

FIXED-INCOME INVESTING IN
Climate Solutions



**GREEN BOND
OPPORTUNITIES FOR
PHILANTHROPIC
FOUNDATIONS**



**CROATAN
INSTITUTE**

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Climate Solutions

FOUNDATIONS ARE WELL POSITIONED as both investors and grantmakers to influence the growing market for green bonds and to benefit from its rapid growth. Green bonds can serve as a key fixed-income component of a fossil-free investment strategy for the increasing numbers of foundations committing to divest from fossil fuels and invest in climate solutions. They provide a conventional way to finance low-carbon infrastructure as the world rapidly transitions to a cleaner, more resilient energy economy that transcends our heavy reliance on fossil fuels. Green bonds allow investors to manage portfolio risks and seize opportunities associated with renewable energy, energy efficiency, green building, and water conservation—without giving up the security and income conventionally associated with fixed-income investments.

Because green bonds have similar investment characteristics to other bonds, they can readily be integrated into foundation portfolios. As tax-exempt investors, foundations can specifically take advantage of the growing market for taxable green bonds, including taxable municipal bonds, which have an extensive track record of financing local clean energy infrastructure projects. Some of the opportunities that green bonds provide foundations include the following:

- **Place-based strategy.** Many green bonds are highly targeted geographically, particularly muni bonds, so foundations with geographic areas of programmatic concern can use them as place-based investments.
- **Divest-Invest strategy.** Any of the nearly 80 foundations that have pledged to divest from fossil fuels and invest in climate solutions through the Divest-Invest Philanthropy initiative can begin allocating portions of their fixed-income allocations to green bonds.

- **Investing in green building.** For foundations that support green building, Real Estate Investment Trusts (REITs) have begun issuing green bonds to finance LEED-certified facilities.
- **Investing in clean energy and related technologies.** Pure-play solar, wind, and other clean energy and sustainable infrastructure companies are increasingly issuing corporate bonds and asset-backed securities across the credit-quality spectrum.

AN INTEGRATED INVESTMENT STRATEGY FOR FOUNDATIONS.

From program support to Program-Related Investments (PRIs) to endowment asset allocation, foundations have often played a key role in supporting economic practices that benefit the environment and communities. An integrated investment strategy involving green bonds would include the following:

- **Portfolio Allocation Strategy.** On the investment side of the house,

foundations can review their endowment investment portfolios to determine how green bonds can fit within their existing fixed-income allocations without compromising fiduciary requirements. Wider portfolio reviews extending across asset classes, including equity, debt, and real assets, could integrate other clean energy and climate-related securities and investments into foundation endowments.

- **PRIs.** Foundations can also underwrite PRIs that would help develop, deepen, and diversify green bond deal flow.
- **Programmatic Strategies.** On the programmatic side of foundation operations, opportunities abound to support green bonds and other climate solutions—through research and outreach, resource development, the replication of successful models, and deploying philanthropic convening power as well as capital. Recommendations along these lines are found on page 17.

CONTENTS

- ii Executive Summary
- iv About the Authors
- iv Acknowledgements
- v About the Sponsors
- 1 Introduction
 - 3 **CASE STUDY - Green Bond Principles**
- 4 The Rapidly Growing Market in Clean Energy and Green Bonds
 - 4 Defining Green Bonds
 - 5 What Do Green Bonds Finance?
 - 8 Green Bond Growth Is Attracting Attention
 - 9 Growing Pains
 - 10 **CASE STUDY - Wallace Global Fund: Green Bonds within a Total Portfolio Approach to Mission-Related Investing**
- 11 Integrating Green Bonds into Foundation Investment Portfolios
 - 12 Green Bonds as Mission Investments
 - 13 From Divestment to Risk Management
 - 14 **CASE STUDY - The Sierra Club Foundation: Focusing on Green Bonds to Invest in Solutions**
 - 15 **CASE STUDY - Green Bonds within Total Portfolio Activation**
 - 16 Green Bonds as Place-Based Investments
- 17 Cultivating the Field: Recommendations for Philanthropy's Role
- 20 Bibliography

FIGURES

- 8 **FIGURE 1.** Labeled Green Bond Issuances 2014
- 8 **FIGURE 2.** Green Bonds by Issuer Type
- 10 **FIGURE 3.** Wallace Global Fund Asset Allocation as of December 31, 2014
- 11 **FIGURE 4.** Average Asset Allocation of Private Foundations (FY2013)
- 12 **FIGURE 5.** Average Asset Allocations of Private Foundations with Assets under \$51 Million (FY2013)
- 13 **FIGURE 6.** Asset Classes of Foundations' Market-Rate Mission-Related Investments 2011
- 14 **FIGURE 7.** The Sierra Club Foundation's Asset Allocation as of December 31, 2014
- 15 **FIGURE 8.** TPA Fixed-Income Social and Environmental Impact Analysis

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ABOUT THE SPONSORS

Clean Energy Group is a leading nonprofit advocacy organization working in the U.S. and internationally on innovative clean energy technology, finance, and policy programs.



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Confluence Philanthropy is a non-profit network of over 400 private, public, and community foundations along with the leading investment advisors in the field of impact investing. Launched in August 2009, Confluence Philanthropy supports and catalyzes the work of these organizations who are committed to moving philanthropy towards mission-aligned investment. Confluence organizes monthly webinars, roundtable discussions, an annual conference, as well as several working groups focused on areas of investment and change strategies.



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INTRODUCTION

AS BOTH INVESTORS AND GRANTMAKERS, philanthropic foundations have a major opportunity to support the growing market for green bonds. For foundations focused on pressing environmental issues such as climate change, water, energy, and conservation, green bonds can be natural mission-related investments that mobilize a fuller array of philanthropic assets to expand the impact of often limited grantmaking dollars. Through initiatives such as Divest-Invest Philanthropy, growing numbers of foundations have also committed to divest from fossil fuels. Signatories to Divest-Invest Philanthropy have also pledged to invest in climate solutions, but fossil-fuel divestment has received far more attention than the investment side of the equation. Within fixed-income portfolios, green bonds have the potential to serve as a key component of a more pro-active approach to sustainable investing in a new climate economy.

The financial risks and opportunities associated with climate change and global natural resource constraints make green bonds compelling investment opportunities for any foundation. Green bonds provide highly conventional ways to finance low-carbon infrastructure as the world rapidly transitions to a new, more resilient energy economy. In order to limit the worst impacts of climate change, the International Energy Agency has estimated that the scale of financing needed for this global energy transition ranges from \$1 trillion to \$6 trillion per year through 2050.¹ Growing numbers of investors, from large pension plans and sovereign wealth funds to major insurers and leading institutional asset managers, are consequently buying green bonds to manage

¹ Mark Fulton and Reid Capalino, "Investing in the Clean Trillion: Closing the Clean Trillion Investment Gap," Ceres, January 2014; and "Special Report: World Energy Investment Outlook," International Energy Agency, June 2014.



portfolio risks and seize opportunities associated with renewable energy, energy efficiency, green building, water conservation, and infrastructure. While many investors may first think of venture capital as the primary arena for clean energy investment, investment opportunities in solutions to climate change now extend across asset classes.² Green bonds provide one critical way for philanthropic investors to participate in these kinds of investment themes without giving up the security and income traditionally associated with fixed-income investments.

