 30% at the first semester of 2018, from its level of 61% in 2013. This can be attributed as much to market trends, as to the increase in issuance of multisectoral green bonds and those associated with the real estate sector.

Global megacities are spurring the growth of urban transportation infrastructure, which accounts for close to 12% (US\$64,000 million) of the sector. The Parisian RATP group, Transport for London, and New York's MTA are the 3 largest issuers. The Lima Metro is one of the few Latin American issuers.

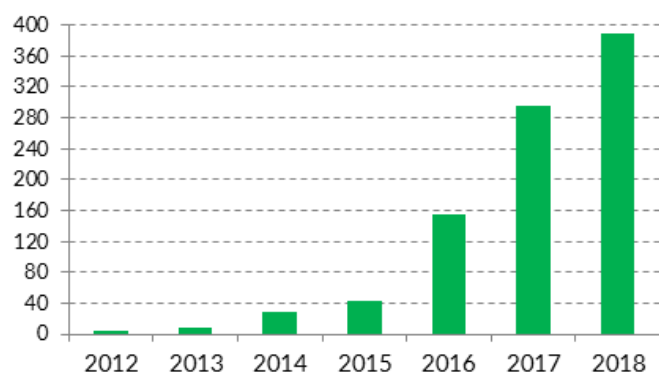
5

Current Situation of the Global Green Bond Market



Launched by multilateral development banks like the World Bank and the European Investment Bank (BEI), the green bond market eleven years after the issuance of the first "green bond"-labelled issue, has grown significantly not only in volume, but also in terms of scope, average issue size, diversity of issuers, and investors, etc. According to the CBI, the green bonds in circulation in 2018 represented some 32% of the universe of climate change-aligned bonds and reached a level of some US\$ 389,000 million,¹⁴ 32% more than the previous year (Chart N°6).

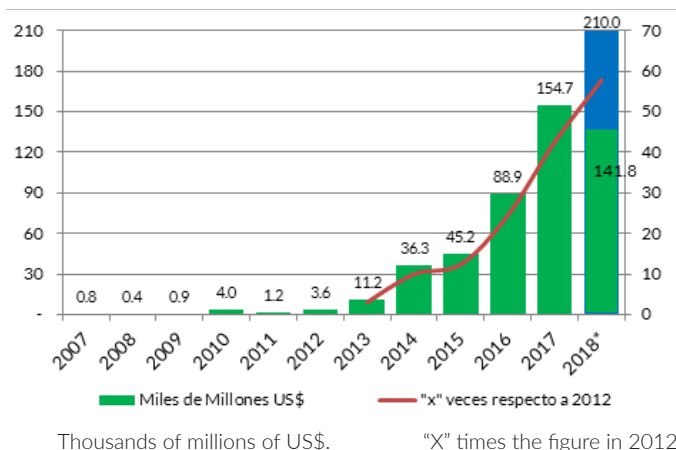
**Chart N°6: Green Bonds in Circulation
(US\$ Thousands of Millions)**



Source: Climate Bonds Initiative (CBI)

Although multilateral development banks were the initial pioneers in green bond issuance, at the close of 2013, they were joined by new institutions like governments and local agencies, public utility companies, commercial banks and other corporate issuers, such as Bank of America Merrill Lynch (BoAML), which was the first commercial bank to issue a green bond. The US\$ 500 million bond backed the financing of renewable and energy efficiency projects, including the replacement of more than 140,000 common lamps with LED lighting in Los Angeles, California, in the U.S.¹⁵ In November of that same year, France's electric power generation and distribution Company (EDF) opened the green bond market for large, non-financial enterprises with its US\$ 1,700 million transaction at 7.5 years.

**Chart N°7: Green Bonds Issued Annually
(in thousands of millions of US\$)**



Source: Climate Bonds Initiative (CBI)
In-house preparation
(*) Projected

The innovation did not stop at that. The Unilever consumer goods company demonstrated that an enterprise does not need to operate in the renewable energy or financial sector in order to be able to issue a green bond (corporate debt bond).

Unilever issued a four-year bond for 250 million pounds sterling (US\$ 404 million) with a clearly defined criterion on greenhouse gas emissions, water use and waste disposal for investment projects backed by the bond proceeds. The market has also seen securities collateralized by assets (ABSs), like that which guaranteed the hybrid Toyota cars, or the first solar securitization for U.S. energy services supplier SolarCity¹⁶ (now Tesla), which was collateralized by a portfolio of solar panels (Linhardt, 2014).

