HOW TO ISSUE A GREEN MUNI BOND

THE GREEN MUNI BONDS PLAYBOOK

Green City Bonds

Climate Bonds Initiative · CDP Driving Sustainable Economies · C40 Cities Climate Leadership Group · NRDC · Ceres · As You Sow

PART I: U.S. GREEN MUNI BOND PRIMER

SETTING THE SCENE: GROWING GREEN BOND MARKET OFFERS AN OPPORTUNITY TO MEET U.S. INFRASTRUCTURE AND CLIMATE INVESTMENT NEEDS

U.S. municipalities have vast infrastructure, climate mitigation, and adaptation investment needs

It is estimated that the United States must invest $3.6 trillion by 2020 in basic infrastructure, including transportation systems, waterways, and the power sector—and the current and projected spending rates will lead to a shortage of investment.[1] At the same time, U.S. cities are critically important centers for action on climate change mitigation and adaptation, and are therefore uniquely positioned to lead the effort to fund projects to reduce energy use and promote green infrastructure. In the United States, more than 60 percent of carbon emissions come from the buildings in which we live and work and transportation systems—the majority of this environmental impact arises from cities.[2]

Cities are also particularly vulnerable to the negative impacts of our changing climate. In just the last three years, extreme weather events have caused more than $188 billion in damages in American metropolitan areas, claiming more than 1,000 lives.[3] Investment in low-carbon and climate-resilient transportation, water, power, and buildings can address both the infrastructure and climate challenge.

The muni bond market is a tried and trusted finance channel for U.S. municipalities

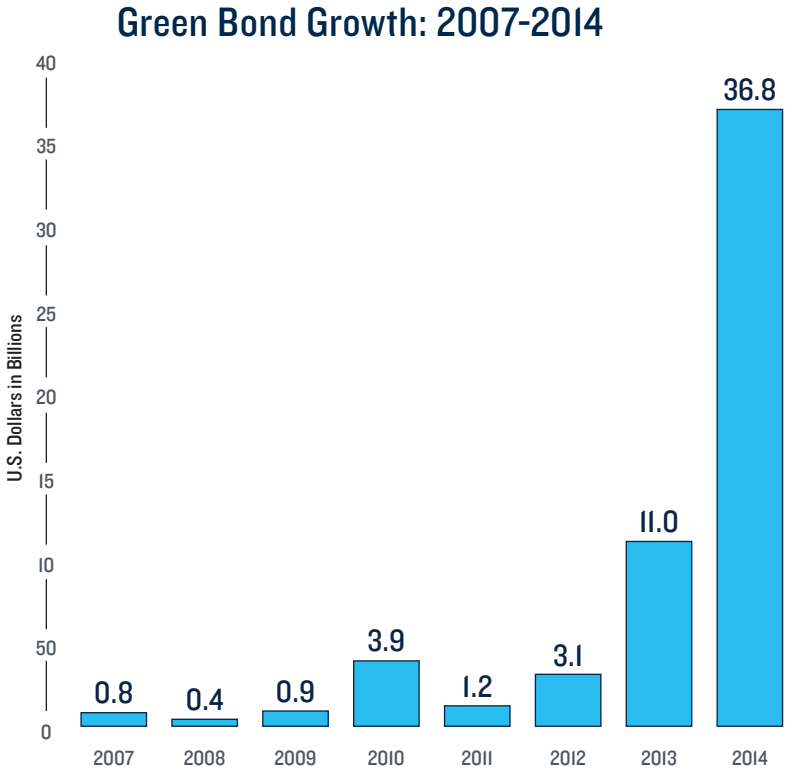
Municipal bonds are one financing tool well suited to close the U.S. infrastructure investment gap. The U.S. municipal bond market has funded large-scale, long-term capital-intensive projects in states and cities, as well as their operational expenses, since the beginning of the 1900s. The market is large, with investors today holding a total of $3.7 trillion of U.S. municipal debt. Different types of investors are attracted to the muni bond market, but individuals are the dominant investors, either directly as individual retail investors or through mutual funds, accounting for more than 70 percent of the market. This is largely because the vast majority of muni bonds are issued as tax-exempt instruments: of the $3.7 trillion in outstanding muni bonds, only approximately $600 billion are taxable.[4] Because individuals tend to have significant tax liability, tax-exempt muni bonds are attractive investment opportunities. Some federal programs also offer additional subsidies to attract tax exempt investors, such as pension funds, to the U.S. muni bond market.