As the market for green bonds grows, a widening set of issuing institutions are beginning to use debt capital markets to finance an expanding array of environmental projects. Although commonly associated with the World Bank and other international financial institutions that have used green bonds to finance climate mitigation or adaptation in the developing world, bond finance has an even longer track record of funding clean energy infrastructure in municipalities in the United States, stretching back to the late 1990s. Cities, states and other public agencies, solar companies and multinational corporations, real estate investment trusts, and colleges and universities are among the many kinds of institutions now regularly issuing green bonds. The growing diversity of issuers, of bond structures, and of products and projects being financed means that green bonds can play a variety of different roles within fixed-income strategies, depending on the specific needs of the investor.

Although green bonds have experienced rapid growth in recent years, they still constitute a relatively small share of the \$80 trillion global bond markets. This leaves ample room for future growth and for foundations to play a critical role in shaping the market's development—not only as investors but also as strategic partners, grantmakers, and conveners in the field. Initial research conducted through Clean Energy Group's Clean Energy + Bond Finance Initiative has identified numerous models of green bond deals and structures that could be optimized and replicated on a wider scale, particularly through the use of credit enhancements.³ Philanthropy has unique opportunities to support this growing field and to ensure that its direction supports climate resilience and the transition to a cleaner energy future.

In order to help the philanthropic community navigate this rapidly evolving market, this paper provides an overview of green bonds, tailored to the specific concerns of foundations, particularly those grappling with the challenges and opportunities of fossil-fuel divestment. The study complements a broader, year-long inquiry we conducted into the nature of institutional investor demand for green bonds, which involved consultations with more than 50 investors,

² See Joshua Humphreys, "[Institutional Pathways to Fossil-Free Investing: Endowment Management for a Warming World](#)," Tellus Institute, 2013; David Wood, "[Handbook on Climate-Related Investing across Asset Classes](#)," Institute for Responsible Investment, April 2009; and "[Climate Change Scenarios—Implications for Strategic Asset Allocation](#)," Mercer, 2011.

³ Lewis Milford, et al., "[Clean Energy Finance through the Bond Market](#)," Brookings Institution, Brookings-Rockefeller Project on State and Metropolitan Innovation, 2014.

If investors want to finance solutions to the climate crisis, they will ultimately need to allocate capital to more sustainable alternatives to fossil fuels.

Green Bond Principles

THE GREEN BOND PRINCIPLES (GBP)

are a set of voluntary process guidelines that recommend transparency and disclosure and promote integrity in the

The Green Bond Principles aid investors by promoting availability of information necessary to evaluate the environmental impact of their Green Bond investments.

development of the Green Bond market by clarifying the approach for issuance of a Green Bond. The GBP are intended for broad use by the market: they provide issuers guidance on the key components involved in launching a credible Green Bond; they aid investors by promoting availability of

information necessary to evaluate the environmental impact of their Green Bond investments; and they assist underwriters

by moving the market towards standard disclosures which will facilitate transactions.

The GBP recommend a concrete process and disclosure for issuers which investors, banks, investment banks, underwriters, placement agents, and others may use to understand the characteristics of any given Green Bond. The GBP emphasize the necessary transparency, accuracy, and integrity of environmentally sustainable information that will be disclosed and reported by issuers to stakeholders and that may be increasingly used for strategic decision making by investors.

The GBP have four components:

1. Use of Proceeds of green bonds should provide clear environmentally sustainable benefits including, but not limited to, climate change, natural resources depletion, biodiversity conservation, and/or pollution. These uses should be clearly explained in the legal documentation.

2. A Process for Project Evaluation and Selection

should be clearly outlined by the issuer of a green bond. This should include a process to determine how projects fit within eligible projects under the GBP, criteria that makes a project eligible for using Green Bond proceeds, and the environmental sustainability objectives.

3. Management of Proceeds: The net proceeds of Green Bonds should be linked to the issuer's lending and investment operations for Green Projects.

4. Reporting: Issuers, at least yearly, should provide a list of projects to which Green Bond proceeds have been allocated, including a description of the projects, amounts disbursed, and the expected environmentally sustainable impact.

For more information, visit the Green Bond Principles at <http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/green-bonds/green-bond-principles/>

portfolio managers, foundation officers, underwriters, and other experts in the field who agreed to be interviewed or participated in a side event to the United Nations Climate Summit held at the Surdna Foundation in New York City in September 2014.⁴ Building upon that inquiry into investor demand for green bonds and earlier work by analysts at Clean Energy Group and Croatan Institute on clean energy bond finance and fossil-free endowment management, this paper should be of particular interest to those foundations, investment consultants, and asset managers interested in going beyond fossil-fuel divestment. Divesting from the securities of oil, gas, and coal companies can play an important role in undermining the fossil fuel industry's social license to operate; after all, more than \$200 billion of the over \$700 billion in oil and gas investment came from bond finance in 2013.⁵ But if investors want to finance solutions to the climate crisis, they will ultimately need to allocate capital to more sustainable alternatives to fossil fuels. When properly structured and transparently managed, green bonds can provide useful fixed-income instruments for investing in the transition to a lower-carbon economy.

⁴ Ibid.
⁵ Andy Brogan, "Funding Challenges in the Oil and Gas Sector: Innovative Financing Solutions for Oil and Gas Companies," Ernst and Young, 2014.



THE RAPIDLY GROWING MARKET IN CLEAN ENERGY AND GREEN BONDS

DEFINING GREEN BONDS

IN THEIR MOST BASIC DEFINITION, green bonds are simply debt securities used to finance environmentally beneficial initiatives. The term “green bond” is a relatively new term of art within debt capital markets, but the investment instrument itself is no different from other similarly structured bonds. At its core, a bond is a fixed-income security that structures debt over a specific time period between an institutional borrower (or “issuer” of the bond) and investors who lend capital by buying the security with the expectation of periodic fixed payments of income and the eventual return of principal upon maturity. What distinguishes green bonds from other bonds is therefore not the financial structure of the security per se, but rather the use of proceeds, the projects being financed, or the underlying assets securitized, all of which need to have some demonstrable positive environmental benefits. Like other types of bonds, green bonds can be issued by supranational organizations, sovereign states, government agencies and municipalities, non-profits, and corporations. They can be structured as general obligation bonds, revenue bonds, project bonds, asset-backed securities, or convertible bonds, among other forms of debt.

Although numerous efforts have emerged to standardize what investors mean by “green bonds,” no mandatory requirements related to the use of the term exist at present. Most notably among these initiatives are the Green Bond Principles, a series of voluntary process guidelines administered by the International Capital Markets Association that were developed in 2014 by a group of prominent underwriting investment banks.⁶ Increasing numbers of bonds labeled as green are being certified by independent, third-party verifiers for compliance with the Green Bond Principles.

However, verification is not required for green labeling.⁷ Otherwise “brown” companies can therefore issue self-labeled green bonds, and several European companies with anchor businesses in gas and nuclear energy have done precisely that. At the same time, not all bonds with strong environmental benefits have carried an explicit green label. Indeed, many domestic municipal and corporate bonds financing clean energy projects or pure-play renewable energy companies have not historically been labeled green even though they could readily qualify as such. In fact, many of these bonds provide more

⁶ An updated version of the Green Bond Principles was released in 2015, calling for increased oversight and verification. See [“Green Bond Principles, 2015: Voluntary Process Guidelines for Issuing Green Bonds,”](#) International Capital Markets Association, March 27, 2015. As of April 2015, 85 green bond issuers, investors, and underwriters have become members of the Green Bond Principles.

⁷ Mike Cherney, [“Updated Green-Bond Guidelines Show ‘Incremental Progress.’”](#) Wall Street Journal, MoneyBeat Blog, March 27, 2015.



demonstrable solutions to climate change than some other bonds marketed as “green.” For the purposes of this study, we consider any bond used to finance energy efficiency, renewable energy generation, or clean energy infrastructure to be a green bond.

