Green Municipal Bonds in India: Potential, Barriers and Advantages

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New Delhi
March 2017

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List of Abbreviations

USD	United States Dollars
INR	Indian Rupee
GDP	Gross Domestic Product
NDCs	Nationally Determined Contributions
ULBs	Urban Local Bodies
FYPs	Five Year Plans
EIB	European Investment Bank
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
PFDF	Pooled Finance Development Fund
CREF	Credit Rating Enhancement Fund
SPFE	State Pooled Finance Entity
CBDT	Central Board of Direct Taxes
WSPF	Water and Sanitation Pooled Fund
DSCR	Debt Service Coverage Ratio
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KUIDFC	Karnataka Urban Infrastructure Development and Finance Corporation Limited
SEBI	Securities and Exchange Board of India
OECD	Organisation for Economic Co-operation and Development
BRICS	Brazil, Russia, India, China and South Africa
GBP	Green Bond Principles
ESG	Environment, Social Governance
IFC	International Finance Corporation
IDBI	Industrial Development Bank of India
IREDA	Indian Renewable Energy Development Agency Limited
NTPC	National Thermal Power Corporation Limited
IIFCL	India Infrastructure Finance Company Ltd.
LEED	Leadership in Energy and Environmental Design
SRI	Socially responsible investment
PCE	Partial Credit Enhancement

Executive Summary

Green bonds were created to fund projects that have positive environmental and/or climate benefits. India has played an active role in issuance of green bonds as compared to other countries, with a total of USD 2.7 billion raised through green bonds till 2016. However, the major issuers of green bonds in India have primiarliy been private and public banks, public sector power companies and some clean energy companies. The green bond market holds tremendous opportunities for other sets of issuers too, specifically, for municipalities. This trend can be seen globally as well, with municipal bonds being one of the key sources of urban financing in countries like United States, Germany, Sweden and other European countries. The U.S municipal green bond market stood at USD 4.1 billion in 2015 and USD 2.4 billion in 2014, and is estimated to grow upto USD 7.2 billion by the end of 2016.

As India rapidly urbanizes with more than 590 million to live in cities by 2030 (more than double the corresponding number in 2001), urban infrastructure financing is of key significance. It is estimated that between 2012 and 2031, India will need to invest INR 39,187 billion (USD 653 billion), equivalent to 46 per cent of the country's 2012 GDP to meet its urban infrastructure requirements. In contrast, India's municipal expenditure has remained substantially low, while it should be growing. Moreover, with the formalization of India's Nationally Determined Contribution, and the launch of national missions such as Smart Cities Mission, Swacch Bharat Mission, and National Solar Mission, the focus on clean and climate resilient infrastructure is larger than ever. Thus, the green bond market becomes an increasingly attractive opportunity for Indian municipalities to leverage funds for meeting clean and climate-resilient urban infrastructure targets for India.

In this regard, this research study aims to scan the current market as well as future opportunities for municipal green bonds in India. The study has been carried out through a combination of desk research, interviews and stakeholder consultations. The end objective is to create awareness regarding green bonds amongst municipalities and facilitate the development of a more conducive environment for issuance of municipal green bonds, by exploring the various challenges faced by municipalities and potential solutions to these challenges in entering green bond market.

The report provides an overview of the global and Indian green bond market as well as the past municipal bond issuances that have taken place in India. It also touches upon the global municipal bond market and the municipal green bonds issued in other countries, especially, United States, which has emerged as a market leader in municipal green bond issuances. While the report presents various advantages for issuers of municipal green bonds, such as expanded quantum of clean energy finance, broadened investor base, access to low cost and long term capital, and more investment pipelines to meet climate commitments, it also stresses upon some issues which emerged as potential barriers for municipalities in entering the green bond market.