Green bonds combine the trusted municipal bond market with features that provide additional benefits to cities and investors

Green bonds that earmark proceeds for green purposes have grown exponentially the last few years: in 2014, $37 billion in green bonds were issued worldwide, more than tripling the issuance in 2013. In the U.S., the Green Muni

BOX I: THE RAPID GROWTH OF THE GREEN BOND MARKET

The first green bond, called a Climate Awareness Bond, was issued by the European Investment Bank in 2007, and was followed by a green bond issuance by the World Bank in 2008. During its first few years, the labeled green bond market was tiny and composed only of issuances from multinational development banks. In March 2013, the International Finance Corporation (IFC) issued a $1 billion benchmark green bond. The deal sold out in one hour and was several times oversubscribed. That got the attention of the world's investment bankers and corporate issuers. Last year, in 2014, the market grew rapidly, with the issuance of $36.8 billion of green bonds—triple 2013 levels. By the end of 2014 there was $55 billion in outstanding green bonds, which is only projected to increase in the coming years. In 2015, green bond market growth will occur in many sectors—clean energy, energy efficient property, transportation, water, and agriculture. The Climate Bonds Initiative expects that issuance of green bonds can be $100 billion in 2015; Swedish bank and green bond pioneer SEB estimates $70 billion of issuance and Bloomberg New Energy Finance estimates $80 billion.



Source: The Climate Bonds Initiative (2015)

Bond market has grown even more rapidly. After a single $100 million Green Muni Bond issuance in 2013, $2.5 billion of Green Muni Bonds were issued in 2014 and an additional $1.3 billion have been sold through early May 2015. There is consistent, strong investor demand for green bonds—including Green Muni Bonds—and this rapidly growing market has the potential to help U.S. cities attract new investors and competitively priced capital to low-carbon and climate-resilient infrastructure investments.

The Green City Bonds Coalition aims to help municipalities tap into the green bond opportunity

The U.S. Green City Bonds Coalition—set up by the Climate Bonds Initiative, C40 Cities Climate Leadership Group, CDP, Natural Resources Defense Council, Ceres, and As You Sow—is part of a global partnership seeking to catalyze the growth of an active green bond market to help cities and municipalities take advantage of this opportunity. The Coalition offers educational materials, workshops, and seminars to cities in the United States and around the world.

A. WHAT IS A GREEN BOND?

Green bonds are essentially identical to the normal bonds that municipalities issue, except that:

- The bonds are labeled as "green" by their issuer,
- Proceeds are earmarked for green investments, and
- The issuer tracks and reports on the use of proceeds to ensure green compliance

Key to the success of green bonds is that investors do not have to choose between financial returns and environmental benefits, as green bonds offer the same financial terms as other bonds, with the added bonus that their green label enables investors to identify them as environmentally beneficial investments. If a portfolio manager is choosing between an ordinary bond and a green bond, and both have exactly the same yield and rating, and a comparable price, then that green benefit becomes a bonus feature. For investors who care about climate risk but cannot address this risk due to the restrictions of their mandates from asset owners, green bonds present an enormous opportunity. For investors who do not care about climate change, a green bond is no different from other similarly rated bonds and can still be a great investment opportunity.

B. TYPES OF GREEN BONDS

Green bonds may be general obligation bonds, meaning they are backed by the issuer's entire balance sheet and therefore have the same credit profile as other non-green bonds from that issuer. Alternatively, green bonds may be revenue bonds backed by specific revenue streams (e.g. water or sewer fees or tax revenues) rather than the issuer's full balance sheet, or project bonds, which are backed by the financial performance of specific green projects. Revenue bonds, like general obligation bonds, allow investors to invest in green projects at the same credit risk as non-green bonds with the same format; project bonds allow investors to gain exposure to green project risk and returns. Asset-backed securities (bonds backed by a large pool of smaller green projects), are another option for investors looking for exposure to the risk-reward profile of green projects. Examples of these types of green bonds are set forth on Table 1.

Table I: Types of Green Muni Bonds:

TYPE	PROCEEDS RAISED BY BOND SALE	DEBT RECOURSE	EXAMPLE
General Obligation Bond	Earmarked for green projects	Full recourse to the issuer; therefore, same credit rating applies as to the issuer's other bonds.	State of California issued $300 million in Aa3/A green bonds with final maturities in 2037. The September 2014 issuance was backed by the State's General Fund, 90 percent of which is derived from personal income tax, sales and use tax, and corporation tax). Proceeds went to fund a variety of projects across several categories, including air pollution, clean water and drinking water, and flood prevention.
Revenue Bond	Earmarked for green projects	Revenue streams from the issuer, such as taxes or user fees, provide repayment for the bond.	Iowa Finance Authority issued $321.5 million of State Revolving Fund revenue bonds in February 2015, with 1- to 2-year tenors, 1 to 5 percent coupon, rated AAA. The green bonds were backed by water-related fees and taxes. Proceeds were earmarked for water and wastewater projects.
Project Bond	Ring-fenced for the specific underlying green project(s)	Recourse is only to the project's assets and revenue.	No issuance seen in the market yet
Securitized Bond	Either (1) earmarked for green project or (2) go directly into the underlying green projects.	Recourse is to a group of financial assets that have been grouped together as collateral.	Hawaii State Government issued $150 million, AAA-rated of green asset-backed securities in November 2014. The securities were issued in two tranches: $50 million, 8-year, 1.467 percent coupon and $100 million, 17-year, 3.242 percent coupon. The bonds were backed by a Green Infrastructure Fee applied to the bills of the State Utility's electricity customers. Proceeds went to loans to install distributed solar panels, connectors, and storage.

