GREEN BONDS: AN OVERVIEW

NEPC Impact Investing Committee

Introduction

The nascent market for green bonds saw a growth spurt in 2014 with issuance tripling from a year earlier, surpassing $38 billion.[1] The growth in green bonds comes amid greater awareness of climate change and expanding investor appetite for environmentally-aware investment products. The prevalence of these securities is likely to rise as they allow issuers and investors alike to demonstrate their commitment to environmentally focused initiatives.

Bonds labeled 'green' signify that proceeds raised from the issuance will be tagged for projects intended to benefit the environment—for instance, the funds could be used for renewable energy or energy-efficient endeavors—with the issuer agreeing to report on the use of proceeds. This is the main factor distinguishing green bonds from the rest of the fixed-income market; they are otherwise identical to their non-green brethren. To be sure, it is important to note that green bonds only developed in the last decade and occupy a tiny sliver—less than 1%—of the global fixed-income market. Additionally, the process for labelling a bond as green is largely unregulated. Issuers have full discretion to self-label and there is no process for formal approval or standardized reporting. That said, the surge in issuance in 2014 and increased investor appetite point to continued growth in this segment.

Green bonds possess a label signifying that proceeds raised by the bond issue will be earmarked or ring-fenced to fund projects intended to benefit the environment with issuers agreeing to report on the use of proceeds. These terms are noted within the bond's issuing documents. This is the key factor differentiating green bonds from the rest of the fixed-income market; they are otherwise identically structured to their non-green counterparts.

In line with NEPC's commitment to keep abreast of developments and trends in the investment landscape and educate investors, this paper provides an overview of green bonds and details important considerations for investors. We believe this area of the market, like any other, should be analyzed on its merit. To this end, NEPC's dedicated Impact Investing Committee, comprising a cross-discipline team of members from research and consulting, will continue to monitor the market and vet investment opportunities for clients as they arise.

The Evolution of Green Bonds

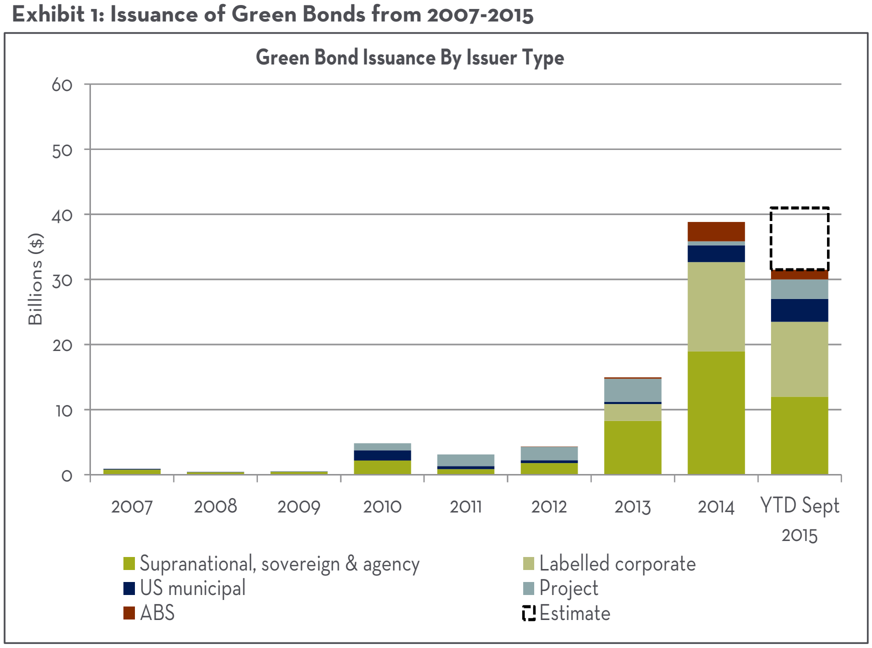
In many ways a green bond is no different than the standard debt issued by a corporation, government or supranational entity – it is a coupon-paying instrument bearing a promise by the issuer to repay interest and principal at maturity. The key difference is that the proceeds of a green bond are intended to fund initiatives that benefit the environment. The first green bond was issued by the European Investment Bank (EIB) in 2007, followed in 2008 by the World Bank. The goal of these pioneering banks was to create a high-quality fixed-income security to finance projects aimed at mitigating climate change. The end product was a standard bond with a simple label alerting investors to the 'green' nature of the security.