Some of the key barriers that were identified through secondary research analysis and were also resonated in the primary survey results are - lack of in-house capacity or trained professionals for managing bond issuances, and the abundance of existing state funds to meet capital needs, thus, lowering any interest or need for entering the bond market in general, or green bond market, in particular. At the same time, the key incentives which were felt to be significant for issuing municipal green bonds were – regulatory mandates for municipalities to issue green bonds, higher level of support from the government in obtaining credit ratings, relatively easier and flexible requirements for issuing tax-free municipal bonds, and provision of state government guarantee for the issued bonds. These findings were, then, used to draft recommendations on measures that can be taken to develop a strengthened enabling conditions for issuance of municipalities in issuing green bonds.

Introduction

With the announcement of Nationally Determined Contributions (NDCs) by India and their formalization through the Paris Agreement, the focus on low-carbon and sustainable urban development has increased substantially. It has been estimated that an investment of USD 2.5 trillion (at 2014-15 prices) would be required to meet the targets set in the NDC. While Urban Local Bodies (ULBs) have a significant role to play in reaching these targets, the funds available with them may not be sufficient. This makes it important to explore the possibilities of leveraging new and innovative financing instruments which can raise capital for low-carbon projects.

In the recent years, green bonds have emerged as an attractive financing mechanism for both private and public sector organizations to raise capital for projects, assets or other activities that benefit the economy, environment and society. The global green bond market has shown rapid growth in the last decade with research estimating USD 694 billion of outstanding climate-aligned bonds[1].

With a rapid pace of urbanization in India, forecasts estimate that between 2012 and 2031, India will need to invest INR 39,187 billion (USD 653 billion) at 2009–10 prices, equivalent to 46 per cent of the country's 2012 GDP to meet its urban infrastructure requirements.[2] However, the contribution of capital market to urban infrastructure development has historically been quite low. As against a total bond market size in India of USD 812 billion in 2014[3], only 28 municipal bond issues have been made since 1997, mobilizing funds amounting to approximately INR 30 billion (USD 0.5 billion)[4].

With rapid urbanization and the increasing focus on climate-resilient and green infrastructure, it is imperative to expand the largely untapped municipal bond market in general, and to boost the penetration into municipal green bonds market, in particular.

With this backdrop, this report explores various incentives that can potentially encourage the involvement of ULBs in raising funds through green bonds in India, thus promoting low carbon and climate resilient investments. It also draws attention towards barriers in issuance of green municipal bonds, and aims to provide recommendations on creating a more enabling environment for such market-based and climate-friendly financing instruments for Indian municipalities. The report has been built upon the key results derived from a desk review of existing literature on municipal bonds and green bonds, and primary surveys conducted with select municipalities across India.

The following section provides a broad overview of Indian Municipalities and their present roles, responsibilities and mandates.

Overview of Indian Municipalities

The urban local government which works for the development of any city with a population of more than one million is known as a Municipal Corporation in India. The metropolitan cities - Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Pune, Jaipur and Ahmedabad have the largest municipal corporations. The Corporations provide necessary community services to the cities and are formed under the Corporation Act of 1835 of Panchayati Raj system. In order to provide a common framework for urban local bodies and strengthen the functioning of the local bodies as effective democratic units of self-government, an amendment was introduced in the Constitution (74th Amendment Act 1992) providing constitutional status to "municipalities" which are of three types:

1 Bonds and Climate Change: The state of the market in 2016, https://www.climatebonds.net/files/files/reports/cbi-hsbc-state-of-the-market-2016.pdf

2 World Cities Report 2016 - Urbanization and Development: Emerging Futures , UN Habitat

3 Source: CARE Ratings, http://www.careratings.com/upload/NewsFiles/Studies/Indian%20Bond%20Market-%20Striking%20a%20Chord%20with%20Asian%20Peers.pdf

4 Source: https://www.iimb.ernet.in/research/sites/default/files/WP%20No.%20493_0.pdf; Assumed 1 USD = 60 INR

- Nagar Panchayat for transitional area (an area which is being transformed from rural to urban area);
- Municipal Council for a smaller urban area; and
- Municipal Corporation for a larger urban area[5]