C. WHAT PROJECTS QUALIFY FOR GREEN BOND ISSUANCE?

Funds from green bond issuances can be allocated to new projects or to refinance existing projects. As long as the proceeds go to green projects, the bond can be labeled as green. And although the market has not yet converged on universally accepted criteria that a project must meet in order to be an eligible use of proceeds from a green bonds issuance, there is developing guidance in this area.

Green Bond Principles provide guidance on reporting and transparency for Green Bonds

The Green Bond Principles, launched by an international group of financial institutions in 2014 and updated in March 2015, are best practice guidelines for green bond issuances regarding use of proceeds, the process for project evaluation and selection, management of proceeds, and reporting on use of proceeds. The categories and types of projects that can qualify under the Green Bond Principles include, but are not limited to:[5]

- 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 (including clean and/or drinking water)
- Climate change adaptation

The Green Bond Principles list these broad categories of projects but do not prescribe specific criteria to determine whether a specific project in a category qualifies as green. For those specific criteria, the Climate Bonds Principles suggest issuers refer to those already in the marketplace, including the Climate Bonds Standards. Green bond issuance can fund projects from several of these categories. For example, one green bond can allocate proceeds to renewable energy and clean transportation. This makes it easier for issuers to achieve scale.

Additional guidance can be found in Ceres' Statement of Investor Expectations for the Green Bond Market (http://www.ceres.org/files/investor-files/statement-of-investor-expectations-for-green-bonds). This resource helps clarify for issuers some of the important, manageable expectations concerning project eligibility, disclosure, impact reporting, independent assurance and overall transparency that more than two dozen leading investors in green bonds believe should be integral to a green bond offering.

The Climate Bonds Initiative is developing substantive standards for the green bond market

The only current industry effort to address the challenge of green standards within each of these broader asset categories provided by the Green Bond Principles is the Climate Bonds Standard, with some 80 international organizations—scientists, industry experts and investors—involved. An update of the Climate Bonds Standard, to be published summer 2015, will be aligned with the Green Bond Principles but will offer more clarity and specificity regarding what should qualify as green within each asset class. An overview of the standards available and under development is presented in Table 2 below.

Table 2: Climate Bonds Standards availability

Developed	Coming Soon
Solar	Bioenergy Geothermal
Wind	Water
Low-carbon transportation: Bus Rapid Transit (BRT) systems	Low-carbon transport (rail, EVs, etc.)
Low-carbon buildings	Agriculture and Forestry

There are several examples of green bonds issued in the market against the Climate Bonds Standard; one example is a green bond for renewable energy issued by the National Bank of Australia.

D. EXTERNAL SECOND OPINIONS AND CERTIFICATION PLAY A ROLE IN PROVIDING INVESTOR CONFIDENCE IN GREEN OUTCOMES

While issuers self-label bonds as green based on the projected use of the bonds' proceeds, investors must be confident that green bond investments have genuine and substantial environmental benefits in order to identify where to place funds. This can be done by validation through the second opinion model or by verification against a set of standards for a particular asset class. In the second opinion model, issuers validate their green label by getting an external second opinion on their green bond framework for eligible projects, as well as their processes for management of proceeds and reporting. In the verification model, external verifiers check compliance against the standard's criteria, such as the Climate Bonds Standard.

Though both verification methods are effective, verification against the Climate Bonds Standard involves compliance with set criteria enabling potential investments to be evaluated on an apples-to-apples basis, whereas in the second opinion model, the verifier typically works with the issuer to develop a green bond framework on an ad hoc basis, and testifies to compliance with this co-developed framework. In addition, the bespoke investigation required under the second opinion model may increase costs for issuers relative to verifying projects' compliance with the clear criteria of publicly available preexisting standards.