WHAT DO GREEN BONDS FINANCE?

Over recent years green bonds have financed a wide array of environmental projects and initiatives for a diversifying set of issuing institutions and agencies.

Among leading examples of the kinds of projects and themes financed by green bonds that foundations would find relevant to their own concerns include the following:

- **Global sustainable development and climate change:** Funders interested in global sustainable development can invest in a wide range of green bonds issued by development banks working in Asia, Africa, Europe, and Latin America.
- **Place-based investment:** Many green bonds are highly targeted geographically in specific cities and states, so foundations with geographic areas of programmatic concern can use them as place-based investments.
- **Corporate sustainability:** Major corporations are issuing green bonds specifically to finance environmental projects and corporate sustainability initiatives, ranging from hybrid and electric cars to energy efficient retrofits of manufacturing facilities.
- **Green building:** Real Estate Investment Trusts (REITs) have begun issuing green bonds to finance LEED-certified commercial real estate facilities.
- **Renewable energy and sustainable infrastructure:** Pure-play solar, wind, and other clean energy and sustainable infrastructure companies are increasingly issuing corporate bonds and asset-backed securities, across the credit-quality spectrum.
- **Water:** Long-term water infrastructure, conservation, and restoration projects are being financed through green municipal bonds, issued by cities, states, and public water utilities.

Financing these kinds of projects and themes requires investors and issuers to work together to do deals, and our research has begun to identify numerous examples of notable deals that constitute a diverse series of emerging models of green bond finance. Among several of the more noteworthy green bond issuers and deals include the following:

Los Angeles Department of Water and Power (LADWP): In 2010 LADWP, the nation’s largest public utility, worked with the California State Treasurer’s office to tap the state’s allocation of federal tax credits and issue more than \$150 million in taxable Qualified Energy Conservation Bonds and Clean Renewable Energy Bonds. The 17-year revenue bonds were not labeled as “green,” but they have nevertheless financed some of the nation’s largest utility-scale renewable

While many investors may first think of venture capital as the primary arena for clean energy investment, investment opportunities in solutions to climate change now extend across asset classes.

energy power projects installed, owned and operated by a municipality. The three projects, including the Adelanto Solar Power Project and the Pine Tree Wind Farm, were projected to generate more than 30MW in clean energy for the city. As part of the city's Climate Action Plan and Renewable Portfolio Standard, the utility is aiming to shift 35 percent of its power generation to renewables by 2020.

Delaware Sustainable Energy Utility: In 2011, the Delaware Sustainable Energy Utility financed approximately \$70 million in tax-exempt debt through a series of AA+ rated revenue bonds with maturities ranging from one to 20 years. Although the bonds were not labeled “green,” the proceeds have gone to finance energy efficiency improvements in public buildings at various agencies and public institutions of higher education across the state. These retrofits have been projected to create more than 900 jobs and reduce greenhouse gas emissions by more than 660,000 metric tons of carbon dioxide over the life of the bond.⁸ The deal aggregated energy efficiency financing for five different public state institutions, including Delaware State University, Delaware Technical and Community College, the Office of Management and Budget, Department of Correction, and Department of Services for Children, Youth and Their Families. Indeed, the Delaware Sustainable Energy Utility, organized as a tax-exempt nonprofit organization, was created explicitly for the purpose of bundling clean energy and efficiency projects among state agencies that might not otherwise attract the same interest among institutional investors. The Sustainable Energy Utility is now being reviewed by other states and localities as a model for scaling up financing for energy efficiency infrastructure projects across multiple agencies and institutions.

Commonwealth of Massachusetts: After a large oversubscription from investors of its initial \$100 million green bond offering in 2013, the Commonwealth of Massachusetts announced its second labeled green bond series of \$350 million in infrastructure investment in September 2014. It generated broad interest from both retail and institutional investors, with orders exceeding \$1 billion for \$350 million worth of bonds. The proceeds are dedicated to fund environmentally beneficial projects across the state. The 10-year, tax-exempt general obligation bonds were rated AA+, backed by the full faith and credit of the state. Massachusetts is using the green bonds to help finance projects in four categories: clean water, energy efficiency and conservation, river revitalization and habitat restoration, and open-space protection and environmental remediation. Although the state is not seeking third-party certification for its green bonds, it has committed to provide detailed “impact reports” on the use of proceeds.⁹

⁸ [“Portrait of a Successful Financing,”](#) Foundation For Renewable Energy and Environment Sustainable Energy Program, 2013; [“Sustainable Energy Utility \(SEU\),”](#) Foundation for Renewable Energy & Environment, Policy Brief, January 2013; and [“Delaware Sustainable Energy Utility Energy Efficiency Revenue Bonds,”](#) NW Financial, accessed March 30, 2015.

⁹ See, e.g., [“Investing in a Greener, Greater Commonwealth,”](#) MassGreenBonds, 2013 Series D, First Quarterly Investor Impact Report, Quarter Ended August 2013; and Mike Cherney, [“Massachusetts Goes Greener with Latest ‘Green Bond’ Sale,”](#) Wall Street Journal, September 17, 2014.



New York State Energy Research and Development Authority (NYSERDA):

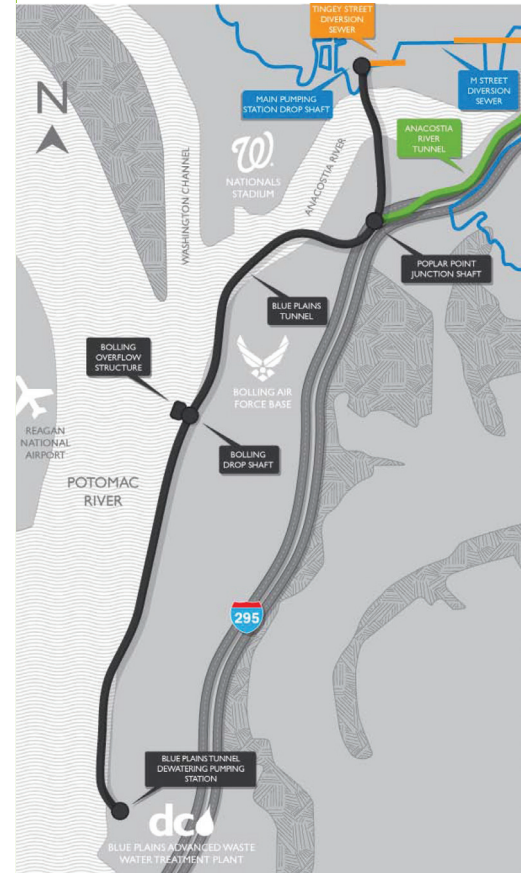
In August 2013, NYSERDA announced that it had raised \$24.3 million in Residential Energy Efficiency Financing Revenue Bonds to finance and refinance loans that were issued through the Green Jobs-Green New York program for energy efficiency improvements. The bonds are guaranteed by the New York State Environmental Facilities Corporation through an innovative application of the largest Clean Water State Revolving Fund program in the US.¹⁰ The deal was recognized by The Bond Buyer as the “Deal of the Year” for Small-Issuer Financing.¹¹

Hannon Armstrong Sustainable Infrastructure Capital, Inc.: This publicly traded REIT (NYSE:HASI), based in Annapolis, Md., provides specialty infrastructure financing to energy efficiency and renewable energy markets. In 2013 Hannon Armstrong issued \$100 million in what it terms “Sustainable Yield Bonds,” structured as asset-backed securities. The bonds’ yields are derived from the cash flows of 100 solar, wind, and other sustainable infrastructure projects across 20 different properties. The bonds, scheduled to mature in 2019, were unrated and privately placed with a 2.79% coupon. They were estimated to reduce greenhouse gas emissions by more than 61,000 metric tons.¹²

The District of Columbia Water Authority: Over \$350 million in taxable green bonds with a 100-year tenor were issued in 2014 by the public water agency of the nation’s capital—the first “century” bond ever issued for a water infrastructure project. The municipal bond proceeds are financing part of the DC Clean Rivers Project. The DC Water Authority opted to use an independent, third-party verifier to provide a second opinion on its compliance with the Green Bond Principles.¹³

Vornado Realty Trust: Last year, this publicly traded REIT (NYSE:VNO) issued \$450 million in 2.5% five-year senior, unsecured notes, labeled as green bonds, to finance “eligible green projects” that meet LEED certification requirements in existing commercial properties.