[1] *Issuance estimates may vary by source. For the purposes of this paper, data published by Bloomberg New Energy Finance was utilized.*

After the bond offerings' initial success, the EIB and the World Bank continued to mobilize this source of funding and have issued several additional green bonds. Other entities followed suit and the green bond universe gradually grew. The first six years drew only a few billion dollars of new issuance per annum, but in 2013 the market reached a tipping point. Since then, there has been an exponential increase in supply (Exhibit 1).

The growing universe of green bonds has also allowed for differentiation among issues (Exhibit 2). For example, although corporate green bonds only entered the market at the end of 2013, these bonds comprised about a third of total issuance of green bonds in 2014. Green-labeled asset-backed securities and US municipal debt also saw an uptick last year. While the majority of issues are still denominated in US dollars and euros, issuers from a number of other countries, including China and India, have begun to enter the market. As such, better diversification across geography and currency is expected. Projections for 2015 issuance vary widely, ranging from $30 billion to $100 billion, but actual issuance has been slow so far this year. Approximately $30 billion in new green bonds have been introduced to the market in 2015 through September, according to Bloomberg. Yet, if pacing follows current trends, we should see an uptick in issuance as the year progresses.

Exhibit 1: Issuance of Green Bonds from 2007-2015



Source: Bloomberg New Energy Finance *(2015)*.

Borrower Incentives

Given the similarity in structure and terms of green and non-green bonds, investors often wonder what the incentives are for issuers to self-label their debt offerings as green. For some issuers, raising funds through a green bond offering presents an opportunity to attract new investors, as these securities may be especially appealing to investors focused on environmental, social and governance (ESG) factors. Likewise, issuing a green bond presents a powerful marketing opportunity to demonstrate an organization's commitment to sustainability. Tax incentives and subsidies may also be available for state and local government issuers within the United States through federal programs, such as those granting Qualified Energy Conservation Bond (QECB)[2] and Clean Renewable Energy Bond (CREB)[3] status. Corporations may also be eligible for federal tax credits and other incentives by taking steps to make their business operations more energy efficient — projects that may be funded by issuing green bonds. Additional incentives may be available based on programs offered in the country of origin.

Labelling, Regulation and Transparency

Currently, the process of labelling a bond as green is largely unregulated. Issuers have the discretion to self-label and there is no formal approval or vetting process. Issuers claiming green bond status must include a brief declaration statement within their offering documents indicating that the proceeds raised will be allocated to green projects. There is an expectation that issuers will also provide reports in the future, detailing the actual use of proceeds. However, there is no requirement to provide standardized reporting, so actual reporting may vary greatly from issuer to issuer. While green bonds are subject to the same oversight from the Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority (FINRA) as their non-green counterparts, there is no regulatory body ensuring that

Exhibit 2: Types of Green Bonds

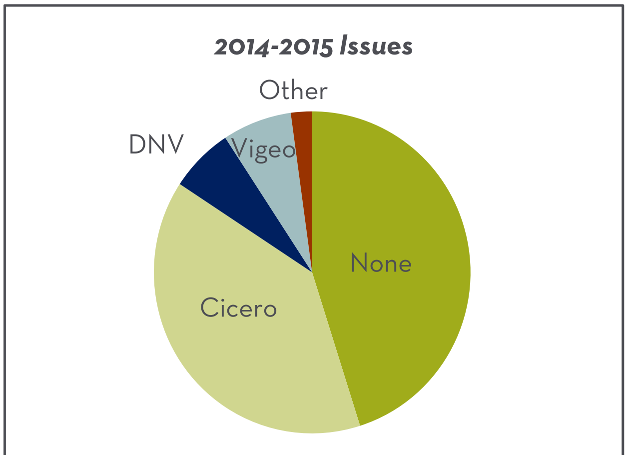
Corporate: Issued by corporations; repayments are from general corporate funds. Have the same credit rating as other bonds of similar composition from the same issuer. Bank of America became the first corporate issuer in 2013; other issuers include Iberdrola, TD, Unilever and Rikshem.
Green ABS: Asset-backed securities with cash flows supplied by a portfolio of underlying receivables (loans, leases and Power Purchase Agreements (PPA) that are associated with green projects). Issuers include Toyota, SolarCity and Fannie Mae.
Government: Issued by national, regional or local governments/ municipalities to finance green projects. Have the same rating as other debt issued by the entity. Green municipal bonds may have tax advantages for investors. Issuers include the State of Massachusetts and the County of Stockholm.
Project Bonds: Backed by the cash flows of an underlying renewable energy project or portfolio of projects. A remote account—separate from the issuer's general funds—is created such that the project's credit rating is distinct from that of the issuing entity. Repayment is based on cash generated by the venture; these bonds are implicitly more risky as repayment hinges on the success of the project. Issuers include Berkshire Hathaway Energy (Topaz) and Continental Wind.
Supranational/ International: Bonds issued by supranational or international organizations, including multilateral banks, development banks and export credit agencies. This is the most common type of green bond and typically has high credit ratings. Issuers include the World Bank and the African Development Bank.