¹⁴ Includes municipal bonds labeled as green bonds and issued by fully aligned United States issuers. That figure was mobilized by 52 fully or strongly aligned green bond issuers and 446 issuers of the remaining green bonds, less than 75% of whose income came from "green" lines of business and which, for that reason, were not considered fully aligned issuers. It is also important to point out that the calculation of these figures excludes bond flows that had already reached maturity.

¹⁵ LED technology permits savings of between 40% and 60% in energy costs and the new lamps last almost twice as long as the existing ones: if these need replacement every four or five years, the service life of LED lights is as long as 10 to 12 years.

Green bonds are expected to continue expanding with the issuance of sovereign green bonds, green city and municipality bonds, principally to finance renewable and sustainable energy infrastructure projects. In December 2016, Poland was the first sovereign state to issue green bonds; it was followed by France, Fiji, Nigeria, Belgium, and Lithuania. Indonesia is the most recent issuer of sovereign green debt with its US\$ 1,250 million bond offering launched in February 2018 (Santiago J. , 2018).

Green bonds are expected to continue expanding with the issuance of sovereign green bonds, green city and municipality bonds, principally to finance renewable and sustainable energy infrastructure projects.

Municipal green bonds were issued in the U.S. to help cities and local communities fight climate change and promote a transition to renewable energy in line with international practices and standards. Municipal green bonds finance sustainable water management, pollution prevention, the spread of ecological buildings, and conservation of the local aquatic biodiversity.

Mexico City issued a \$ 1,000 million peso (some US\$ 54 million) green bond, the first to be launched in the region by a local government. Its purpose was to finance and refinance low carbon urban transportation projects, energy efficiency, and water infrastructure.

In addition to those factors, there are other potential reasons that have favored the growth of green bonds, like: (i) the adherence of investors that control US\$ 60 billion to the “Principles for responsible investment,” an initiative supported by the United Nations, that they commit to incorporating environmental, social and governance factors in their investment decisions. That has increased the demand for green bonds, and some institutional investors have created dedicated funds, and (ii) green bonds have encouraged the demand for a broader array of investors that most probably had not invested previously in debt capital markets or had had only a very small share. (Hayday, 2018).

Despite this huge growth, green bonds, when compared with the global debt market, continue to constitute only a small fraction approaching 1%; this is indicative of the market's enormous potential for growth (Chiang, 2017, p. 3). In order to raise the volume and scalability needed by the green bond market and thereby attract a broad investor base, it is crucial to find new investment mechanisms. It is maintained that in this context, it is imperative to promote trust in this market through a careful balancing of market risk and liquidity, in addition to improving returns.



A low-angle, upward-looking photograph of modern skyscrapers with glass facades. The buildings are filled with reflections of green trees and a blue sky with white clouds. The perspective creates a sense of height and architectural grandeur.

6

Multilateral Development Banks and Development Finance Institutions:

Mobilizing Private Sector Climate Financing

MULTILATERAL DEVELOPMENT BANKS AND DEVELOPMENT FINANCE INSTITUTIONS: MOBILIZING PRIVATE SECTOR CLIMATE FINANCING

The bond market has experienced fast-paced growth in recent years, which can be attributed, in principle, to the greater consciousness and consensus created among countries in coping with the multiple problems created by climate growth and the associated financial costs. Countries are more aware that those environmental problems are growing increasingly frequent in society and that, as a result, their solution requires joint global action. It is for that reason that in 2015, after multiple negotiations, 195 countries came together in a historic pact, "The Paris Agreement"¹⁷ to fight climate change and boost measures and investments aimed at a resilient and sustainable future low in carbon emissions.

However, implementing strategies to permit the existence of low carbon economies calls for financial resources in amounts that public funds are admittedly unable to supply and that would be impossible to cover through taxes or borrowing, even in a developed country.

According to estimates of the UNEP Finance Initiative, the transition to low-carbon climate-resilient economies would require investments totaling at least US\$ 60 trillion between now and 2050. That sum includes approximately US\$ 35 trillion to decarbonize the world energy supply through renewable energy and energy efficiency; US\$ 15 trillion to adapt the existing infrastructure to changing meteorological conditions; and US\$ 2 trillion to reorganize global land use for the purpose of satisfying growing demands for agricultural products and putting a halt to tropical deforestation. (UNEP FI, 2018).