The World Bank Group: Since 2008 the World Bank and its private-sector finance arm, the International Finance Corporation (IFC), have issued nearly \$12 billion in labeled green bonds, which aim to finance existing bank projects that have “climate-friendly” attributes. Many other development banks have followed suit with green bonds targeting specific regions in the developing



Map Credit: DC Water

¹⁰ Michael Curley and Lindsay Haislip, “The Newest Player in the Climate Change/Renewable Energy Game: EPA’s \$100+ Billion Clean Water State Revolving Fund,” *Environmental Law Reporter* 44, no. 4 (2014).

¹¹ “New York State Earns a ‘Deal of the Year’ Award for First-In-the-Nation Residential Energy-Efficiency Financing Approach,” NYSERDA, December 6, 2013.

¹² Herman Trabish, “The \$100 Million Green Bond from Hannon Armstrong: New financing for renewables and energy efficiency promises GHG cuts,” *GreenTechMedia*, December 2013.

¹³ Mike Cherney, “Washington, D.C., ‘Green’ Bond Greeted With Strong Investor Demand,” *Wall Street Journal*, July 10, 2014.

world. Originally developed in dialogue with Scandinavian pension funds, these supranational bonds are generally high-quality, AAA-rated securities.

Numerous other cities around the world, states in the US, supranational development finance agencies in Asia, Africa and Europe, and corporations—from Unilever to Toyota—have issued a wide variety of green bonds spanning the spectrum of credit quality and duration. This growing range of issuers, terms, and environmental impact provides foundations expanding opportunities to participate in this rapidly growing space.

GREEN BOND GROWTH IS ATTRACTING ATTENTION

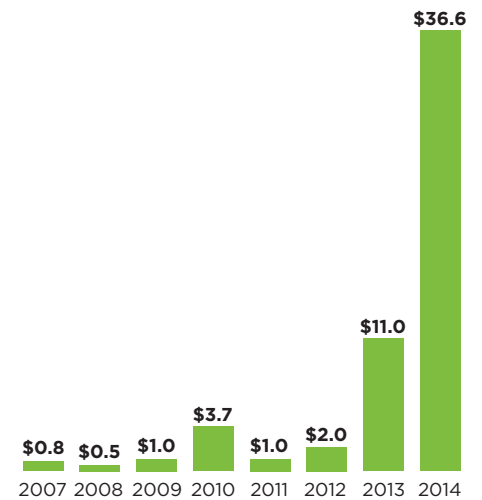
By some measures, the green bond market has tripled in size over the last year. The \$37 billion in labeled green bonds issued in 2014 amounted to nearly all of the cumulative green bonds tracked by Bloomberg New Energy Finance since 1995 (Figure 1).¹⁴ More than 70 institutions issued green bonds in 2014, ranging from supranational organizations such as the World Bank to corporations such as Solar City, to states such as Massachusetts and municipal agencies such as Washington, DC’s public water authority (Figure 2). The green bond market is growing so rapidly that Bank of America Merrill Lynch projects that by 2020 there could be up to \$1 trillion in new green bonds issued.¹⁵

Investment managers, credit rating firms, and institutional investors have responded rapidly to the growth in the market over the last several years. A handful of managers, including BlackRock, Calvert Investments and State Street Global Advisors, have begun to develop dedicated green bond products and strategies, and many managers provide exposure to green bonds through a variety of fixed-income strategies, particularly those that incorporate environmental, social, and governance (ESG) criteria into their investment process. Numerous green bond indices were released during the second half of 2014, creating a new series of boundaries and benchmarks for the market. S&P Dow Jones Indices launched two green bond indices in July. Bank of America Merrill Lynch debuted one in October, and Barclays and MSCI partnered on a family of offerings launched in mid-November.¹⁶

Many major investors, from pension funds such as TIAA-CREF and CalSTRS to corporate treasurers at companies such as 3M and Microsoft, have also purchased green bonds.¹⁷ Scandinavian pension funds played a catalytic role in the development of the World Bank’s first green bonds, and numerous faith-based and socially responsible investors have become mainstay purchasers of these offerings. Insurance companies, which have relatively high allocations on

FIGURE 1.

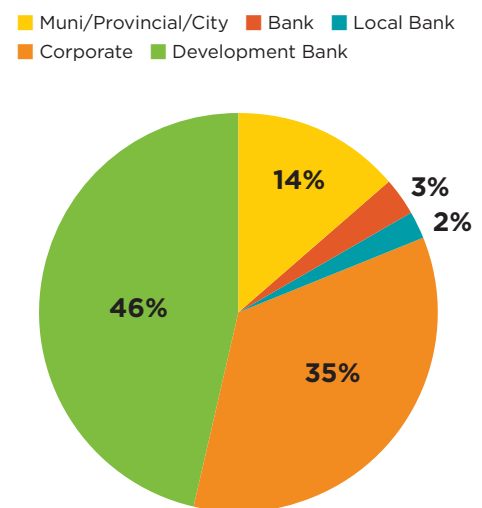
Labeled Green Bond Issuances
(in billions)



Source: Climate Bonds Initiative.

FIGURE 2.

2014 Green Bonds by Issuer Type



Source: Climate Bonds Initiative.

¹⁴ Tess Olsen-Rong, “Final 2014 Green Bond Total is \$36.6bn,” Climate Bonds Initiative, January 2015; and Climate Bonds Initiative, “Labelled Green Bonds Data,” April 21, 2015.

¹⁵ Barry Critchley, “Attractive Returns Make Green Bonds a ‘Game Changer,’” Financial Post, March 13, 2015.

¹⁶ Katie Gilbert, “Index Rush Pushes Green Bonds toward the Mainstream,” Institutional Investor, December 1, 2014.

¹⁷ Katie Gilbert, “Green Bonds Gain Investors and Climate-Friendly Credentials,” Institutional Investor, May 9, 2013.

average to fixed-income investments, have taken a particularly strong interest in green bonds. For example, Zurich Insurance Group, one of the world's largest insurers, has begun to implement a \$2 billion commitment to invest in green bonds within its \$200 billion portfolio.¹⁸ According to Zurich's Chief Investment Officer Cecilia Reyes, "Green bonds are a good fit with Zurich's investment strategy and our impact-investing aspirations. They allow us to invest for sustainable impact at a return fully compensating for the risk."¹⁹

GROWING PAINS

With growth in the green market has also come growing pains. Diverging terminology and competing efforts to create standards have created confusion for some investors. What makes a green bond "green"? How do they differ from other bonds? In addition to the Green Bond Principles, the Climate Bonds Initiative, a leading London-based booster of green bonds, has established a standard-setting process around the category of "climate-friendly" bonds, which encompass an even larger set of bonds valued globally at some \$500 billion (including nearly any railroad transport bond).²⁰ Investors understandably ask what difference is there between "green bonds" and "climate bonds"? Are all "climate bonds" transparently providing investment solutions to climate change? Should clean energy bonds that finance the generation, storage, and transmission of renewable energy and the implementation of energy efficiency measures be considered components of the growing green bond market even if they may not be labeled as "green"?²¹ Concerns about "greenwashing," labeling, marketing, and lack of transparency are commonly voiced. Skepticism about pricing and performance is also widespread, in a challenging interest-rate environment for fixed-income investors. Earlier this year, a group of investors, coordinated by the Ceres Investor Network on Climate Risk, issued a "statement of investor expectations for green bonds," calling for greater transparency and common standards in the market.²² Foundations were notably absent from this initiative.

