

MOBILIZING PRIVATE CLIMATE FINANCE—GREEN BONDS AND BEYOND

The international market for green bonds—securities that raise capital for specific climate or environmental sustainability purposes—has experienced tremendous growth and could reach an annual market value of over \$100 billion dollars this year. As part of this growth, new market tools, skills, and capital have been introduced into the green bond market to reduce greenhouse gas emissions and more broadly address the problem of climate change.

The first green bond was issued in 2007 by the European Investment Bank, under the label Climate Awareness Bond, as a structured bond with proceeds dedicated to renewable energy and energy efficiency projects. The World Bank issued its first green bond in 2008, a SEK 2.3 billion bond with a maturity of six years for a group of Scandinavian investors. And in March 2013 IFC issued a \$1 billion benchmarked bond.

Multilateral Development Banks were the sole issuers of green bonds until 2012 when the first corporate green bonds were issued. Since then the market has exploded, from nearly \$10 billion in 2013 to over \$40 billion in 2015, and is projected to exceed \$100 billion in 2016.¹ The emergence of green bonds has been recognized by the United Nations as “one of the most significant developments in the financing of low-carbon, climate-resilient investment opportunities.”² And a G20 communique in September 2016 called for development of and cross-border investment in local green bond markets.³

The rapid growth of the international green bond market is demonstrating how capital market mechanisms can enlist private capital to address global climate change and channel private sector funds to developed and emerging economies.

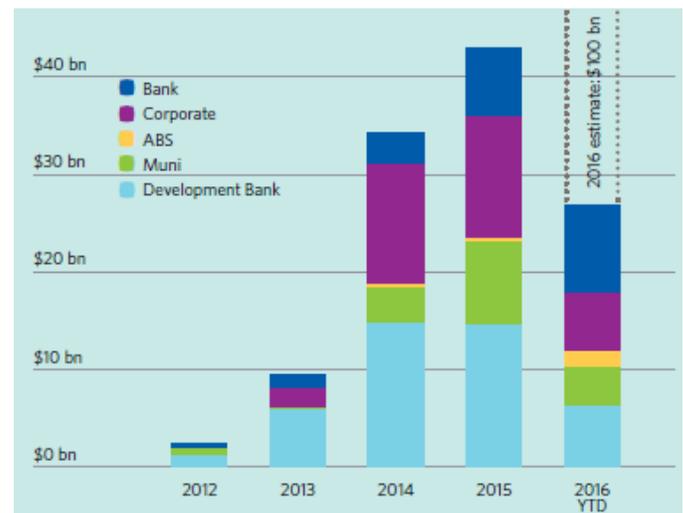
What is a Green Bond?

Green bonds are fixed-income securities, both taxable and tax-exempt, that raise capital for use in projects or activities with specific climate or environmental sustainability purposes.

These bonds are structured the same way as standard bonds, with the same characteristics as standard bonds in terms of seniority, rating, execution process, and pricing, **but with proceeds dedicated to climate or environmental projects**. The bonds carry the same rating as an issuer’s other debt and are often structured under the issuer’s medium term notes

programs. With a few exceptions, the bonds are full recourse to the issuer, meaning they are backed by the issuer’s entire balance sheet so that investors are not exposed solely to the risk of the bond’s underlying projects.

Growth of the Green Bond Market



Source: Climate Bond Initiative – HSBC

Widely recognized types of green bonds include:

- Use-of-proceeds bonds—proceeds from these bonds are earmarked for green projects but are backed by the issuer’s entire balance sheet.
- Use-of-proceeds revenue bonds—proceeds are assigned to eligible green projects. Bondholders have recourse to a specified revenue stream (which may be unrelated to the eligible green projects) but not to the issuer.

- Project bonds—proceeds are invested in a specific green project and the investors have direct exposure to the green project itself.
- Securitized bonds—the relevant revenue stream is generated by a group of green projects or assets.

It is important to note that there is no legal definition of a green bond. Since these bonds’ appearance on the market, issuers have determined whether their bonds were green and have marketed them accordingly. Recently, however, several countries including China and India have opted to regulate the green bond market with issuance guidelines.⁴

Standardization Efforts

In the absence of uniform standards, a number of general principles and certification programs have been developed, of which the most used currently are the Green Bond Principles and the Climate Bond Standards.