E. THREE REASONS TO ISSUE GREEN MUNI BONDS

The momentum and strong investor demand in the green bond market, coupled with the multitude of municipal infrastructure and climate projects requiring financing, provide a strong reason for an issuer to pursue the issuance of Green Muni Bonds. Green Muni Bonds offer a number of benefits:

- **GROW AND DIVERSIFY THE INVESTOR BASE.** Green Muni Bonds attract investors that are not typically active in the muni bond market, such as socially responsible investing (SRI) firms and individuals, funds that have climate mandates, and other retail and institutional investors seeking an environmentally positive way to earn income. For example, DC Water gained $100 million in orders from SRI investors for their $350 million inaugural green bond that their CFO stated they otherwise would not have received.
- **INFORM AND INVOLVE RESIDENTS.** Green Muni Bonds help to highlight an issuer's commitment to long-term green development, while also allowing residents to invest in their own communities by participating in green bond offering. This is a particularly attractive investment opportunity for residents, who receive the double benefits of tax-exempt income from the Green Muni Bond purchase along with improvements to their neighborhoods. The Commonwealth of Massachusetts, for example, saw large retail investor demand for its second green bond offering in September 2014 when they received an unprecedented $260 million of retail investment for their $350 million green bond offering.
- **INCREASE COLLABORATION BETWEEN ENVIRONMENTAL AND FINANCE DEPARTMENTS.** Issuing Green Muni Bonds requires finance, sustainability, and other departments of city and state governments to work together to arrange and oversee the process. Issuing green bonds has led to greater teamwork and synergies across different parts of government. In the longer run, the availability of green finance will lead to greater internal focus on green projects.

HOW TO GET CERTIFIED

The Climate Bonds Standards Scheme provides a simple certification and verification process for potential issuers, similar to a "Good Housekeeping Seal of Approval".

Achieving certification is easy:

1. Locate qualifying green assets or projects. These can be existing assets or projects to be completed. Details at http://www.climatebonds.net/standards/standard
2. Get independent verification of compliance. Use approved verifiers like Ernst & Young, KPMG, Bureau Veritas, Trucost or DNV-GL. See http://www.climatebonds.net/approved-verifiers-under-climate-bond-standard
3. To finalize certification simply send in a verification report to the Climate Bond Standards Board for review. Board members representing $34 trillion of assets under management will be deciding on the application.

ENDNOTES

1 American Society of Civil Engineers (ASCE) "America's Infrastructure Reportcard," American Society of Civil Engineers http://www.infrastructurereportcard.org. (Accessed May 11, 2015.)

2 U.S. Environmental Protection Agency, "Sources of Greenhouse Gas Emissions," U.S. Environmental Protection Agency, *www.epa.gov/climatechange/ghgemissions/sources.html*. (Accessed May 8, 2015.)

3 Weiss, D.J. and Weidman, J. "Going to Extremes: The $188 Billion Price Tag from Climate-Related Extreme Weather," Center for American Progress, February 12, 2013, www.americanprogress.org/issues/green/news/2013/02/12/52881/going-to-extremes-the-188-billion-price-tag-from-climate-related-extreme-weather.

4 The Securities Industry and Financial Markets Association, *Municipal Bond Credit Report: Fourth Quarter 2014*, The Securities Industry and Financial Markets Association, pp. 14.

5 International Capital Market Association, "Green Bond Principles," March 2015, International Capital Market Association, www.icmagroup.org/Regulatory-Policy-and-Market-Practice/green-bonds/green-bond-principles.

HOW TO ISSUE A GREEN MUNI BOND

A STEP-BY-STEP GUIDE

PREPARATION

1 IDENTIFY QUALIFYING GREEN PROJECTS AND ASSETS

The key feature of a Green Muni Bond is that the proceeds go toward green projects or assets. The "greenness" of the issuing entity does not matter—it's about the physical assets or projects.

Green Muni Bonds can be issued by:

- City governments
- Utilities: water, transport, energy, etc
- Corporations developing, building or managing green assets for issuers
- States or development banks

If you can issue a municipal bond, in principle, you can also issue a Green Muni Bond if you have qualifying green assets or projects. You have to disclose your assets and projects.

Guidance about qualifying assets or projects can be obtained from the Green Bond Principles (http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/green-bonds/green-bond-principles/), which set out broad green asset categories, and the Climate Bond Standards Scheme (http://www.climatebonds.net/standards), which set out more specific standards for what qualifies within these asset categories.

2 ARRANGE INDEPENDENT REVIEW

Credible independent review and certification protects your reputation. Verifiers can also help identify green assets.

3 SET UP TRACKING AND REPORTING

The issuer establishes procedures for tracking and reporting on the use of proceeds. To ensure all proceeds are applied to green projects, the sum of the cash on hand and amounts invested in assets or projects must not be less than the amount of the bond.

ISSUANCE

4 ISSUE YOUR GREEN MUNI BOND

The usual steps apply here, as for any other conventional bond:

- Structure the bond, working with an investment bank or advisor
- Get credit rating

5 MONITOR USE OF PROCEEDS AND REPORT ANNUALLY

At least annually, issue a public report to confirm that the funds are still properly allocated to green projects.

This can be done by an auditor or in a letter signed by an authorised officer of the municipality.