Meanwhile, the supply of bonds has not yet caught up with investor's growing appetite for these kinds of instruments, as repeated incidents of oversubscription to green bond issuance highlight. As we have noted elsewhere and we highlight in the final section of this paper focused on recommendations, green bond deal flow needs to develop, diversify, and

Green bond deal flow needs to develop, diversify, and deepen in ways that would meet the needs of foundation investors and the wider market.

¹⁸ Imogen Rose-Smith, "[BlackRock Throws Its Weight Behind Impact Investing](#)," Institutional Investor, March 18, 2015.

¹⁹ Zurich Insurance Group. "[Zurich Makes a Significant Commitment to Green Bonds: Interview with Cecilia Reyes, Chief Investment Officer](#)." Accessed April 1, 2015.

²⁰ "[Bonds and Climate Change: The State of the Market in 2014](#)." The Climate Bonds Initiative and HSBC, 2014.

²¹ Bloomberg New Energy Finance has similarly tracked clean energy bonds as part of the green bond market. See "[Green Bonds Market Outlook 2014: Blooming with New Varietals](#)," Bloomberg New Energy Finance, June 2, 2014.

²² "[A Statement of Investor Expectations for the Green Bond Market](#)," Ceres, December 4, 2013.

Wallace Global Fund: Green Bonds within a Total Portfolio Approach to Mission-Related Investing

WALLACE GLOBAL FUND, a mid-sized family foundation that has been a leader in the movement to divest from fossil fuels and invest in climate solutions, has incorporated green bonds into its fixed-income allocations as part of a wider effort to re-align its investments with the Fund's grantmaking mission.

Wallace Global Fund's Executive Director Ellen Dorsey has been a vocal proponent of the fossil-fuel divestment

Green bonds have become an important component of Wallace Global Fund's total portfolio approach to investing in climate solutions and a new energy economy.

movement and the important role that foundations should play in supporting the movement as both grantmakers and mission investors. As a foundation whose grantmaking supports initiatives for environmental sustainability and corporate

accountability, she and the investment committee found it critical to use the Fund's investment portfolio to support this work as well. As Dorsey put it to Bill Moyers in an interview last year, "If your investments are driving the problem that you're asking your grantees to solve, that's a problem."¹ The Fund was one of the initial signatories to Divest-Invest Philanthropy.

¹ Ellen Dorsey, "Putting the Freeze on Global Warming," Moyers and Company, April 25, 2014.

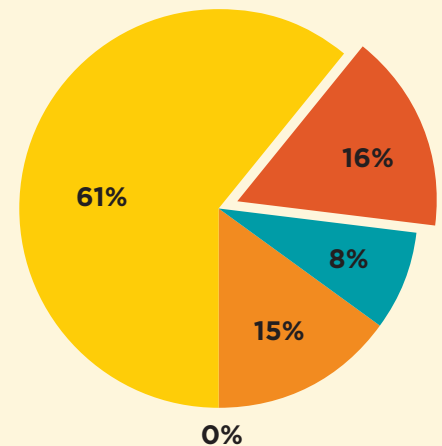
A central piece of Wallace Global Fund's mission investing strategy related to fighting climate change has been to shift its own assets to a 100% fossil free portfolio, with five percent explicitly targeted to make proactive, high-impact mission-related investments. The foundation is on track to go completely fossil free by summer 2015, and it rapidly exceeded its five-percent impact investing target by allocating more than 10 percent of the portfolio to high-impact investments, primarily through private equity and fixed income. Overall fixed income amounts to 16 percent of the portfolio, and several of the Fund's fixed-income impact managers within that broader allocation have provided exposure in limited ways to the green bond market as part of these pro-active environmental investment mandates (Figure 3). One of these fixed-income strategies is with Community Capital Management (CCM), a manager invested in market-rate, high-quality green bonds with transparent reporting of impact and geographic targeting.² Other sustainable fixed-income managers include Pax World Management and Generation Investment Management. The Fund's investment in Generation's Credit Fund has involved debt investments in a variety of companies working on solar energy, residential energy efficiency, food waste reduction, and sustainable agriculture. Although overall exposure to green bonds remains relatively limited, they have nevertheless become an important component of Wallace Global Fund's total portfolio approach to investing in climate solutions and a new energy economy.

² "2014 Annual Impact Report," Community Capital Management, 2015.

FIGURE 3.

Wallace Global Fund Asset Allocation as of December 31, 2014

- Domestic Equities
- Fixed Income
- International Equities
- Alternative Strategies
- Short-term securities/cash/other



Source: Wallace Global Fund.

deepen in ways that would meet the needs of foundation investors and the wider market.²³ Scandinavian pension funds initially seeded the first supranational green bonds issued by the World Bank, in order to meet their very specific investment requirements for high-quality, AAA-rated securities. Philanthropy can now play a parallel role in helping to guide the growth of the market in other directions, by ensuring that green bonds are transparently providing the financial and environmental attributes foundations and other tax-exempt institutional investors are seeking.

INTEGRATING GREEN BONDS INTO FOUNDATION INVESTMENT PORTFOLIOS

Foundations' fixed-income needs vary widely. Traditionally, fixed-income investments have provided relatively stable, secure income streams to foundations with annual, federally mandated five-percent grantmaking payout requirements. As Figure 4 highlights, US foundations overall have just under 10 percent of their endowment assets allocated to fixed income, with larger foundations having lower allocation percentages on average than their smaller foundation counterparts.²⁴ With foundations now managing more than \$715 billion in combined assets, this means approximately \$65 billion in foundation endowment capital is deployed in fixed-income strategies. Although fixed income often constitutes one of the smaller wedges in a typical foundation's asset allocation, the total capital invested in fixed income still amounts to more than the \$52 billion in total philanthropic grantmaking by all foundations in any given year. It is worth bearing in mind that the overwhelming majority of philanthropic foundations—approximately 98 percent of the roughly 84,000 private foundations in the US—have less than \$50 million in total assets and consequently dedicate a larger proportion of their assets to debt strategies. According to an annual survey of foundations in this size range, 22 percent of their portfolios remain allocated to fixed-income investments (Figure 5).²⁵ Green bonds therefore provide an important opportunity for foundations to take full advantage of their existing participation in debt capital markets, whether to mitigate risk, provide more secure streams of investment income, or expand their philanthropic reach.

Because most foundations are tax-exempt, nonprofit organizations, they receive less benefit from buying tax-exempt bonds, which carry slightly lower yields because their interest is exempt from income tax. Tax-exempt green

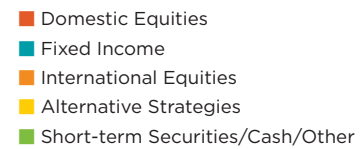
²³ Joshua Humphreys, David Roswell, and Robert Sanders, "What Investors Want: How to Scale Up Demand for US Clean Energy and Green Bonds," Clean Energy Group and Croatan Institute, 2014, p. 7.