Along this same line, according to the Government Accountability Office (federal control body) of the United States, climate change has cost taxpayers over US\$ 350,000 million over the past decade. By 2050, that figure will amount to US\$ 35,000 million per year. These costs include clean-up and assistance in the cases of floods and storms, which are expected to increase in frequency as temperatures rise GAO, 2017, p. 1).

Given that volume of resources, the involvement of the private sector is necessary and, above all, the international financial system, in order to face up to the need for climate action and sustainable development.

At this juncture, the mobilization of private capital is highly important, as is taking advantage of the leveraging potential of public finances. The latter encompasses from providing financial assistance through financing and incentives, to helping create new sustainable financial markets and putting new sustainability standards and practices into effect (UNEP FI, 2016, p. 15). The combination of public and private financing is seen as being beneficial for both investors and global development.

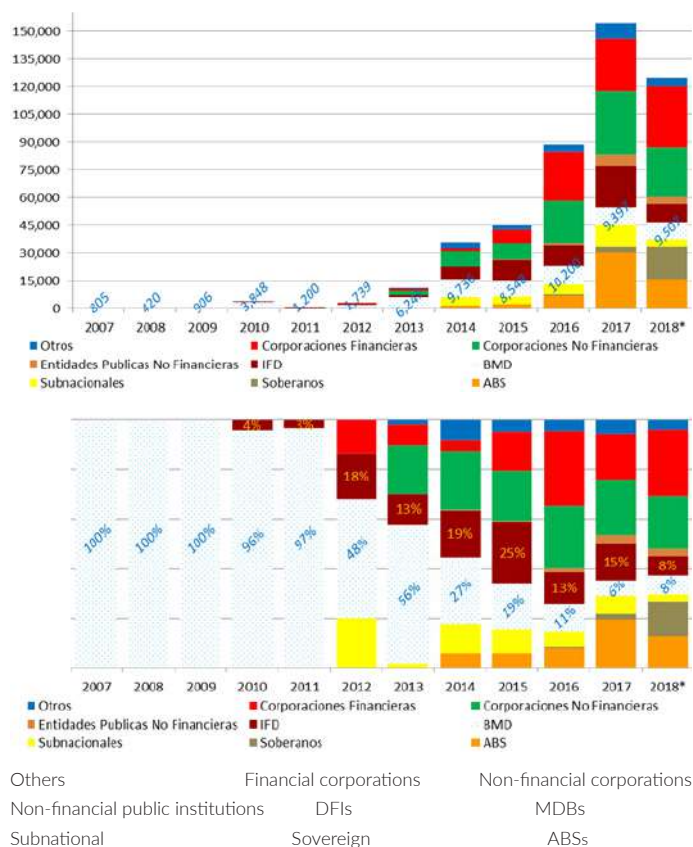
In that respect, DFIs can take advantage of their experience in creating new financial markets and help to attract more private sector financing for the Paris Agreement objectives. The development financing institutions have become valuable public policy instruments for prompting the private sector to invest in mitigation efforts and have created a growing number of financial instruments specialized in that undertaking. Those instruments need further improvement, with special provisions adapted to the situations in the countries, particularly those in our region, where many are especially vulnerable to climatic conditions.

Some of the clearest interventions by multilateral development banks (MDBs) in this area have been the issuance of green bonds. Since the first bond issuances by the European Investment Bank (EIB) and the World Bank over a decade ago, the volume of bond issues has grown substantially. Although over US\$ 3,000 million more were issued globally than in 2012, at October 2018 the figure had risen to US\$ 142,000 million.

While MDBs pioneered green bond issuance, corporate issuance has been increasing rapidly. Following the issuance of the first green bonds in 2007 and the bond issuances of various national and subnational governments and national DFIs, the market has been evolving strongly. Over the period 2013-2018, the types of issuers have increased significantly. Growing numbers of commercial banks, non-banking financial institutions (like trusts and vehicles for investment in real estate income) and non-financial corporations (connected with production and the provision of services relating to energy generation, transportation, logistics, and waste management, among others) that represent more than 50% of total bond issuance have become involved. At October 2018, MDBs and national DFIs accounted for 24.4% of the market for bonds in circulation (Chart N°8).

17 The major objective of the Agreement is for all signers to reduce their greenhouse gas emissions so that temperatures do not rise above two degrees over preindustrial levels by the end of this century.