The focus of this paper is on the third category i.e. Municipal Corporations. Municipal Corporations consist of a committee which includes a Mayor with Councillors. Primarily, Municipal Corporations are responsible for providing the essential services to the people of that district/area which includes hospitals, water supply, drainage, market places, fire brigades, roads, over bridge, solid waste, street lighting, parks, education, birth and death records in the area[6]. The State Municipal Acts provide an exhaustive list of functions for the Municipal Corporations of each State in India. These functions generally fall in the following broad categories: (a) public health and sanitation; (b) medical relief; (c) public works; (d) education; (e) development; and (f) administrative (Table 1).

There are 194 Municipal Corporations in India distributed across 25 states and 2 Union Territories of India[7]. The common revenue sources for corporations in India include:

- Tax revenue: Government of India lists the following taxes, tolls and fees which are relevant to the ULBs and for which State Legislatures are competent to frame laws:
  – Taxes: on lands and buildings; entry of goods into a local area for consumption, use or sale therein; consumption or sale of electricity; advertisements other than advertisements published in the newspapers and advertisements broadcast by radio or television; goods and passengers carried by road or inland waterways; animals and boats; professions, trades, callings and employments; and luxuries, including taxes on entertainments, amusements, betting and gambling.
  – Tolls
  – Fees in respect of any of the matters in this list, but not including fees taken in any court
- Non-tax revenue: municipal fees, sale and hire charges, user charges, lease amounts.
- Other receipts: sundry receipts, lapsed deposits, fees, fines and forfeitures, Law charges costs recovered, rent on tools and plants, miscellaneous sales.
- Assigned (shared) revenue: profession tax, surcharge on stamp duty, entertainment tax, motor vehicles tax.
- Grants-in-aid: Plan grants made available by way of planned transfers from the upper tier of:
  – Government under various projects, programmes and schemes, and
  – Non-plan grants made available so as to

Table 1: Functions of Municipal Corporations

Category	Description
Public Health and Sanitation	Water supply, public vaccination, control of diseases, prevention of pollution, collection & disposal of rubbish, maintenance of sewers, etc.
Medical Relief	Establishment and maintenance of health institutions, etc.
Public Works	Construction & maintenance of streets, bridges, etc., control and regulation of building activity, street lighting, tree plantations, etc.
Education	Establishment & maintenance of educational institutions, etc.
Development	Construction & maintenance of markets, shopping centres, drinking water stand posts, wells, parks, gardens, etc.; preparation of plans for development and growth of towns, etc.
Administrative	Preparation of annual reports, maintenance & development of municipal property, regulation of traffic, registration of births & deaths, etc.[8]

5 Source: http://pratham.org/file/Role%20of%20Municipal%20Corporation%20in%20Education.pdf

6 Source: http://www.elections.in/government/municipal-corporation-in-india.html

7 Source: http://infoelections.com/infoelection/index.php/indian-politics-53015/about-indian-politics-43710/5990-municipal-corporations-in-india.html

8 Source: http://www.lse.ac.uk/asiaResearchCentre/_files/ARCWP19-Aijaz.pdf

compensate against the loss of income and some specific transfers.

- Borrowings: Loans undertaken by the local authorities for capital works etc., mainly from – Life Insurance Corporation of India, State and Central Governments, banks and municipal bonds in very limited cases.

In addition, the Government of India has also been making allocations to local bodies through Five Year Plans (FYPs) and Finance Commissions. In general, financial resources of municipal corporations are limited, and unable to meet the expenditure requirements, and therefore the dependence on other two upper tiers of government – State and Central government - is substantial. The municipal corporations for major cities in the country, such as Ahmedabad, Bengaluru, Delhi, Chennai, Hyderabad, Kolkata and Mumbai, are able to raise and generate resources by some techniques but in case of smaller towns, dependence on the government is significantly large[9].