²⁴ "Private Foundations' Fiscal Year 2013 Investment Returns Build on FY2012 Gains," Council on Foundations, 2013.

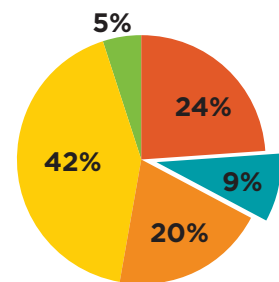
²⁵ "2014 Foundation Source Annual Report on Private Foundations," Foundation Source, 2014.

FIGURE 4.

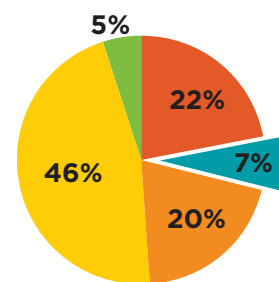
Average Asset Allocations of Private Foundations (FY2013)



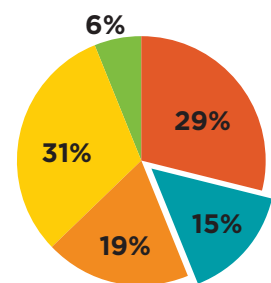
ALL FOUNDATIONS



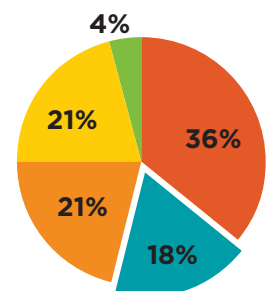
OVER \$500 MILLION



\$101 - \$500 MILLION



UNDER \$101 MILLION



Source: Council on Foundations and Commonfund Institute.

bonds, including many municipal bonds, may therefore not provide the financial fit that many foundation finance officers seek when they allocate capital to fixed-income investments. Foundations will need to work closely with their advisers, consultants, and asset managers to identify appropriate green bond opportunities that meet their portfolio risk, return, and mission-related requirements. Fortunately, as we have seen above, the green bond market also includes numerous taxable municipal, corporate, and project bonds that would readily meet standard credit investment criteria for tax-exempt investors. Many of these models of taxable bond deals presented above are ripe for replication, and in our earlier research on investor demand, we have stressed the need for issuers and underwriters to issue more higher-yielding taxable green bonds.²⁶ In much the same way that European pension funds played active roles in structuring high-quality supranational green bonds with financial institutions such as the World Bank, foundations could play a similar role in collaborating with issuers, underwriters, and fixed-income asset managers to communicate their demand expectations and fixed-income requirements, in terms of financial characteristics, duration, and program-related social and environmental impact and alignment.

GREEN BONDS AS MISSION INVESTMENTS

For foundations with environmental grantmaking programs, the environmental attributes of green bonds open even more opportunities to support the use of these instruments as mission-related or program-related investments (PRIs). Market-rate mission investments can be made by buying green bonds directly or by allocating capital to fixed-income managers and strategies already providing exposure to them. While we have yet to see any green bonds used by foundations as PRIs, foundations with clear programmatic alignment with the projects financed with green bond proceeds could certainly provide loan guarantees or other forms of credit enhancement in order to support specific deals or add a layer of “soft capital” to bring other market-rate investors into green bond deals at larger scale—in much the way that PRI makers have done in community development finance in the past.

Historically, debt investing has provided a pillar of mission-related investing, so experienced mission investors already have a clear awareness of the role that debt can play in advancing their philanthropic and financial objectives. Indeed, according to the most recently available data from the Foundation Center (Figure 6), more market-rate mission investments are being made in fixed income than in any other asset class. Yet curiously little attention has been given to green bonds as an integrated mission investment opportunity for funders focused on climate change, for example.²⁷ Until recently, according to

²⁶ Humphreys, et al., “[What Investors Want](#).”

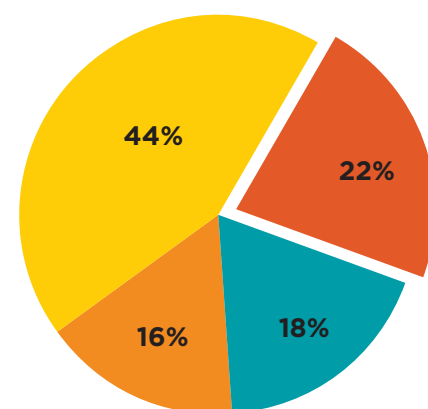
²⁷ Highlighting how rapidly green bonds have emerged on the scene, a leading resource for integrating mission investment with climate change grantmaking makes no mention of green bonds, for example (though it does refer to a community development bond deal that financed solar energy in Ohio). See Mark

FIGURE 5.

Average Asset Allocation of Private Foundations with Assets under \$51 Million (FY2013)

- Equity
- Fixed Income
- Other
- Cash

UNDER \$51 MILLION



Source: Foundation Source..

the chief investment strategist at a leading fixed-income manager involved in impact investing and green bonds, “many foundations were looking for impact investing or mission investing without too much awareness of the specifics of their goals. That has changed very dramatically, and now foundations are specifically asking about climate awareness.”²⁸

FROM DIVESTMENT TO RISK MANAGEMENT

The movement for fossil-fuel divestment is widely acknowledged as driving this newfound awareness of carbon risk and interest in investing in climate solutions. Initiatives such as Divest-Invest Philanthropy, which now counts among its signatories some 80 philanthropic foundations with approximately \$5 billion in assets under management, including prominent family foundations and public charities such as the Rockefeller Brothers Fund, the Schmidt Family Foundation, the Wallace Global Fund, and The Sierra Club Foundation, have begun a major push within the philanthropic community over the last year and a half, supported by other foundation affinity groups such as Confluence Philanthropy and Mission Investors Exchange. More than most other institutional investors grappling with divestment, Divest-Invest Philanthropy foundations have made an explicit effort to focus not only on divestment from fossil fuels but also on investment in climate solutions and a new clean energy economy.

Even more recently, though, major foundations such as the Bill and Melinda Gates Foundation and the Wellcome Trust have found themselves publicly petitioned by activists at 350.org, who initially targeted college and university endowments, to divest from fossil fuel companies because the investments undermine their philanthropic programs.²⁹ Within a month of the campaign’s launch in March 2015, more than 200,000 individuals from more than 170 countries signed onto 350.org’s petition, coordinated with *The Guardian* newspaper, calling on the Gates Foundation and the Wellcome Trust to divest their endowments from fossil fuel companies in order to demonstrate leadership amid the climate crisis. At a time when philanthropic portfolios are becoming the object of increasing scrutiny, green bonds provide one potential vehicle for foundations to invest in solutions that support rather than compromise their philanthropic objectives.

In addition to providing opportunities to invest in environmental solutions, green bonds also provide instruments for mitigating carbon and climate risk

Kramer, Adeeb Mahmud, and Serah Makka, “[Maximizing Impact: An Integrated Strategy for Grantmaking and Mission Investing in Climate Change](#),” FSG Social Impact Advisors, 2010.

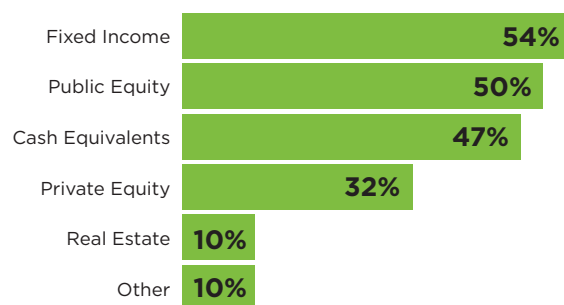
²⁸ Interview with David Sand, Community Capital Management, March 12, 2015.