That's it!

See next page for more detailed information.

THE 5 STEPS FOR ISSUING A GREEN MUNI BOND

1 IDENTIFY QUALIFYING GREEN PROJECTS AND ASSETS

GREEN EARMARKING IS THE KEY FEATURE. That means that the proceeds from the green bond sale are earmarked for green projects or assets. The "greenness" of the issuer is irrelevant—it's about the physical assets or projects.

EXISTING ASSETS OR NEW CAPITAL EXPENDITURE CAN BE USED.

Proceeds of a Green Bond can be applied, through refinancing of pre-existing debt, to existing assets, such as public transportation assets. For example, a municipality can issue a Green Muni Bond to refinance an existing metro rail line project, and use the funds to repay or increase the existing financing for the rail line.

When proceeds are allocated to upcoming capital investment for new projects, investors prefer that funds be deployed in a reasonable period after issuance in order to timely achieve green impact.

GUIDELINES AVAILABLE ONLINE: See the next page for guidance about which assets or projects qualify as Green. Greater detail can be found in the International Climate Bond Standards Scheme.

TREASURY AND ENVIRONMENTAL DEPARTMENTS MUST WORK TOGETHER.

Identifying qualified assets and projects will require cooperation between the issuer's finance and environmental departments. Establishing coordination between them early on will save time.

Example: Green revenue U.S. muni bond from Arizona State University

Arizona State University issued $182.6 million of Green Revenue Bonds in April 2015. The bonds had tenor ranging from 1 to 21 years, with corresponding coupons between 2 and 5 percent and AA rating.

The issuance was backed by the University's revenues, including student tuition and fees and facilities revenues, instead of the full balance sheet of the University.

Proceeds from the Green Bond will be used to refinance LEED Gold-certified buildings for the University, although the issuer did not obtain a second opinion on the bond's green credentials.

2 ARRANGE INDEPENDENT REVIEW

Both policymakers and climate-friendly investors want assurance that green investments are genuinely green.

Internationally, the majority of issuers use independent review to increase investor confidence in funded projects. This can be done with a simple certification of the bond's green credentials under the Climate Bonds Standard.

The Climate Bond Standards Board has a simple, low cost certification and verification process for potential issuers. Approved verifiers under the Certification scheme include Ernst & Young, KPMG, Bureau Veritas, and DNV GL.

Review can also be provided by organizations with a strong environmental knowledge base. Second opinion providers in the U.S. market to date include Vigeo. They will look at:

- The green credibility of the proposed Green Muni Bond investments.
- The processes established for tracking funds and for reporting.

Reviewers can also help identify green assets.

Using accepted standards when issuing a Green Muni Bond reduces the cost of independent review and improves tradeability.

BENEFITS OF ISSUING A GREEN BOND

Distinguishes you as a pioneer in a soon-to-be big market.

Demonstrates your green credentials to investors, government, and citizens.

Attracts new investors interested in green projects.

Enables smaller green projects to be bundled into a bond size attractive to investors.

3 SET UP TRACKING AND REPORTING

Full disclosure on the allocation of proceeds (to provide transparency to the investor) is necessary for a Green Muni Bond.

Key rules:

- The proceeds from Green Muni Bonds must be used only for specified projects, so there must be systems in place to track Green Muni Bond proceeds and keep track of their use. Issuers that have done this in the past have used separate coding for the Green Muni Bond proceeds and have created special allocation codes to help ensure funds are used properly.
- To ensure all proceeds are applied to green projects, the sum of the cash on hand and amounts invested in assets or projects must not be less than the amount of the bond.

It is best practice to include these rules in the use of proceeds section of the legal documentation for the bond issuance.

4 ISSUE YOUR GREEN MUNI BOND

The usual steps apply here, as for any conventional bond:

- Structure the bond, working with an investment bank or advisor. Any sort of structure, from vanilla bonds to asset-backed securities, can be used as long as proceeds are allocated to green assets or projects. The offering circular should discuss the project or assets and the selection criteria.
- Market and price the Green Muni Bond. Credit quality is judged the same as for other bonds. Cities should expect to have the bond credit rated in the usual manner.

5 REPORT REGULARLY

To maintain the status of a Green Muni Bond, the issuer must confirm at least each year that the funds are still properly allocated to green projects.

Confirmation involves:

- A public letter from the municipality auditor or a letter signed by an authorized officer of the municipality.
- A brief report that sets out the ongoing use of the Green Muni Bond proceeds, highlighting the environmental impact to investors and other stakeholders. Consider using CDP Cities annual disclosure questionnaire to communicate project plans and environmental and budget impacts on an ongoing basis.

Reports should be publicly available, such as on the issuer's website.

Where feasible, reports should include a quantitative report on the environmental impact of investments, such as the amount of pollutants prevented from entering the air or water, or the total energy saved.