Chart N°8: Green Bonds Issued, by Type of Issuer: 2007-2018*
(In thousands of millions of US\$ and %)

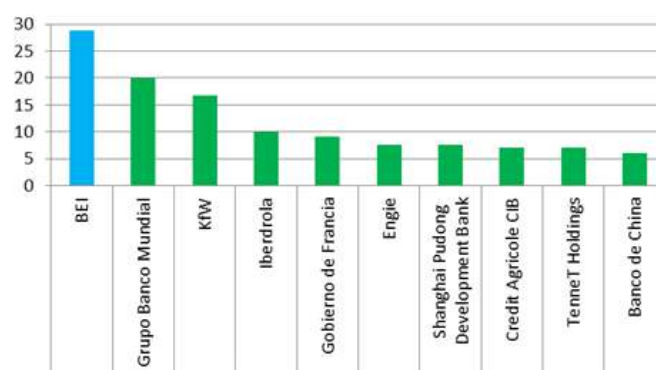


Source: Climate Bonds Initiative (CBI).
In-house preparation
(*) At October 2018

The European Investment Bank has been the largest issuer of green bonds with 75 bond issues, bringing its current balance up to US\$ 26,750 million. The World Bank Group has 219 issues with approximately US\$ 9,880 million in green bonds in circulation; a Group institution, the International Bank for Reconstruction and Development (IBRD), alone, made 159 bond issues, with the total amount issued amounting to US\$ 11.4 billion (see Chart N°9). The German KfW Development Bank, for its part, ranks third as one of the world's largest issuers of bonds in the capital markets, with an annual volume of financing of between US\$ 70,000 and US\$ 90,000 million. KfW has brought out 20 bond issues for an amount approximating US\$ 16,800 million in outstanding bonds today. After two green bond issues totaling US\$ 1,500 million (the largest green bond issues in Germany in 2014 and 2015), it issued its largest green bond for a value of over US\$ 2,000 million in 2017. The proceeds of KfW's bonds are used mainly to finance renewable energy projects and, in its case, its total green bond issues of 2016 have helped to avoid approximately 2.2 million tons of greenhouse gas emissions (Weber, 2017).

Meanwhile, in Asia, the Asian Development Bank (ADB) launched its first green bond in March 2015. This was a US\$ 500 million, 10-year issue earmarked to channel more investor funds to ADB projects promoting low-carbon, climate-resistant economic growth and development in emerging Asia. That same year, India's Exim-bank became the first green bond issuer in the Indian banking sector (Global Capital, 2015).

Chart N°9: Principal Green Bond Issuers: 2007-2018
(In thousands of millions of US\$)



-EIB -World Bank Group -KfW -Iberdrola -Government of France
-Energie -Shanghai Pudong Development Bank -Credit Agricole CIB
-TenneT Holdings -People's Bank of China

Source: Climate Bonds Initiative (CBI)
Prepared in-house
(*) Excluding Fannie Mae

6.1. Green Bond Issuance by Latin American and Caribbean Development Financing Institutions takes off

Green bond issuance in the region is still very low and represented only 1.87% of total bond issuance at October 2018. Green bonds are ceasing to be viewed as innovative instruments in the regional market, inasmuch as they are in greater demand by investors --in fact, to such a point that issues have been placed in domestic markets and in local currencies. The inclination toward larger issuances of these securities is not only to be found in corporate initiatives. MDBs and DFIs in general have paid special attention to green bond initiatives and the region is no exception. In 2018, the region's DFIs placed almost 40% of the total issuance of the various Latin American enterprises, which is equivalent to US\$ 454 million collected to benefit sustainable projects.

In recent years, bonds issued in the region have been earmarked largely to finance energy, transportation, agricultural and forestry-related projects and, in lesser degree, a series of sectors like water, real estate and biodiversity, among others. Most of the bond issues come from the public sector and supranational organizations. We will comment on some of them below.

Mexico heads the list of green bond issuer countries in the region. In 2015, Nacional Financiera was the first DFI to issue a green bond. Demand for the issue reached US\$ 2,500 million, five times the value to be awarded. The institution was able to place US\$ 500 million. These resources have financed nine wind power projects in the states of Oaxaca, Nuevo León and Baja California, where several private firms began to invest in generating clean energy.