Source: Bloomberg

the funds raised through the issuance of green bonds are actually benefiting green initiatives.

Regulations prohibiting companies with otherwise poor environmental practices from issuing green bonds are also non-existent. For these reasons, greenwashing—a term used to describe the act of a bond issuer self-labelling an issue as green for marketing purposes without having a true commitment to the environment or intention to use the proceeds as indicated—is a buzzword among investors in the space. To be sure, this is a potential problem since there are no official requirements for green labelling. That said, reputational risk may be enough to prevent pervasive greenwashing.

Exhibit 3: Second Opinions



Source: Climate Bonds Initiative

This lack of regulation has led to the development of a handful of organizations providing independent opinions on green-labelled issues. These reviews are funded by the issuer and are not yet required. The reviews are typically based on an evaluation of the projects to be financed by a specific green bond; they also may incorporate a review of the governance, transparency and other practices of the issuer. A summary of the findings is typically included in the offering documents for investor reference. The Center for International Climate and Environmental Research – Oslo (CICERO), Vigeo Rating and DNV GL are the main firms offering these services. While not required, there is a preference among investors for issuers to seek a second opinion prior to marketing new green issues. However, some issuers opt against hiring an independent reviewer because second opinions are costly and the supply of green bonds is still limited. In fact, only about half of the green bonds issued in 2014 and in the first six months of 2015 touted this additional verification; however, many offerings still have been oversubscribed (Exhibit 3). Pressure from investors is likely necessary for an independent appraisal to become standard practice.

In an attempt to foster further transparency within the green bond market, the International Capital Markets Association (ICMA) collaborated with a group of investors, issuers and underwriters to form an Executive Committee, which serves as an unofficial governing body in the space. The group

[2]QCEBs are taxable bonds that allow qualified state, tribal and local government issuers to borrow at lower rates to fund energy conservation projects. The issuer's borrowing costs are subsidized by the US Department of the Treasury.

[3]CREBs may be issued by qualifying entities to finance renewable energy projects. Investors possessing CREBs receive federal tax credits in lieu of a portion of the traditional bond interest, lowering the effective interest rate for the borrower.

Exhibit 4: Example of a Green Bond

Commonwealth of Massachusetts Series E 2014 General Obligation Green Bonds

Issue Date: 9/24/2014

Issue Amount: $350 million

Coupon: Varies (2.0-5.0)

Credit Quality: Aa1/AA+

Maturity Date: Varies (last bond matures on 9/1/2031)

Second-Party Opinion: No

Use of Proceeds: Will benefit a number of projects, including:

- Improving drinking water quality
- Energy efficiency and conservation in state buildings
- Land acquisition, open space protection and environmental remediation
- River revitalization, preservation and habitat restoration
- Marine commerce terminal to support offshore wind projects

Source: The Commonwealth of Massachusetts Investor Program

developed and published the *Green Bond Principles ("Principles")* in 2014, a document providing voluntary process guidelines for green bond issuers. It includes sections addressing the proper use of bond proceeds, project evaluation and selection, management of proceeds, and reporting. While still in its infancy, investors are beginning to expect issuers adhere to the *Principles*. In 2015, a second group of investors, led by Ceres's Investor Network on Climate Risk (INCR), released *A Statement of Investor Expectations for the Green Bond Market*. (Ceres is a non-profit organization advocating for sustainability leadership.) This document supports the *Principles* but provides additional structure around key elements, including project eligibility, issuer disclosures, reporting and independent assurance. INCR urges issuers to observe the *Principles and the Statement of Investor Expectations* to facilitate standardization and credibility within the market.