SUBSEQUENT GREEN MUNI BOND ISSUANCES ARE EVEN SIMPLER

Repeat Green Muni Bond issuers can use the same framework for identifying green projects and assets as well as the same independent reviewer and the same processes for managing proceeds and reporting. If they need to replenish the pool of assets linked to the bond, they can look to other qualifying green assets.

Repeat issuers of Green Muni Bonds say it is like a normal bond issuance process the second time around.

Example: Green Muni Bond from Massachusetts

The Commonwealth of Massachusetts issued its first round of Green Muni Bonds in June 2013 ($100 million), followed by a second issuance for $350 million in September 2014. Both bonds were rated AA+, backed by Massachusetts' full balance sheet.

The first issuance was 30 percent oversubscribed while the second Green Muni Bond issuance was close to three times oversubscribed, with a large chunk of demand from retail investors.

This second issuance actually got a better price than the normal bond Massachusetts issued with the same rating on the same day.

Proceeds of the latter batch of green bonds were earmarked for water projects, offshore wind port facilities, energy efficient buildings, and restoration and preservation projects.

Guidance: QUALIFYING GREEN ASSETS

Within these broad categories there are further details needed to qualify as green.

Green Muni Bond issuers can use the Climate Bonds Standard and Certification Scheme to have their green credentials confirmed. The Scheme is an international industry standards project, involving more than 80 organizations. The Climate Bond Standards Board consists of climate- and environment-focused NGOs and groups representing $34 trillion in assets under management.

RENEWABLE ENERGY ENERGY STORAGE

Solar and wind energy generation

Solar and wind energy equipment manufacturing

Grid connections to renewable energy generation

Hydro-electricity generation (run of river or existing dams)

Geothermal energy (subject to limits on greenhouse gas emissions)

Biomass energy generation

Tidal energy generation and other emerging renewable energy technologies

Energy storage

GREEN BUILDINGS GREEN INFRASTRUCTURE

LEED certified buildings (gold and above recommended)

Energy efficiency and conservation projects in buildings (such as LED lighting installation)

Rehabilitation of transmission facilities to reduce greenhouse gas emissions

Public housing built to high energy efficiency standards

AGRICULTURE, BIOENERGY FORESTRY

Sustainable agriculture, forestry, and land use

Biofuels production using agricultural waste or non-food crops

Agriculture produce supply chain improvements to reduce waste

INDUSTRIAL EFFICIENCY

Cement production: substantial reductions in greenhouse gas emissions

Waste heat recovery systems

Energy efficient motors

CLEAN WATER AND UTILITIES STORM ADAPTATION

Clean water and drinking water

Resilience, adaptation and Green infrastructure

River revitalization and preservation

Habitat restoration, flood mitigation and drought impact

WASTE MANAGEMENT METHANE REDUCTION

Sewage treatment facilities with methane capture

Low-emission garbage tracks and related infrastructure

Recycling plants

Qualifying waste-to-energy generation

CLEAN TRANSPORTATION

Mass transit: subways, light rail

Rolling stock for railways

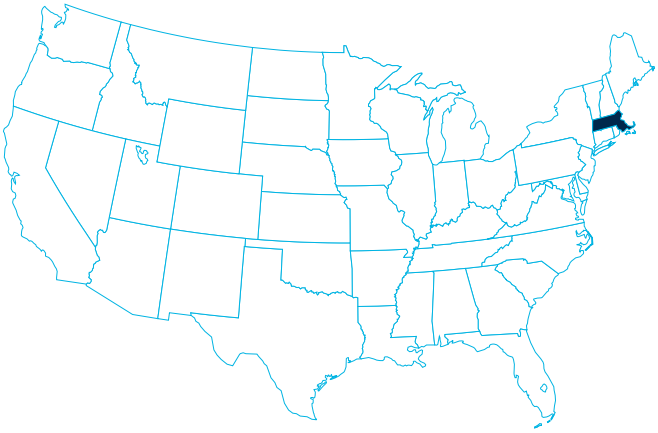
Rail track capital expenditure

Electric vehicle infrastructure, vehicle fleets, consumer loans

Bus Rapid Transit Systems (minimum ITDP bronze rated)

Zero- and low-emission vehicle fleets

Commonwealth of Massachusetts September 2014 Green Bond[1]



GREEN MUNI BOND STATISTICS:

Issue date: September 2014

Size: $350 million

Tenor: 5 to 17 years

Yield: 2.45 percent

Rating: AA+ Fitch / Aa1 Moody's / AA+ S&P

Underwriter: Morgan Stanley

Use of proceeds: Water projects, offshore wind port facilities, energy efficient buildings, and restoration and preservation projects

WHY MASSACHUSETTS ISSUED A GREEN BOND

The Commonwealth of Massachusetts completed its successful inaugural $100 million green bond issuance in 2013. The proceeds were used for clean and drinking water projects, energy efficiency in state buildings, open space and land remediation, river revitalization, and habitat restoration. Multiple factors led Massachusetts to the green bond market.

