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State-Backed Green Bonds Emerge Following International Model

A Standardized "Green" Project Classification and Capital Flow Transparency is Needed for Green Bond Market Sustainability and Growth

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Policy Brief

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Key Takeaways:

- Green bond issuance has grown significantly since 2007 with large supranational bank and corporate offerings, and could reach $100 billion globally in 2015
- U.S. states with green bond programs have consistent oversubscription rates but sales pale in comparison to supranational and corporate offerings
- Maximizing domestic potential will be contingent on continued development of Green Bond Principles and other standardized environmental assessment criteria in attracting a solid investor base

Entities Mentioned:

- Bank of America
- Citi
- Crédit Agricole Corporate and Investment Bank
- Climate Bonds Initiative
- GDF Suez
- International Finance Corporation
- JPMorgan Chase
- Merrill Lynch
- World Bank

Related Research

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First State Green Bonds Sales Draw High Demand

Green bonds are fixed-income financial instruments to raise funds for various energy and environmental projects. According to the Climate Bonds Initiative – a not-for-profit working to mobilize bond markets for climate change solutions – $36 billion in green bonds were issued globally from 2007 to June 2014. The World Bank reports it raised $6.7 billion through 72 green bond offerings in 17 different currencies since their first offering in 2008. Following this model, Massachusetts offered its first sale in June 2013, and several additional states have offered green bonds over the last two years to fund projects for water quality and infrastructure, energy efficiency, renewable energy, pollution cleanup, and other capital-intensive projects (Figure 1).

$36 billion in green bonds were issued globally from 2007 to June 2014

Figure 1 – Summary of U.S. State Green Bond Offerings

State	Summary
Massachusetts	**First sale:** June 3, 2013 **Size**: $100 million sold (30 percent oversubscribed) **Second sale:** September 15-18, 2014 **Size**: $350 million sold (nearly 300 percent oversubscribed)
California	**First sale:** September 23, 2014 **Size:** $200 million - expanded to $300 million due to high demand
New York	**First Sale:** June 2, 2014 **Size:** $213 million
Washington D.C.	**First sale:** July 10, 2014 **Size:** $350 million (expanded to $400 million on more than 300 percent oversubscription)

Source: State Treasuries

Massachusetts' inaugural green bond proceeds primarily finance energy efficiency projects, followed by clean water, land acquisition/protection, and river revitalization/habitat rehabilitation projects. The state's 2014 green Bond sale proceeds will fund similar projects, however a portion of the funds will finance the New Bedford Marine Commerce Terminal project – a facility to support the construction, assembly, and deployment of offshore wind projects.

With high ratings and social-good benefits, institutional and retail investors have shown high appetite for the first state green bond offerings with oversubscription rates reaching 300 percent in recent sales. This demand has allowed states to both expand offerings and sell bonds at lower yields.

New York City Comptroller Proposes First Major City Green Bond Program

The success of initial state green bond sales has also enticed intra-state jurisdictions – such as New York City (NYC) – to consider adopting similar green bond programs to fund clean energy and infrastructure resiliency projects.

On September 24, 2014, New York City Comptroller Scott Stringer proposed a City green bond program to fund environmental mitigation, energy efficiency, renewable energy, transportation, water, and other sustainability-related projects. In addition to supporting various environmental mitigation and sustainability programs, Comptroller Stringer aims to expand the city bond investor base and create a model program for other cities to replicate. However, the details of these "green project" qualification requirements are not yet determined. In his proposal, Stringer outlined that the specifications "will build on definitions currently used in the marketplace while considering the City's specific capital needs." The Comptroller's Office and the NYC Office of Management and Budget will now create a joint working group to establish green bond criteria, project selection, capital tracking, and other program designs.

NYC Comptroller Stringer aims to expand the city bond investor base and create a model program for other cities to replicate

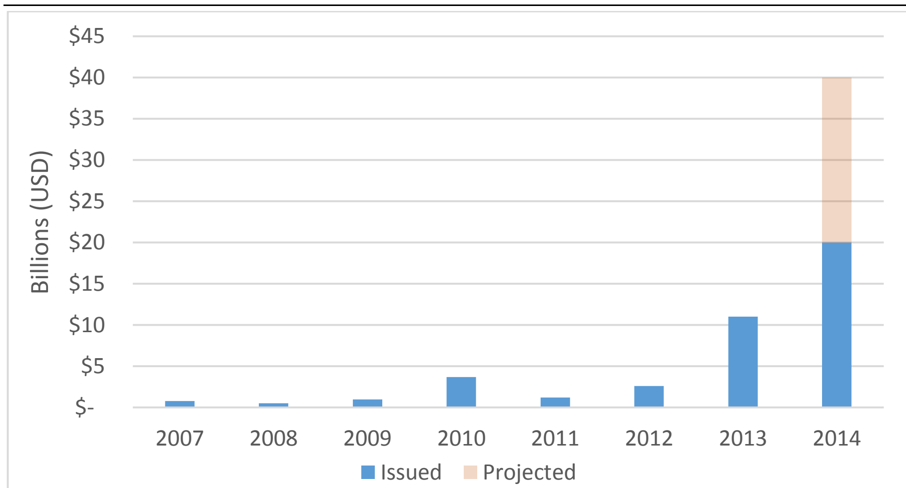
State Green Bond Programs Pale in Comparison to Supranational Bank and Corporate Offerings

The European Investment Bank launched the first "green" bond in 2007, labeled a "Climate Awareness Bond." Since then, large supranational banks led the green bond market until corporations joined with offerings in 2013. By far the largest green bond offering to date is from Paris-based global energy utility company GDF Suez, at €2.5 billion (~$3.4 billion) in May 2014. The company will use the funds to finance renewable energy and energy efficiency projects.