The bonds have international Climate Bond Certification issued by the Climate Bond Standard Board and were included in some of the most important international reference indices, both for green bonds and emerging markets. In as early as 2016, it brought out a 2,000 million peso issue on the Mexican Stock Exchange (BMV) equivalent to US\$ 110 million, whose proceeds were earmarked to finance four projects: two mini hydroelectric power plants and two wind farms.

Banco Nacional de Obras y Servicios Públicos (Banobras) was another Mexican green bond issuer that, at the end of August 2017, issued \$ 4,000 million (US\$ 225 million) in bonds. That placement is part of a \$10,000 million peso sustainable bond issue, for which the total demand reached \$23,583 million pesos, or 3.4 times the target figure. The bond proceeds are earmarked to finance seven wind farms, one sustainable transportation project, one mini hydroelectric power plant and other projects concerned with energy efficiency granted to 26 municipalities, three wastewater treatment plants and three water supply systems.

The Banobras bond issue incorporates the sustainable bond principles established by the International Capital Markets Association (ICMA) (The Economist, 2017). In February 2018, it brought out its second green bond issue for \$ 2,560 million pesos (US\$ 137.3 million), whose proceeds will be earmarked for the same target public as that of the first bond issue.

To close the bond issuances in Mexico, los Fideicomisos Instituidos en Relación con la Agricultura (FIRA) – Banco de México placed the first green bond for \$ 2,500 million pesos (some US\$ 130 million) targeting the rural sector.

The proceeds will be earmarked to implement a portfolio of 506 projects that will operate in central, northern and northwestern Mexico. A breakdown of those projects reveals that 73 are hothouses and the remaining 433 have to do with efficient water use.

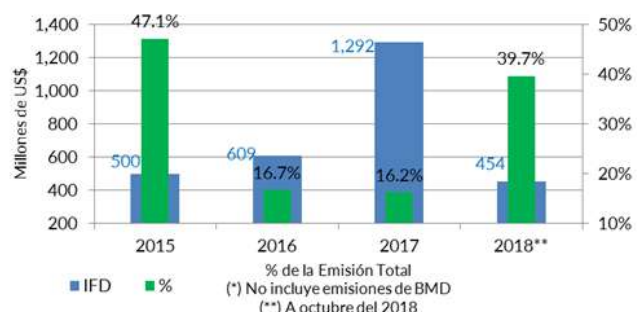
By market size, Brazil follows, where, in May 2017, Banco Nacional de Desenvolvimento Econômico e Social (BNDES) placed US\$ 1,000 million in green bonds in the foreign market. The demand for those securities was five times the target figure and involved the participation of over 370 investors in the price formation process of the bond, which will mature in 2024. The operation, coordinated by Bank of America Merrill Lynch, Crédit Agricole and JP Morgan, resulted in a 4.8% annual rate of return for the investor, representing a premium of 269.3 basic points over U.S. Treasury bonds and about 60 basic points over the Federative Republic of Brazil's external bonds. The proceeds will be used to finance environmentally sustainable projects --wind or solar energy generation projects that are new or are already in the Bank's portfolio--, certified by a verification company specialized in the subject area (BNDES, 2017).

Banco de Comercio Exterior de Colombia (Bancóldex) issued \$ 200,000 million pesos (US\$ 66.5 million) in green bonds, achieving a demand of \$ 0.5 billion, 2.5 times the offered sum. This is the third institution to offer these securities in the country¹⁹, but the first to do so on the public stock exchange. With the bond proceeds, Bancoldex granted loans totaling over \$ 328 billion pesos (some US\$ 107 million) to 158 companies located in Bogota and 22 of Colombia's departments.

An additional 273 projects were financed, with some companies carrying out more than one project. Of the total companies involved, 33% are MSMEs, for which the average disbursement was \$ 1,868 million pesos (US\$ 608 thousand), with an average operational term of 5.7 years.

According to the institution's report, the financed projects produced a positive environmental impact: "22,333 tons of CO2 are not being emitted every year, 360 tons of coal are being replaced by other fuel sources every year, 788,277 m3 of natural gas are not being used every year as fuel, and 99.8 GWh of electricity are being generated by renewable sources every year. (Bancoldex, 2018).

18 The coupon interest rate was 190 basic points above that of U.S. 5-year Treasury notes.
19 Other issuers are Davivienda and Bancolombia.