²⁹ “[Keep It in the Ground](#),” Open Letter to Bill and Melinda Gates, Bill and Melinda Gates Foundation, and Jeremy Farrar and Sir William Castell, Wellcome Trust, *The Guardian*, March 16, 2015.

FIGURE 6.

Asset Classes of Foundations’ Market-rate Mission-related Investments, 2011

(Percent of respondents)



Based on the responses of 74 foundations that engage in market-rate mission-related investing.

Source: The Foundation Center, Key Facts on Mission Investing, 2011.

The Sierra Club Foundation: Focusing on Green Bonds to Invest in Solutions

THE SIERRA CLUB FOUNDATION (TSCF) is a public charity that supports the work of the environmental nonprofit, The Sierra Club, and other organizations. In 2013, TSCF announced plans to divest from fossil fuels as part of a re-alignment of its investments with its mission to promote efforts to educate and empower people to protect and improve the natural and human environment, and of fighting climate change through a successful transition to a resource efficient clean energy economy that better serves people and nature. It is using green bonds as part of its overall strategy to proactively invest in solutions to climate change.

Because The Sierra Club Foundation funds the programming of the Sierra Club, including the “Beyond Coal” campaign and the fossil-fuel divestment programs of the Sierra Student Coalition, the investment committee felt that greater alignment of their investments with their mission was needed. Recently, their focus has shifted from negative screens, which prevent investment in fossil fuel companies, to actively seeking out investments in climate solutions. “It’s a push/pull,” said Ginny Quick, the Foundation’s Chief Financial Officer. “We’re pushing on coal, and pulling on the clean energy side, through what we’re funding and what we’re investing in.”

Green bonds provide an opportunity for this type of proactive investment. As a result, 22 percent of TSCF’s portfolio is allocated to fixed income strategies (Figure 7). 100 percent of their fixed income portfolio is invested in mission-related ESG bond funds, with exposure to a variety of green bonds. This is largely possible thanks to the explosive growth in the green bond market over the past several years. TSCF’s investment committee believes that while mission is part of fiduciary duty, it should not come at the expense of returns. Green bonds, with profiles equivalent to other fixed income investments, have proven satisfactory in this regard. The Sierra Club Foundation is invested in green bonds through the Calvert Green Bond Fund and Breckinridge Capital Advisors.

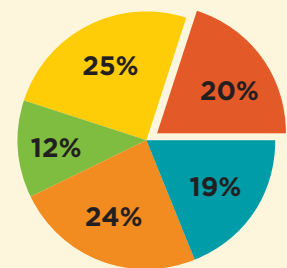
The Sierra Club Foundation sees its initial green bond allocations as a first step. “As we find better ways to fund solutions, and as the whole sector evolves, we will continue to find the options that best serve our mission,” Quick said. She views the whole field of green bonds developing quickly, and sees the need to continuously tweaking their portfolio to respond to economic conditions and the potential for greater impact. Additionally, while TSCF is proud of its green bond allocation, Quick added, “I’d like to see greater transparency in these bonds, and I’m not alone in that.”

FIGURE 7.

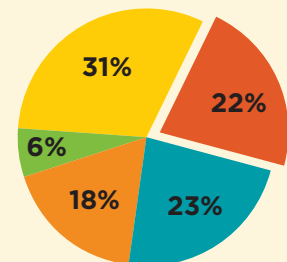
The Sierra Club Foundation’s Asset Allocation as of December 31, 2014

- Domestic Equities
- Fixed Income
- International Equities
- Alternative Strategies
- Short-term securities/cash/other

ENDOWMENT INVESTMENTS (25% of TSCF Assets)



LONG-TERM OPERATING INVESTMENTS (34% of TSCF Assets)



Source: The Sierra Club Foundation.

at a time when credit analysts are increasingly beginning to understand—and price—the financial risks associated with investor exposure to carbon-intensive fossil fuels. This makes them appropriate not only for mission investors and climate funders but also for any foundation conducting comprehensive risk management in its fixed-income strategies. Standard & Poors, for example, has begun to identify mid-market oil and gas companies as well as “petrostates” as candidates for potential credit downgrades, due to the risks associated with stranded carbon assets and greenhouse gas emissions regulations, even in the

Green Bonds within Total Portfolio Activation

TOTAL PORTFOLIO ACTIVATION

(TPA) is one framework that can help foundations strategically seize opportunities in the green bond space, especially if they are doing it for mission-related reasons. TPA provides investors with a set of conceptual and analytical tools for evaluating the impact—both positive and negative—of investments across all asset classes in a diversified portfolio.¹ Foundations can apply the TPA process to evaluate their current holdings and identify gaps between their key programmatic areas and the social and environmental impact of their investments. A TPA gap analysis also clarifies the nature of a given investor's impact opportunity set, helping them to re-allocate the portfolio from investments generating negative impacts to those proactively pursuing positive social and environmental performance.

For foundations participating in Divest-Invest Philanthropy, TPA therefore provides a more holistic approach for going fossil-free across asset classes.² For the fixed-income asset class, in particular, the TPA portfolio mapping process can help an investor see more clearly that what might traditionally be understood as a neutral exposure to, say, an unscreened total return bond fund, in fact, can be a source of negative impact and mission misalignment. After all, as Figure 8 highlights, an unscreened bond fund has embedded exposures to fossil fuels and other forms of carbon risk that will pull the portfolio's overall impact into negative territory.

By contrast, fixed-income strategies that exclude fossil fuels in favor of investing

¹ Christi Electris, et al. "Total Portfolio Activation: A Framework for Creating Social and Environmental Impact Across Asset Classes." Tellus Institute, 2012.

² Joshua Humphreys, "Institutional Pathways to Fossil-Free Investing," Tellus Institute, May 2013, pp. 12-15.

FIGURE 8.

TPA Fixed-Income Social and Environmental Impact Analysis



in energy efficiency, renewables, and other sustainable projects will provide greater positive impact, depending on the investment strategy. While a variety of strategies provide exposure to green bonds, the overall impact profile of any single fund can vary widely, depending on its strategy and underlying holdings (Figure 8). For example, a dedicated, high-quality green bond strategy may have a positive environmental impact profile, but its social impact may be much weaker than bond funds that also provide an environmental, social and governance (ESG) investing overlay, as many ESG fixed-income managers such as Breckinridge, Calvert Investments, Everence, and Shelton Capital, provide. A more community-focused or faith-based bond fund with green bond holdings may have an even stronger positive social impact because of a more dedicated strategy of incorporating social or place-based factors into the investment

process. For foundations with multiple programmatic areas of interest, TPA provides a very useful, highly strategic way to optimize the mission-related investment impact of the entire portfolio, and to do so with a sensitivity to the imperatives of each asset class.