The Green Bond Principles are a set of voluntary guidelines that have been developed by a group of investors, issuers and underwriters. They are relatively non-prescriptive and are designed to encourage the growth of the market without imposing overly obstructive barriers to entry. The Principles do not provide specific environmental impact targets or impose limits on the categories of projects and activities that can be financed by green bonds. Instead, their purpose is to promote integrity in the development of the green bond market by clarifying the approach for issuance of a green bond. The Principles are coordinated by the International Capital Market Association. There are currently over one hundred members of the Principles, all of whom have issued, underwritten or placed, or invested in a green bond.⁵

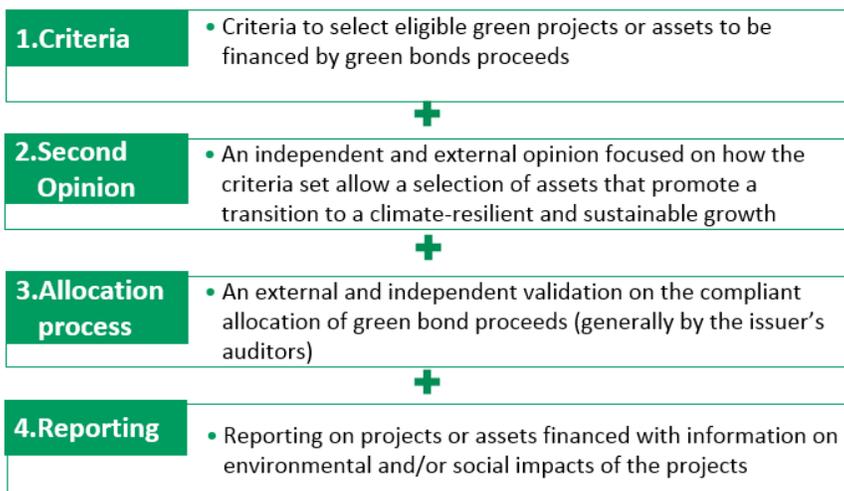
The Green Bond Principles were initially released in January 2014 and a revised set was published in June 2016. There are four components:

- **Use of Proceeds.** The Principles explicitly recognize several broad categories of potential eligible green projects, including but not limited to renewable energy, energy efficiency (including efficient buildings), sustainable waste management, sustainable land use (including sustainable forestry and agriculture), biodiversity conservation, clean transportation, sustainable water management, and climate change adaptation.
- **Process for Project Evaluation and Selection** addresses the decision-making process to determine which projects will be funded. The issuer should set up a transparent

process to determine how the projects fit within the eligible green projects categories identified, it should determine the criteria under which projects will be eligible for use of the green bond proceeds, and should specify the environmental sustainability objectives of those projects.

- **Management of Proceeds** addresses handling of funds that await investment. The Principles encourage transparency in tracking the proceeds from the green bonds via either allocation to a specific sub-portfolio, or use of an auditor or another third party.
- **Reporting** addresses frequency of reports on use of proceeds, project descriptions, and expected environmental impact.

REGULATION AND OPPORTUNITY -- GREEN BOND PRINCIPLES



The Green Bond Principles also recommend that issuers use external assurance to confirm alignment with the key features of green bonds. It identifies three possible assurance or audit methods:

- Second party opinions on the selection process used by the issuer to select the projects for investment
- Unrelated third party certification/verification of the green bonds
- Use of an auditor to verify certain aspects of the green bond proceeds, such as the internal tracking method and allocation of funds

The Climate Bond Standard, or CBS, is a voluntary certification initiative aligned with the Green Bond Principles⁶

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and developed by the Climate Bond Initiative, a nonprofit organization. The Standard provides sector-specific eligibility criteria for asset classes and projects, for example solar, wind and low carbon buildings. The objective of the CBS is to allow investors to screen a bond to assess its environmental impact. Subject to third party verification, a bond that satisfies CBS can be awarded certification. The quality of the experts certifying the bonds—and the criteria they employ—are critical to this process.