Chart N°10: Latin American and Caribbean Development Financing Institution Green Bond Issuance

Millions of U.S. dollars
DFIs

% of the Total Issued
(*) Does not include MDB issuance
(**) At October 2018

**Source: Climate Bonds Initiative (CBI).
In-house preparation**

To conclude, we have the case of Central America, where the Central American Bank for Economic Integration (CABEI) launched its first green bond in 2016: for a 4-year term and denominated in South African rands (ZAR), thus adding a new currency to the CABEI's funding activities (number nineteen), for a total of ZAR 1,032 million (equivalent to US\$ 72 million). With that opera-

tion, the CABEI became the primary Central American issuer of Green Bonds in Japan. This issue is part of a series of actions the Bank is taking to honor CABEI's Declaration of Commitment to Promote and Support Financing Actions for the Adaptation and Mitigation of Climate Change made by the Bank's Assembly of Governors in April 2016 (BCIE, 2016) (CABEI, 2016).

Banco Nacional de Costa Rica (BNCR), for its part, made a five-year US\$ 500 million green bond placement in April of that same year. According to the bank, the demand for those bonds was five times the issue size –in other words, petitions were received to purchase a total of US\$ 2,500 million worth and purchase orders were placed by investors of Europe, the United States, Latin America, Asia-Pacific and the Middle East (BNCR, 2016).

To conclude, in December 2018, Argentina's Banco de Inversión y Comercio Exterior (BICE) placed two issues under an agreement with BID Invest, the private sector investment branch of the IDB (Inter-American Development Bank). Each of those bond issues was for US\$30 million and had a 5-year maturity. The proceeds will be earmarked to finance energy efficiency and renewable energy projects, enterprises led by women, operations that assist in the development of northern Argentina, and the issuance of SME negotiable obligations (Infobae, 2018).

Table N°4: Latin American and Caribbean DFI Green Bond Issuance (*) (En miles de millones de US\$ y %)

Country	Issuer	Certified by the CBI	Amount Issued (in Millions)	Currency	Issuance Date	Maturity Date	External Review	Issue in millions of US\$
Argentina	Banco de Inversión y Comercio Exterior S.A. (BICE)		30	US\$	Dec-18	Dec-23		30
Argentina	Banco de Inversión y Comercio Exterior S.A. (BICE)		30	US\$	Dec-18	Dec-23		30
Mexico	Fideicomisos Instituidos en Relación con la Agricultura (FIRA)	Sustainalytics	2,500	MEX	Oct-18	Oct-21		130
Mexico	Banco Nacional de Obras y Servicio Públicos S.N.C. (Banobras)		2,560	MEX	Feb-18	Feb-25	Sustainalytics	137.3
Mexico	Banco Nacional de Obras y Servicio Públicos S.N.C. (Banobras)		4,000	MEX	Aug-17	Aug-24	Sustainalytics	225
Colombia	Banco de Comercio Exterior de Colombia (Bancoldex)		200,000	COP	Aug-17	Aug-22	Sustainalytics	66.5
Brazil	Banco Nacional de Desenvolvimento Econômico e Social (BNDES)		1,000	US\$	May-17	May-24	Sustainalytics	1000
Mexico	Nacional Financiera S.N.C. (NAFIN)		2,000	MEX	Sept-16	Sept-23	Sustainalytics	108.6
Supranational	Central American Bank for Economic Integration (CABEI)		1,032	ZAR	Aug-16	Aug-20		71.6
Costa Rica	Banco Nacional de Costa Rica (BNCR)		500	US\$	Apr-16	Apr-21	Moody's	500
Mexico	Nacional Financiera S.N.C. (NAFIN)	Sustainalytics	500	US\$	Nov-15	Nov-20	Sustainalytics	500

Source: Climate Bonds Initiative (CBI), Banobras, BICE

6.2. Importance of the Multilateral Development Banks

The expansion of the green bond market would not have been possible without the assistance of the multilateral development banks, which pioneered the issuance of this type of bonds. In that regard, the role performed by the EIB with its climatically responsible bonds and green bonds issued, is noteworthy. Ten years after its first issue, it launched a 30-year bond with a value of €1,000 million. This, once again, marked a milestone, for it was the longest-term green bond ever to be issued by a supranational, sovereign and agency (SSA) lender.

At October 2018, the EIB was the largest issuer of green bonds, having launched 75 issues, bringing the Bank's outstanding balance at that date up to US\$ 26,750 million. Furthermore, in March 2018, it launched its Sustainability Awareness Bonds program. The €500 million transaction represents the first EIB financing earmarked to support "projects of great impact," beginning with water and sanitation projects.