At the same time, in order to apply the analytics of the TPA process comprehensively, bond issuers and bond buying asset managers will need to provide greater transparency about the social and environmental profiles of their underlying bond exposures. Here again, philanthropy has a major role to play in programmatically supporting the creation of these kinds of tools and encouraging asset managers, investment consultants, underwriters, bond issuers, and other key players in the bond markets to disclose key data and information about the social and environmental impact of all bonds.

absence of global climate policy.³⁰ Coal companies have already experienced credit downgrades as a wave of bankruptcies ripples across the industry. And as Patriot Coal's bankruptcy made clear, bondholders may find themselves in direct conflict with workers and labor unions over how to unwind the assets of bankrupt coal concerns. In addition to the sheer financial risks involved, foundations in particular face severe reputational risks if they become targeted in public campaigns or their efforts to limit investment losses shift the costs of coal's collapse even more fully onto struggling coal workers.³¹

Green bonds, by contrast, have been documented to provide on average lower credit risk and lower return volatility, based on performance analyses conducted by Bank of America Merrill Lynch Global Research as part of its recent development of a Green Bond Index.³² Foundations may therefore find the risk-return profile of green bonds sufficiently satisfying to invest in them on their own merits—for the financial characteristics that they bring to a diversified portfolio, even if they may not be divesting fully from fossil fuels.³³

GREEN BONDS AS PLACE-BASED INVESTMENTS

Certain green bonds can also present opportunities for place-based investing, an emerging trend within the sustainable, responsible and impact investing field.³⁴ State and local municipal bonds, government agency debt, and development bank bonds often have geographic mandates. A foundation with a focus in a particular state could, for example, work with an investment manager to identify opportunities to buy agency mortgage-backed securities (MBS) that finance green affordable housing in that geography, for example.³⁵ Fannie Mae's Green Preservation Plus and the Federal Housing Administration's PowerSaver Loan programs provide two examples of high-quality MBS opportunities that carry implicit government guarantees and can be geographically targeted. Municipal bonds generally finance projects in specific cities, counties, or states. Green muni bonds, for instance, have been issued in California, Connecticut, Delaware, Massachusetts, and New York, among other states, so foundations with geographic target areas can identify green bonds issued in those particular places. Development bank green bonds often have very broad regional coverage. Whereas bonds from organizations such as the World Bank Group may finance climate adaptation and mitigation across the developing world, green bonds from the African or Asian Development Banks can be more narrowly targeted, though not as much as municipal bonds.

³⁰ Simon Redmond and Michael Wilkins, "What a Carbon-Constrained Future Could Mean for Oil Companies' Creditworthiness," Standard & Poor's Rating Services, March 1, 2013.

³¹ Tiffany Kary, "Patriot Coal Bondholders Seek Trustee for Bankruptcy," Bloomberg, March 29, 2013; and "Unburnable Carbon 2013: Wasted Capital and Stranded Assets," Carbon Tracker Initiative, 2013.

³² "The Greening of the Bond Market," Merrill Lynch.

³³ Steven Anderson, "Going Green in Munis—for the Right Reasons," *Reno Gazette-Journal*, April 2015.

³⁴ *Report on US Sustainable, Responsible and Impact Investing Trends*, US SIF Foundation, 2014; Michael Shuman, "Open for Business: Building Local Economies through Place-Based Investing," Confluence Philanthropy, 2015.

³⁵ See "Green Bond Investment Opportunities," Community Capital Management, September 2014, p. 8-9.

Green bonds also provide instruments for mitigating carbon and climate risk at a time when credit analysts are increasingly beginning to understand—and price—the financial risks associated with investor exposure to carbon-intensive fossil fuels.

CULTIVATING THE FIELD: RECOMMENDATIONS FOR PHILANTHROPY'S ROLE

Clearly opportunities abound for foundations to become more active investors in green bonds, but the philanthropic community also has a unique role to play on the programmatic side of their operations—as grantmakers, conveners, and strategic partners. As discussed earlier, the rapid recent growth in the market for green bonds has generated growing pains. The supply of green bonds has remained limited, outpacing investor demand and leading to widespread oversubscription and pricing issues. Investors, as we have seen, have also expressed confusion about what makes a bond green and concern about the transparent use of the proceeds to finance projects with measurable environmental impacts. Tax-exempt institutional investors such as foundations, with a weak appetite for tax-exempt muni bonds, have voiced frustration with the limited supply of taxable green bonds that meet their investment criteria, particularly related to yield, size, and liquidity. Green bonds also face similar kinds of constraints that clean energy investment has encountered more generally, including policy barriers, institutional investor inertia, regulatory constraints, and a need for a greater depth and breadth of investment vehicles, among others.³⁶

In short, there are numerous opportunities for foundations to intervene strategically to cultivate the field of green bonds as part of an integrated investment strategy. Alongside direct investments in green bonds, program grants can be powerful tools for planning, implementing and learning from the deployment of climate solutions, thereby reducing risk for those who develop and finance projects. One very good example of this early market development support has been the use of program grants to fund technical assistance for field-building activities, particularly in order to support specific resilient power projects in vulnerable communities. These technical assistance funds can be used to determine the economic and technical feasibility of specific projects and cover some of their pre-development costs. This greatly improves the chances of a project being implemented. Foundations have the opportunity to expand their support for this technical assistance fund model in order to cultivate the field. The following recommendations provide several key ways that foundations can support the development of the green bond market in constructive directions.

³⁶ Robert Sanders, et al., “Reduce Risk, Increase Clean Energy: How States and Cities are Using Old Finance Tools to Scale Up a New Industry,” Clean Energy and Bond Finance Initiative, Clean Energy Group and the Council of Development Finance Agencies, August 2013.



1. **Research and Outreach:** Much more extensive and targeted research and outreach are needed within the foundation community in order to assess the actual scope and scale of foundation demand for green bonds, as well as the obstacles foundations may currently be encountering. Philanthropy could play strategic roles in sponsoring this kind of research and outreach, perhaps in partnership with relevant foundation affinity groups.
2. **Resources:** More in-depth analyses and case studies of foundation experiences with green bonds would be valuable resources to encourage learning among peers. Foundations and foundation affinity groups could play key roles in supporting the development of these resources for both their peers and the wider community of green bond market players who need a better understanding of foundations' needs as investors.
3. **Replication:** Foundations could also support efforts to replicate and scale up the kinds of model green bond financing deals highlighted above that have provided the right kinds of financial characteristics and environmental impact. Green bond deal flow needs to develop, deepen, and diversify, so foundations can play a key role in that process of development and diversification—replicating what has worked well to new geographies, at broader scales, and with new kinds of bond issuers.
4. **Join the Green Bond Principles:** Foundations with a strong interest in this field should join the Green Bond Principles as Members or Observers. The Principles will likely become an important network and resource in this space, and as we observe above, foundations have been largely absent from these kinds of initiatives even though they often have a much stronger expectation for transparency and greater concerns about the measurable environmental impacts of projects being financed by green bonds than many other institutional investors.
5. **Convening:** Finally, foundations can use their convening powers in a variety of ways to support these objectives:
 - Foundations can continue to bring broader groups of stakeholders involved in the green bond market together to discuss pressing issues in the field, as the Surdna Foundation did during the United Nations Climate Summit in New York in September 2014.
 - Foundations can host more focused convenings among philanthropic peers in order to address issues specific to the needs of foundation endowments. Given that foundation fixed-income strategies vary widely, particularly as a function of the size of endowments, it may be productive to convene separate groups of foundations, based on their size and type. The needs and expectations of larger foundations with more than \$1 billion in assets, as

Philanthropy has unique opportunities to support this growing field and to ensure that its direction supports climate resilience and the transition to a cleaner energy future.

we have seen, will often differ from small-to-mid-size foundations, with less than \$500 million. Hosting panels or side events at existing meetings of foundation affinity groups would be one avenue to pursue.

- Several foundations expressed an interest in exploring the idea of using PRIs to provide loan guarantees, subordinated debt, and other credit enhancements to complement tax incentives and other tax credit programs. A convening focused specifically on using PRIs to support green bond finance could be valuable.
- As we note above, groups of foundations could also come together to communicate directly to issuers, underwriters, consultants and fixed-income managers their desire to see more green bonds that meet their investment needs, particularly taxable green bonds of more limited duration with higher yields and transparent use of proceeds to support climate solutions and other positive environmental impacts.

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