The requirements of the CBS are separated into pre-issuance requirements, which need to be met by issuers seeking certification ahead of issuance, and post-issuance requirements, which need to be met by issuers seeking continuing certification following the issuance of the bond and the allocation of the bond proceeds.

Pre-issuance requirements focus on the actual use of proceeds, ongoing eligibility of the projects and assets, use of funds not yet allocated, and the adequacy of and output from the issuer’s internal systems. The Climate Bond certification may only be maintained if post-issuance certification is confirmed within a year after issuance of the bond.

Most Recent Green Bonds, by Settlement Date

Issuer	Value (M)	Currency	Dollar value (M)	Settlement date
BNP Paribas	500	EUR	529.43	December 1, 2016
Nya Svensk FastighetsFinansiering AB	700	SEK	75.768	December 1, 2016
African Development Bank	1,250	SEK	135.736	December 1, 2016
KfW	1,500	USD	1,500	November 30, 2016
City of Portland	16.22	USD	16.22	November 29, 2016
Renovate America	283.634	USD	283.634	November 29, 2016
IBRD	500	USD	500	November 22, 2016
Bank of Communications	30,000	CNY	4,351.3	November 22, 2016
Rikshem	500	SEK	54.092	November 22, 2016
BMCE Bank	500	MAD	48.169	November 21, 2016
KfW	250	GBP	311.36	November 17, 2016
China Industrial Bank	20,000	CNY	2,911.83	November 17, 2016
North Rhine-Westphalia Bank	500	EUR	535.82	November 17, 2016
Los Angeles County Sanitation Districts	170.265	USD	170.265	November 16, 2016
Southern Power	900	USD	900	November 16, 2016
IBRD	100	USD	100	November 11, 2016

Source: The Green Bond Database

Transparency – Disclosure, Verification, and Reporting

Stakeholders in the green bond market generally agree that it should not be subject to overly prescriptive standards so that a framework can be developed without undue constraints. Low barriers to entry should attract the widest pool of issuers and investors, eventually moving green bonds into the mainstream bond market. However, low barriers must be counterbalanced

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with a high degree of transparency, independent valuation, and reporting.

Valuation

Second opinions will be usually given by an independent third-party institute or consulting firm on a non-reliance basis, where the third-party firm either employs its own grading rubric or applies a voluntary standard among the ones mentioned above, and may then base their opinion on information provided to them by the issuer.⁷ Alternatively, instead of performing an independent evaluation, such a third party may directly help structure and validate the issuer’s green bond framework.

Second opinions are encouraged so that they verify an issuers’ green credentials, its ability to identify and select low carbon and climate resilient projects, and more generally attest to a bond’s “greenness.” However, use of second opinions is not consistent and these opinions vary widely in quality. Some remain private and some are issued by the same verifier that helped the issuer develop the green bond framework.⁸

Another option for green bond issuers is to rely on external third-party auditors to assess and report on proceeds management and tracking, to prepare annual impact reporting for the projects funded by the green bond, and to assess the issuer’s ongoing compliance with its green bond commitments.

Reporting

There is a current focus on how best to standardize the quality of impact reporting of green bond issuances. While issuers are publishing more detailed reports on an annual basis and including impact metrics in them, it remains difficult to compare such reports with those issued by international finance institutions such as IFC. These institutions aim to establish robust, industry-wide criteria to improve confidence and comparability across markets. A group of international organizations, led by the European Investment Bank, IFC, the World Bank, and Agence Française de Développement, recently published a framework for harmonizing green bond impact reporting.⁹ It contains clear and robust reporting guidelines designed to make it easier for investors to compare issuers and bonds.¹⁰

Impact reporting is an essential way for an issuer to disclose the impact of the projects funded by green bonds, with as much detail as possible. However, significant differences between projects render comparability extremely difficult and present another reason for reporting harmonization that can allow investors to compare and better analyze bonds.

Other tools being developed by third-party market developers to provide more granular information and deeper analysis of green bonds include:

- Green indices, including those launched by S&P and Barclays, which provide fundamental performance data,

increase transparency, and drive demand

- Green market segments developed by stock exchanges, including those in London, Luxembourg, and Oslo
- Green ratings by rating companies—Moody’s publishes an assessment methodology for green bonds¹¹—and by secondary market ratings.¹²

Why Issue a Green Bond?