Today, the EIB is the world's largest financier of water projects, inasmuch as it has provided over €66,000 million to over 1,400 water companies. The Bank operates actively in some 160 countries. It is the largest multilateral financier of climate-related investments in the world, with US\$ 100,000 million committed to climate action over the five-year period until 2020, in support of the Paris Agreement.

The EIB has committed at least 25% of its investments to climate change mitigation and adaptation, in the expectation of reaching 35% in the developing countries by 2020. With €19,400 million dedicated to climate action in 2017, the EIB surpassed its target for the eighth straight year (EIB, 2018).

The IFC, for its part, has been issuing green bonds since 2010; its largest issue collected US\$ 1,000 million and it obtained roughly US\$ 142 million per issue on average. As early as April 2017, IFC and Amundi,²⁰ a leading European assets administrator, agreed to create the largest green bond fund dedicated to the emerging markets, called Green Cornerstone Bond Fund. The US\$ 2,000 million initiative aims to deepen local capital markets and encourage financial institutions of those countries to issue green bonds.

The two institutions will work with local finance institutions, through an investment support facility, to build up their capacity to issue green bonds by providing training and sharing the best international practices with them. The purpose of the fund is to invest all of its resources in the purchase of seven-year green bonds issued by banks in Africa, Asia, the Middle East, Latin America, Eastern Europe and Central Asia.

At October 2018, the IFC had issued 60 green bonds, for which it collected more than US\$ 8,500 million in twelve different currencies.

Other multilateral development banks that have also issued green bonds are the African Development Bank (AfDB), the Asian Development Bank (ADB), and the European Bank for Reconstruction and Development (EBRD). In Africa, the AfDB has been active in the green bond market since 2010, with 16 issues that have enabled it to collect around US\$ 1.9 billion. In 2013, the Bank established a green bond issuance system to fund its commitments to climate change mitigation and adaptation, under a 10-year strategy that seeks to promote inclusive and sustainable growth of the African countries and their transition toward "green growth."

Impact-wise, AfDB's green bonds supported 24 projects in 14 countries that are expected to lead to a reduction of about 43 million tons of CO₂ in greenhouse gas emissions (AfDB, 2017, p. 5). Up until a short time ago, the AfDB was probably the only institution to promote green bonds in the African continent, but now governments and cities have begun to identify green bonds as a source of financing, with Nigeria and Morocco each issuing green bonds at the sovereign level.

The cities of Capetown and Johannesburg have each also issued green bonds, the proceeds of which were used for local climate change mitigation and adaptation projects that serve as examples for other municipalities. These cities have been favored by having the most developed bond market in Africa. The Johannesburg Stock Exchange launched its Green Bonds Segment and Green Listing Rules in October 2017 in order to promote the largest green bond issue in the area.

²⁰ Amundi (established by Credit Agricole) has over 100 million clients, 1,000 institutional clients and 1,000 distributors in more than 30 countries. It designs innovative high-yield products and services for clients of this kind and adapts them to the needs and risk profiles of those clients.

²¹ The GCF was established in 2010 under the United Nations Framework Convention on Climate Change (UNFCCC) to serve as a central investment vehicle for financing climate change.

The ADB began to channel resources into climate change mitigation projects in 2010 by issuing thematic bonds, called water bonds and clean energy bonds, being the first multilateral development bank to be accredited by the Green Climate Fund (GCF).²¹

When the Bank launched its green bond issuance program in March 2015, its accrued thematic bond issues totaled over US\$ 2 billion. That same year, the Bank committed to double its financing of climate change from its own resources to a level of US\$ 6 billion a year by 2020, and even to go so far as to play a catalytic role in private sector financing. Of that sum, US\$ 4 billion were used for mitigation projects with advanced renewable energy, energy efficiency and sustainable transportation technologies, while US\$ 2 billion were allocated to adaptation through more resistant infrastructure, more intelligent agriculture from the climatic viewpoint, and better preparation for climate-engendered disasters.