Investing in Green Bonds

Since green bonds and standard debt issues are nearly identical in structure, investors should still conduct a fundamental analysis of the issuer and relative value analysis to evaluate these securities; investors may also perform further ESG analysis. Green bonds structured as general obligations will tend to trade at similar levels and with comparable liquidity to non-green bonds, all else equal. Typical buyers of green bonds tend to be buy-and-hold investors due, in part, to the limited availability of these securities. This investor attribute is attractive to issuers, giving them an additional incentive to issue green bonds. On an issue-by-issue basis there is anecdotal evidence of a "green premium" priced into some green bonds. However, since the investor base is still dwarfed by those not specifically targeting these bond types, there is little proof of this premium embedded in the overall market for green bonds.

Investors interested in green bonds can purchase securities directly or achieve exposure through a handful of investment funds dedicated to green bonds. That said, potential investors should be aware of certain factors when evaluating these strategies, for instance, the emergence of green bonds is a relatively recent occurrence. Therefore, dedicated strategies tend to have short track records and limited assets. Also, the universe of green bonds is still limited in scope. In addition, less than 50% of issues are denominated in US dollars, further reducing the opportunity set for many strategies. Some funds navigate this issue by utilizing broader mandates such as investing in US Treasuries or by investing in bonds that are not officially labelled green but benefit green initiatives. For example, many municipal bonds may qualify as green bonds based on their intended use of proceeds, for instance, those supporting access to public transportation or water conservation, but are not labeled as such. While common among municipals, this is true across the spectrum of fixed-income securities. In fact, the Climate Bond Initiative's 2015 Bond and Climate Change report estimated the value of the outstanding total climate bond universe at nearly $600 billion, of which labelled green bonds comprised only about 11%. Exhibit 4 outlines an example of a green bond from Massachusetts.

Some larger, more mainstream investment managers may also hold green bonds in their portfolios. However, many of these managers are not investing in green issues because of their environmental bent. Rather, such investors tend to lump green bonds with other non-green options and analyze them based on their assessment of value. Since green bonds represent less than 1% of the total fixed-income market, it is unlikely that a non-green focused strategy would hold a sizeable allocation to green bonds.

The recent surge in issuance and increased investor appetite has led to the launch of several green bond indices, for instance, Solactive, S&P Dow Jones, Bank of America Merrill Lynch and Barclays (in partnership with MSCI) released new green bond indices in 2014. The indices vary in composition and may capture different segments of the market. It should be noted that while the indices are meant to provide a snapshot of the green bond space, some smaller issues may be excluded as they do not meet the inclusion criteria (minimum issue size for major index inclusion is typically $250 million). Despite the emergence of these new indices, few corresponding index funds have been launched.[4]

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Alternatives to Labelled Green Bonds

While labelled green bonds expressly support projects that benefit the environment, climate-conscious investors should be aware that these instruments are only one of many available options. In fact, a number of strategies invest assets based on environmental, social and governance (ESG) considerations. Such managers invest in equity and debt of companies or other entities highly rated for their ESG practices. In addition to factors affecting climate change, these managers may include other criteria, for instance, an issuer's hiring practices, working conditions and board membership. This process may also be helpful in screening out 'greenwashed' investments. Many investors find this approach attractive as it incorporates a broader subset of issues into the investable universe.

Looking Forward

The growth in green bonds comes amid greater awareness of climate change and expanding investor appetite for environmentally-aware investment products. The prevalence of these securities is likely to rise as they allow issuers and investors alike to demonstrate their commitment to environmentally responsible initiatives. The growing need for energy efficient and clean technologies globally, especially in emerging market countries, also may help drive issuance going forward. These securities, which form a subset of the fixed-income market, present issuers with the opportunity to widen their investor base as they also appeal to ESG investors. As green bonds become more diversified across credit quality, geography and instrument type, they will likely integrate more readily with mainstream investment products.

However, as this segment grows—it currently makes up less than 1% of the global fixed-income market—widespread acceptance of the *Principles* and the *Statement of Investor Expectations* will be essential to facilitate standardization and credibility within the market in the absence of an official regulatory body and/ or independent scrutiny from third-party organizations. We will continue to monitor this growing market and vet investment opportunities for clients as they arise. Please contact NEPC if you have any questions or want to know more about impact investing.

[4]The first green bond index fund was launched in 2015 by SSgA.

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About Being a PRI Signatory

NEPC is a member of Principles of Responsible Investing (PRI), a United Nations-supported initiative. It is an international network of investors working together to put the six Principles for Responsible Investment into practice. Its goal is to understand the implications of sustainability for investors and support signatories to incorporate these issues into their investment decision-making and ownership practices (www.unpri.org).

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