The Paris Agreement of December 2015 seeks to mitigate greenhouse gas emissions and establish a low carbon economy. It is expected to cause rapid growth in the green bond market.

The landmark agreement establishes an objective of holding the global temperature increase to less than two degrees Celsius above pre-industrial levels. The agreement does not establish firm greenhouse gas emission reduction targets for developed countries, but instead establishes the foundation of a new international climate policy through a bottom-up approach in which each signatory to the agreement voluntarily produces and shares nationally determined contributions to address climate change every five years.

The Paris Agreement also recognizes carbon markets by creating “internationally transferred mitigation outcomes” that can be traded by signatories and can be put toward national contribution goals, similar to the emissions trading provisions established in the Kyoto Protocol.

While the Paris Agreement does not establish binding financial requirements on developed countries, it clearly sets expectations that they “mobilize climate finance from a variety of sources, instruments and channels, noting the significant role of public funds,” and that “such mobilization of climate finance should represent a progression beyond previous efforts.”

Whether it is because of the political push of the Paris Agreement or just the increased awareness of climate change among investors, the truth is that investors now favor green bonds over traditional bonds when the price and terms are the same, because green bonds offer the additional environmental component that many investors seek.

Many institutional investors (particularly pension funds and not-for-profit organizations) have committed to divestment from fossil-fuels companies and are beginning to consider exposure to carbon as a risk to be considered when making an investment decision. This is particularly the case in countries where tougher regulations on carbon emissions are introduced and may leave investors and issuers with toxic or stranded assets.¹³ Most investors are primarily concerned with returns, and the growing impact of carbon risk exposure on their portfolios can be costly.

India Says YES to Green Bonds

India, the world’s third largest country in terms of annual greenhouse-gas emissions, is gradually reducing its dependence on fossil fuel sources of energy. The goal is ambitious: to have cleaner energy sources account for 40 percent of total energy generation capacity by 2030. This means nearly 300 gigawatts of renewable capacity must be generated, of which solar is estimated to comprise 209 gigawatts. To achieve these goals, a green bond market needed to be developed that could support the long-term financing needed for projects involving climate change. YES Bank, India’s fifth largest private sector bank and a local leader in climate financing, responded to the challenge and in 2015 issued a green bond with \$50 million in IFC investment.

Environmental Finance, an online news and analysis service, awarded the transaction the Special Award for innovation. In 2016, the Climate Bond Initiative, an international investor-focused nonprofit developing the Climate Bond Standard, awarded YES Bank the Green Bond Pioneer Award for its work in instituting an emerging market green bond—the first of its kind for both India and IFC.

With IFC’s support, YES Bank is scaling its investments in renewables, while including an added focus on expanding access to climate-related financing for women-owned small and medium enterprises.

IFC’s Experience

IFC began issuing green bonds in 2010 because the bonds’ framework was consistent with its priorities. Green bonds allow IFC to raise funds in capital markets for environmentally sustainable projects and to raise awareness about climate change in the investor community.¹⁴ They also channel funds to projects in emerging markets.

Since 2010 IFC has issued over fifty green bonds in multiple currencies including US dollars, Euros, Australian dollars, New Zealand dollars, Turkish Lira, Brazilian Reals, Chinese RMB, Peruvian Soles and, more recently, South African Rand and Indian Rupees. These bonds totaled the equivalent of approximately \$4.4 billion. Last year IFC issued eighteen green bonds—three times the issuances of the previous year—and has begun to tailor issues to match investor needs in terms of size, currency, and format.

IFC has also started to invest in other issuers’ green bonds including, recently, an issuance by YES Bank, the largest private sector commercial bank in India. The proceeds of the

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bond will be used to fund renewable energy projects including solar power and wind power projects in India. To finance the purchase of the YES Bank Green Bond (approximately \$50 million), IFC issued the first Green Masala Bond (an off-shore bond denominated in Indian Rupees), which is listed on the London Stock Exchange.