First, the Office of the Treasury postulated that the Commonwealth had many green-oriented capital needs that might be funded using green bonds. Then, discussions with socially responsible investment (SRI) firms and other entities seeking to make green investments confirmed the desirability and feasibility of the effort.

The Commonwealth concluded that green bonds would be an ideal way to expand their investor base. The success of 2013 issuance led to the decision to pursue a larger program in 2014. This time, the proceeds went toward water projects, offshore wind port facilities, energy efficient buildings, and restoration and preservation projects.

FEW ADDITIONAL COSTS COMPARED TO STANDARD BONDS

Massachusetts has been surprised by how simple green bonds have been to issue. They have not found tracking and reporting on use of proceeds to be particularly onerous—as part of their standard due diligence they were already tracking the use of the proceeds from their bond sales, so the only additional burden has been preparing official reports for investors, which they create in-house. Their reports track dollars spent on the various projects funded by the green bonds, without estimates or metrics on the "green impact" of the projects themselves. Investor response to their reports has been overwhelmingly positive.

The proceeds were used for clean and drinking water projects, energy efficiency in state buildings, open space and land remediation, river revitalization, and habitat restoration.

1 Many thanks to Sue Perez, Assistant Treasurer of Debt Management for the Massachusetts State Treasury and Executive Director of the Massachusetts Clean Water Trust, and Drew Smith, Deputy Assistant Treasurer of Debt Management for the Massachusetts State Treasury.

Commonwealth of Massachusetts September 2014 Green Bond[1]

DOING WORK UP-FRONT HELPS DOWN THE ROAD

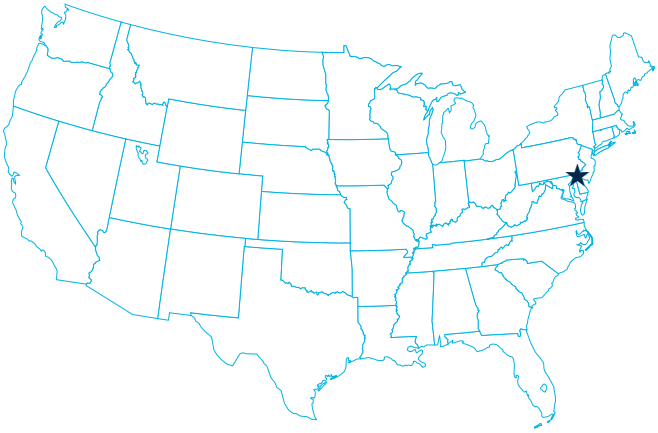
While Massachusetts has found issuing green bonds to be a relatively simple process, laying a good foundation before the bond sale has proved to be important. Leading up to issuance, their green bond investors have generally been more interested in information about the green bonds and the projects the bonds will fund than the Commonwealth's normal bond investors, so greater upfront communication and outreach to investors has been key to the success of their green bond program.

The Commonwealth has also found that it is critical to be as clear and transparent as possible about its reporting plans—their format, frequency, and content—in the bond documents that go out to investors before the sale. They recommend even including a sample report in the issuance documents so that investors understand what kind of reporting they will receive. Being as explicit as possible about reporting has led to good investor relations and feedback.

GREEN BONDS HAVE ATTRACTED A BROADER AND MORE ATTACHED INVESTOR BASE

Much can be learned from the Massachusetts offering because the Commonwealth was offering green and non-green bonds at the same time, with the same rating. In some ways, Massachusetts had an even easier time marketing the green bonds than the non-green bonds because they were able to tell potential investors a more persuasive story about the impact of the bonds and the projects the proceeds were going to fund. The green bond sale was 3x oversubscribed and the AA+ rated green bonds sold at lower yields than the muni market's AAA yield curve! Massachusetts was also able to expand its investor base, as residents and local retail investors who hadn't considered buying municipal bonds before were attracted by the green story: the Commonwealth received $260 million in orders from retail investors, an unprecedented amount for them. These new investors reported that they appreciated knowing the specific projects their investments were funding, as well as the fact that, as residents, they would experience the benefits of the projects first-hand into the future.