GDF Suez's $3.4 billion Green Bond offering is the largest to-date

The recent success of domestic and international green bond sales is attributed in part to the bonds having the same investment-grade credit rating as other, non-green bond offerings. European corporates and large supranational banks have found also success in recent green bond offerings due to high demand for renewable energy and climate change mitigation projects, and foreign currency-denominated bond offerings.

Figure 2 – Global Green Bond Issuance, 2007-2014



Source: EnerKnol analysis of Climate Bonds Initiative data

The international growth of the green bond market has drawn attention from U.S. states. However, the to-date combined state green bond offerings only total about $1.2 billion. Despite these somewhat limited state green bond offerings, state "green banks" – in California, Connecticut, Hawaii, New York, and Pennsylvania – have proliferated to achieve similar financing goals. Green banks leverage state funds to lower investment risk for renewable energy and energy efficiency projects, and "bridge the gap" for private capital deployment. As investors increasingly seek stable, socially-responsible investments, green bond offerings and green banks should continue to develop well-defined project selection criteria and capital flow transparency to ensure program success and growth.

Green Banks have proliferated to achieve similar financing goals

Definitive "Green" Project Criteria Needed to Meet Projected High Near-Term Market Growth

While the size and number of green bond issues have grown significantly in the past two years, to continue sustainable growth – and maximize investment effectiveness – standard guidelines must be established to develop a solid investor base.

Cumulative green bond offerings nearly doubled their 2013 levels within the first six months of 2014, and moving forward, the Climate Bonds Initiative projects this market to surpass $40 billion in 2014 and $100 billion in 2015. However, this proliferation has raised issues with the lack of a common classification and reporting standard. In response, in January 2014 a conglomerate of stakeholders developed the Green Bond Principles (GBP) – "voluntary process guidelines for issuing green bonds." The initiative was initially spearheaded by JPMorgan Chase, Bank of America, Merrill Lynch, Citi, and Crédit Agricole Corporate and Investment Bank, and they cover specific process guidelines, including:

In January 2014 a conglomerate of stakeholders developed the Green Bond Principles

- **Use of proceeds** – All designated green project categories should provide clear environmental benefits that can be described and, where feasible, quantified and/or assessed;
- **Project evaluation and selection** – The issuer's process should be well-defined to assess overall project environmental profile and consider direct and indirect project impacts;
- **Management of proceeds** – green bond proceeds should be moved to a sub-portfolio or otherwise tracked by a formal internal process linked to project investments, and the tracking of proceeds should be clearly and publicly disclosed; and
- **Reporting** – Annual or semi-annual updates that detail the specific projects and amounts invested should be made available via newsletter, website updates, or filed financial reports. Qualitative and/or quantitative performance metrics – where feasible – should be provided.

While these guidelines offer an early start, project selection criteria may still vary from issuer-to-issuer. Notably, the well-established green bond issuers of the World Bank and the International Finance Corporation (IFC) have defined specific project eligibility standards.

Green Bonds Offer Issuers New Funding Opportunities

The market for green bonds is growing, as asset managers, pension funds, banks, and other investors seek investment-grade fixed income securities with clear, environmentally-responsible mandates. With the Green Bond Principles gaining marketplace acceptance, investors and issuers will gain confidence in green bond specifications and environmental assessment criteria.

The types of these projects will vary by issuer. The World Bank has financed renewable energy and flood mitigation projects, while IFC investments span beyond, to greenhouse gas emissions reduction projects (Figure 3). Corporate green bond criteria largely depend on the seller's business and can vary significantly. Moving forward, this diversification will continue as the market gains momentum.

Figure 3 – Projects Financed by Different Green Bond Issuers

Project Types	IFC	World Bank	Mass.	GBP	(Potential) NYC
Clean Water & Drinking Water			✓	✓	✓
Energy Efficiency and Conservation Projects in Buildings	✓		✓	✓	✓
Rehabilitation of Power Plants and Transmission Facilities to Reduce GHG Emissions		✓			
Renewable Energy Generation (Solar & Wind Installations)	✓	✓		✓	✓
River Revitalization & Preservation, Habitat Restoration and Flood Mitigation		✓	✓		✓
Sustainable Agriculture, Forestry, and Land Use	✓	✓	✓	✓	✓
Waste Management: Waste-to-Energy Generation	✓	✓		✓	✓
Clean Transportation: Mass Transit, Retrofitting Vehicles, HOV lanes	✓	✓		✓	✓
Climate-Related Products: Manufacturing Energy Efficient and Renewable Energy Products	✓				
Carbon Markets	✓				
Mitigation Through Financial Intermediaries: Funding Green Projects	✓				
Advisory Services Market-Level Activities: Policy Related Work For Reducing GHG Emissions	✓				

Source: NYC Comptroller - Proposed New York City Green Bond Program

Disclosures Section

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Regulatory and Legislative agendas are subject to change.

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