As mentioned, IFC, together with other multilateral development banks and international financial institutions, has been actively involved in establishing a harmonized framework for impact reporting. Given the importance of transparent reporting of climate financing, including the impact of projects in the green bond program, IFC publishes an annual green bond impact report with the commitments and disbursements for eligible projects. The core criteria for such projects are annual energy savings, annual greenhouse gas emissions reduced or avoided, annual renewable energy produced, and capacity of renewable energy plants constructed or rehabilitated.¹⁵

Finally, IFC is now supporting the development of local green bond markets by helping its clients navigate the launch of credible green bonds in line with the Green Bond Principles.

The Forests Bond

In November 2016 IFC issued a first-of-its-kind, five-year bond called the Forests Bond. It gives investors the option of getting repaid in either carbon credit coupons or cash, and it raised \$152 million to support private sector development and prevent deforestation. The bond was sold to major global institutional investors and was listed on the London Stock Exchange.

Investors opting for the carbon credit coupon will receive tradable verified carbon units representing a right to claim the achievement of a verified reduction or removal of one ton of carbon dioxide equivalent (CO₂e). They can retire the credits to offset their own corporate greenhouse gas emissions or sell them on the carbon market where governments, companies, and individuals can purchase them to mitigate their own emissions. Such carbon credits are traded over-the-counter and often directly between the project developer and buyer.

To pay investors a carbon credit coupon, IFC will buy carbon credits generated by Kenya's Kasigau Corridor Project, a 500,000-acre nature preserve near Mombasa. The carbon credit will be issued under the Verified Carbon Standard, an internationally recognized standard for the voluntary market of carbon credits. Also, the project complies with international Climate, Community and Biodiversity Standards that confirm the community benefits and sustainable practices of the project.¹⁶

The Forests Bond is an innovation on green bonds in that it has both a green and a social impact. It is intended to reduce

emissions from deforestation and forest degradation, and also generates a number of socio-economic benefits through various community initiatives.

While Forests Bond proceeds are not earmarked for green projects, IFC has committed to purchase from the project on an annual basis an amount of credits at least equal to the coupon payable annually to the investors, effectively earmarking an amount equal to the annual coupon for the project.

Additionally, unlike traditional green bonds, the Forests Bond offers investors the option to take project risk. They can take issuer risk, similar to ordinary green bonds or, if they choose, connect directly with the project by taking delivery of the carbon credits generated by the project. In this sense the Forests Bond combines in one instrument the simplicity of a traditional green bond with the complexity of a project bond.

Finally, the Forests Bond puts a price on carbon. The price for the carbon credits is a fixed price that has been set out at bond issuance. If carbon markets for forestry credits bloom over the next few years, many investors in the Forests Bond are likely to choose to receive carbon credit coupons instead of cash.

Conclusion

Green bonds are simple fixed income instruments that resemble traditional corporate bonds with the added benefit that they finance environmentally sustainable projects.

Simplicity is key to these bonds, as investors need to clearly understand the risks they are taking and must be able to easily allocate the instrument in their portfolio. The bonds must also be easy to replicate.

Standardization in terms of transparency, independent verification, and reporting is critical for the growth of the green bond market. To fully participate in the market investors need to have confidence in the environmental credentials and performance of the bonds. Green standards recently published in China and India represent real progress toward this goal.¹⁷

As the Paris Climate Agreement is implemented it is critical to remember that the push to reduce emissions and switch to clean energy sources will also necessarily include the greening of the global financial system. ■

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¹ Climate Bond Initiative, HSBC

² Climate Change Support Team of the UN Secretary General, *Trends in private sector climate finance*, (October 9, 2015), <http://www.un.org/climatechange/wp-content/uploads/2015/10/SG-TRENDS-PRIVATE-SECTOR-CLIMATE-FINANCE-AW-HI-RES-WEB1.pdf>

³ Ministry of Foreign Affairs official website, *G20 Leaders' Communique Hangzhou Summit* (Sep. 6, 2016, 12:05AM), http://g20.org/English/Dynamic/201609/t20160906_3396.html

⁴ The Securities and Exchange Board of India (SEBI) has issued in January 2016 the final guidelines on the issuance of green bonds establishing that green bonds shall be subject to the SEBI Issue and Listing of Debt Securities' Regulations, 2008. The Board has not stated a blanket definition of green bonds but it will specify it from time to time. The People's Bank of China (PBoC) and a Green Finance Committee set up by the PBoC wrote standards in December 2015 to help green China's finance system. The set of standards set out which assets and projects are eligible to be financed using green bonds. Kenya has also announced that it will have a green bond policy in place in early 2017.