DC Water Green Bond[1]



GREEN MUNI BOND STATISTICS:

Issue date:
July 23, 2014

Size:
$350 million (upsized on the day by $50 million)

Tenor:
100-year

Yield:
4.814 percent (settled at lower end of expected spread)

Rating:
Aa2 Moody's / AA+ S&P / AA Fitch

Underwriter:
Goldman Sachs

2nd opinion:
Vigeo (first U.S. green bond with second opinion)

Use of proceeds:
Combined stormwater and sewage infrastructure to reduce combined sewer overflows (CSOs) to area waterways

WHY DC WATER ISSUED A GREEN BOND

For the District of Columbia Water and Sewer Authority—commonly referred to as DC Water—the decision to issue a green bond started with the Clean Rivers project, which they were in the process of financing. The authority considered issuing a normal bond, but when CFO Mark Kim and his team looked at the characteristics of the asset and realized all its potential positive environmental outcomes, they thought it would more appropriate to finance the project with taxable green bonds. It was also an exciting opportunity for DC Water to pioneer and issue the first green municipal bond for water investments in the U.S. market.

ON THE BENEFITS OF HAVING A SECOND OPINION

To ensure that the environmental credentials of the bond were as strong as possible, DC Water looked to Europe for best practice, as there had only been two other green municipal bonds in the United States at that time, and decided to get a second opinion. Kim was clear on the benefits of this: "It was a no-brainer to do a second opinion. To us, not having one is really equivalent to saying you would consider going to market with unaudited financials!"

Working with Vigeo, their second opinion provider, was an eye-opening experience: "Vigeo was very rigorous in their due diligence—they collected lots of data, interviewed the executive team and board, and visited the project. They also helped us choose green outcomes and indicators that would resonate with investors."

The work with the second opinion really paid off when the green bond entered the roadshow process with investors. Both the municipal bond teams and the socially responsible investment (SRI) teams from various institutional investors were present, and participation in the deal became the call of the SRI team due to the green aspect. Mark Kim recalls: "This meant we needed to prove the extent of the environmental impacts to get them to invest. The second opinion was great then, because we could say: 'Hey, don't take our word for it—we got an independent review.'"

1 Thanks to Mark Kim, CFO, and Bob Hunt, Finance Director, at DC Water for taking the time for an interview.

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MET WITH OVERWHELMING MARKET DEMAND, LEADING TO FINANCIAL BENEFITS

When the green bond was issued, it was met with overwhelming market demand. The deal was oversubscribed multiple times. "In fact, when we first came to market with an initial $300 million offer, we got a little over $1.1 billion of orders! So in response, we upped the size to $350 million and lowered the spread by 15 basis points," explains Kim. "Some of this pricing benefit can be attributed to the green credentials of the bond, in the sense that $100 million of orders were from SRI investors that would not have bought one of our non-green bonds, but of course, it is difficult to quantify how much of the pricing benefit can be attributed solely to the green label. But, it was clear that we benefitted financially from having a green label." Another benefit for DC Water was that they achieved a lot of investor diversification, with the additional $100 million in orders from SRI investors that they would not have accessed with a normal municipal bond.

GREAT FEEDBACK FROM OTHER STAKEHOLDERS: MEDIA, BOARD, AND EVEN UTILITY RATEPAYERS

But investors were not the only ones excited about the green bond. It was equally well received by other stakeholders. There were some great media stories from *Wall Street Journal*, *Financial Times*, and the like. DC Water's Board was also very supportive. And clearly the green bond struck a chord with their utility customers as well. Mark and his team were happily surprised to get a thank you note from one of their utility ratepayers in response.

REPORTING INCLUDED IN ANNUAL REPORTING

DC Water has made efforts to ensure that the success of their green bond continues after issuance. Procedures for tracking performance have been established, and it just published green bond reporting in their annual financial reports. This includes how many times they have drawn from the green bond funds and the environmental outcomes for a certain set of indicators established together with Vigeo in the pre-issuance stages. DC Water has committed to annual reporting.

Of course, doing a green bond had some additional costs in terms of time and money relative to non-green bond issuance—but DC Water made it clear that the benefits outweighed the costs. To them, both the administrative and monetary costs were comparable to the costs of going to market with any bond issuance—getting a credit rating, financial consultants, doing roadshows, and so on. Bob Hunt, finance director at DC Water, elaborated: "Typically, we have a working group with many different representatives set up when we are issuing any bond. Adding the green bond second opinion provider Vigeo to the working group mix did not really make it more challenging." DC Water also found the timeframe manageable: It took six weeks from when they decided to do a green bond until it was all in place, which fit neatly into the deal schedule—they didn't have to extend the deal process time at all.

... AND THEY ARE COMING BACK TO MARKET WITH THEIR SECOND GREEN BOND IN 2015

Considering the success of their first green bond, it is no surprise to hear that DC Water is planning to issue their second green bond this year. But this time it will be even simpler: "The difference with this issuance is that our green bond framework and independent review of this is already set out from our first green bond, so it is a lot easier. But we are planning to step it up even further and get an independent audit on the report," says Kim. He adds, "If we can do it, others can do it too".