Another financial institution that is a leader in the financing of renewable energy and energy efficiency in its area of influence (Eastern Europe, Central Asia, and the Southern and Eastern Mediterranean) is the European Bank for Reconstruction and Development (EBRD). Since 2010, the Bank has issued more than 70 green bonds totaling about US\$ 3.1 billion. These bonds have made it possible to finance a portfolio of green projects that includes over 380 projects from Morocco to Mongolia and from Estonia to Egypt. Turkey accounts for 34% of this green portfolio, whose value borders on US\$ 4.9 billion, and Poland for 15%. As early as March 2018, the Bank had completed a US\$ 68.5 million investment in Amundi Planet - Emerging Green One. At the same time, the EBRD put a technical cooperation program dedicated to green bonds into

effect in all of its regions, in order to support the increased issuance of those instruments. (Bennett, 2018).

The Nordic-Baltic countries²² have issued green bonds since 2010 through the Nordic Investment Bank (NIB) under its own NIB Environmental Bonds (NEB) brand, in an amount in excess of US\$ 4,000 million in NIB transactions. The proceeds of these bonds are used to finance renewable energy, energy efficiency and public transportation solutions and to reduce emissions into the atmosphere or water. (NIB, 2013).

The NIB is the largest Nordic issuer of green bonds and at 2018 had financed over 60 NEB projects. The Bank considers that all of the projects financed with NEBs will help overall to avoid the emission of approximately 950,000 tons of CO₂. The NIB's Sustainability and Mandate Unit uses its mandate rating framework to evaluate the impact of the projects. In order to be eligible to receive the proceeds of green bonds, a project's mandate rating must be good or excellent.

MDBs generally make their debt decisions on the basis of a renewable horizon of several years. In order to remain in keeping with the long terms of the financings, MDB medium- and long-term bonds dominate the market. In fiscal 2017, the International Bank for Reconstruction and Development (IBRD) raised its net short-term debt by US\$ 7,000 million and issued a total US\$ 56,000 million in medium- and long-term bonds.

- Despite the strong growth of green bonds, the liquidity of this market is a pressing problem, above all in emerging

²² The Nordic countries, including the supranational NIB, account for 6.7% of accrued global green bond issuance and 18.5% of European issuance.

²³ By volume of assets.

markets. Although there have been some US\$ 389,000 million bonds in circulation since the green bond market was launched over a decade ago, according to CBI that is equivalent to only a small fraction of annual fixed income instruments issued by the world's governments and enterprises. At this moment, demand outpaces supply, meaning that there is an obvious need to broaden the issuer base in order to satisfy the excess demand.

- Multilateral development banks have been promoting development of the green bond market from the very beginning, as can be seen throughout this document. From the first issue in 2007 and up until 2014, multilateral development banks like the World Bank, the European Investment Bank and the International Finance Corporation were responsible for the great majority of green bond issuance. Since then, however, the private sector for the most part has burst upon the scene with an explosion of corporate bonds, securities collateralized by assets and other hybrid instruments. In addition, the green bonds issued by national development finance institutions (DFIs) and mainly national and local governments represent a growing percentage of the total market. MDB and DFI issuance has moved from accounting for almost all issuance up until 2011 to representing 24.4% of the green bonds in circulation at the world level in October 2018, the MDBs with US\$ 48 billion and the DFIs with US\$ 60.4 billion.

- National development finance institutions can help attract more funds from the private sector to meet the Paris Agreement, based on the experience they have gained in creating new markets in the financial system. DFIs have become valuable public policy instruments for encouraging the private sector to invest in mitigation measures and have created a growing number of financial instruments specialized along those lines. In that sense, those institutions can build national capacities to promote the entry into international bond markets and, above all, the development of local currency green bond markets. In the case of Latin America, DFIs had placed almost 40% of the green bond issues in the region at October 2018.

- Over the past three years, national development finance institutions have placed various green bonds. These have been issued mainly by larger-sized institutions within the universe of DFIs, such being Nafin, Bndes, Banobras, Fira, BNCR, Bice and Bancoldex, whose bond issues have maturities of between 3 and 7 years. Only three of the issues in U.S. dollars have amounted to over US\$ 300 million. Mexican DFIs are the foremost green bond issuers with proceeds of US\$ 1,100 million.

- To conclude, although green bonds can obtain financing for the projects, of themselves they will not produce a portfolio of financeable projects. It is the governments that must advance policies to promote low carbon emission- and climate-resilient investments, while development finance institutions are the instrument for achieving those public policy objectives. Some of the actions that form part of this DFI effort at participation have been the financing of long-term investments and the emergence of guarantee instruments with which to sustain the financing flows.

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