⁵ Since the launch of its first Green Bond, IFC has been actively participating in publishing the Green Bond Principles.

⁶ Other initiatives include the Statement of Investor Expectation for the Green Bond Market to support the development of the green bonds market which is composed by a major group of investors in green bonds, including pension funds, insurance companies and asset management groups. The Statement supported the development of the GBPs. <http://www.ceres.org/press/press-releases/investors-encourage-further-transparency-standardization-to-spur-green-bond-market-growth>

⁷ The main second opinion providers include Cicero, Vigeo, Oekom, Sustainalytics or DNV GL. Their basis for assessment are not standardized and therefore each of them has a different approach. Some provide a second opinion based on the assessment of the issuer's framework and guidance for assessing and selecting eligible projects, others take a more holistic approach where climate change mitigation is considered alongside social and governance considerations and others assess the bond's alignment with the GBPs.

⁸ About 42% (on a volume basis) of green bonds that have been issued so far have second opinions while 84% of the green bonds issued in Europe in 2015 have second opinions. The difference is even more noticeable in corporate bonds as 98% of green corporate bonds in Europe were issued with a second opinion compared to 14% of non-European corporate bonds. Bloomberg, Credit Agricole CIB.

⁹ World Bank Group, *Green Bonds: Working Towards a Harmonized Framework for Impact Reporting*, (Dec. 2015),

<http://treasury.worldbank.org/cmd/pdf/InformationonImpactReporting.pdf>

¹⁰ [The World Bank and the International Finance Corporation publish separate reports at the end of the fiscal year \(June\) which provide guidance on impact reporting, including details of the renewable energy and energy efficiency results of each green bond eligible project financed by the World Bank or by IFC. These are regarded as best practice.](#)

¹¹ Moody's is now also providing a methodology to assess the greenness of the bond. It has published in January 2016 a proposed approach and methodology to the Green Bonds Assessment (GBA). GBAs are not credit ratings, but forward looking opinions of the relative effectiveness of the issuer's approach for managing, administering, allocating proceeds to and reporting on environmental projects financed by green bonds. According to Moody's, GBAs assess the relative likelihood that bond proceeds will be invested to support environmentally beneficial projects as designated by the issuer.

¹² Institutions such as Oekom Research are issuing sustainability bond ratings.

¹³ The Financial Stability Board established the industry-lead Task Force on Climate-related financial disclosures on December 4, 2015 with Michael Bloomberg as its chair. Source: www.fsb-tcfd.org

¹⁴ Elizabeth Coston, Esohe Denise Odaro, Evelyn Hartwick & Jamie Jones, *Next Season's Green Bond Harvest: Innovations in Green Credit Markets*, (International Finance Corporation, 2015)

<https://www.ifc.org/wps/wcm/connect/83eb088044647c9a82b38ec66d9c728b/Next+Season's+Green+Bond+Harvest.pdf?MOD=AJPERES>

¹⁵ Thomas Kerr, Olga Khlebinskaya, Zauresh Kezheneva, Berit Lauridsen, Rusmir Music, Esohe Denise Odaro & Esther Rojas-Garcia, *Green Bond Impact Report 2015*, International Finance Corporation,

http://www.ifc.org/wps/wcm/connect/18cbfe004a92050c8d7acd9c54e94b00/IFCGreenBondImpactReport_Final_11-11-15.pdf?MOD=AJPERES

¹⁶ Issued by the Climate, Community & Biodiversity Alliance, a partnership among NGOs to promote land management and mitigate climate change.

¹⁷ The adoption of the standards has resulted in Chinese issuers issuing 40% of the green bonds so far in 2016.