[9] Source: https://www.iimb.ernet.in/research/sites/default/files/WP%20No.%20493_0.pdf

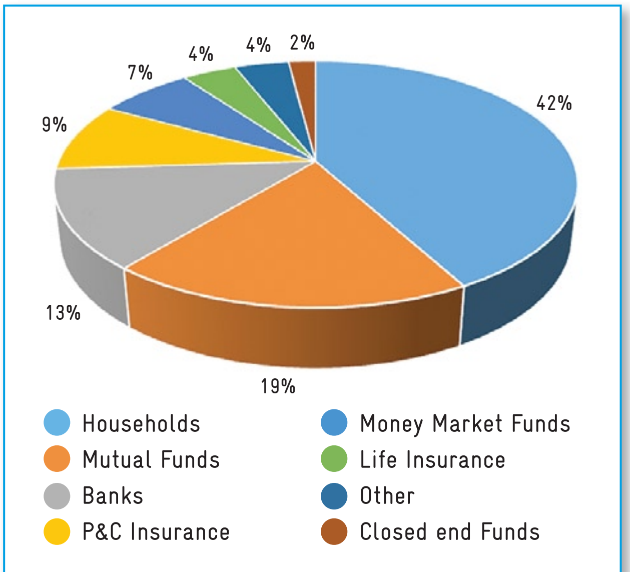
Municipal Bond Market – Growth & Trends

Municipal bond is a bond issued by a city or other local government, or their agencies. It is an evidence of the debt obligation of a ULB to repay a fixed principal amount on a certain maturity date along with the interest, at a stated or formula-based rate. Potential issuers of municipal bonds include cities, counties, redevelopment agencies, special-purpose districts, school districts, public utility districts, publicly owned airports and seaports and any other governmental entity (or group of governments). Municipal bonds may be general obligations of the issuer or secured by specified revenues[10].

2.1 Global Municipal Bond Market

Internationally, especially in United States of America, municipal bonds are one of the key sources of urban financing. The municipal bonds market in the US remains the largest in the world. The largest owners of municipal bonds in the US are individuals, mutual and money market funds, insurance companies and commercial banks.

Figure 1: Participation in U.S. Municipal Bond Market by Investor Type



Counties and other non-federal governments and authorities issued USD 378.9 billion worth of long-term municipal bonds in 2012. In the same year, 88 percent of long-term municipal bond issuances were tax-exempt. Overall, the available municipal bonds (outstanding) in 2012 were valued at USD 3.7 trillion. The type of projects funded by the twenty-one largest municipal bond issuances in the country are illustrated in Figure 2 on the next page.

In Europe, the sub-sovereign market is primarily dominated by agencies and supranational institutions such as the World Bank, KfW and the European Investment Bank (EIB). The market for sub-sovereign bonds in Europe has less individual participation than in the U.S., since individual investors in the U.S. municipal bond market have significant tax advantages for their investments. However, there are certain countries in Europe, such as Germany, in which individual investors are more inclined to participate in the sub-sovereign debt market. All entities that issue sub-sovereign debt are rated by credit agencies on credit worthiness and soundness criteria. Some sub-sovereign bonds are rated almost as high as the highest rated government bonds[11].

Germany has taken a lead in sub-sovereign bonds issuance by issuing the large majority of sub-sovereign debt with 770 issues from 2004 to 2012 worth over 82 per cent of the total municipal debt issued in Europe.[12] However, there are stark differences in trends of bonds issuance between different regions within Europe. While the local governments in Germany finance 47 per cent of their operations through the capital market, the share of bonds in total debt of regional units in France comes to only 6 per cent in 2014. In Spain, the share of bonds in sub-sovereign debt in 2013 came to 24 per cent, compared to 20 per cent in Italy. On the contrary, in 2014, the share of bonds in the total debt of regional units in United Kingdom stood at 5 per cent[13].

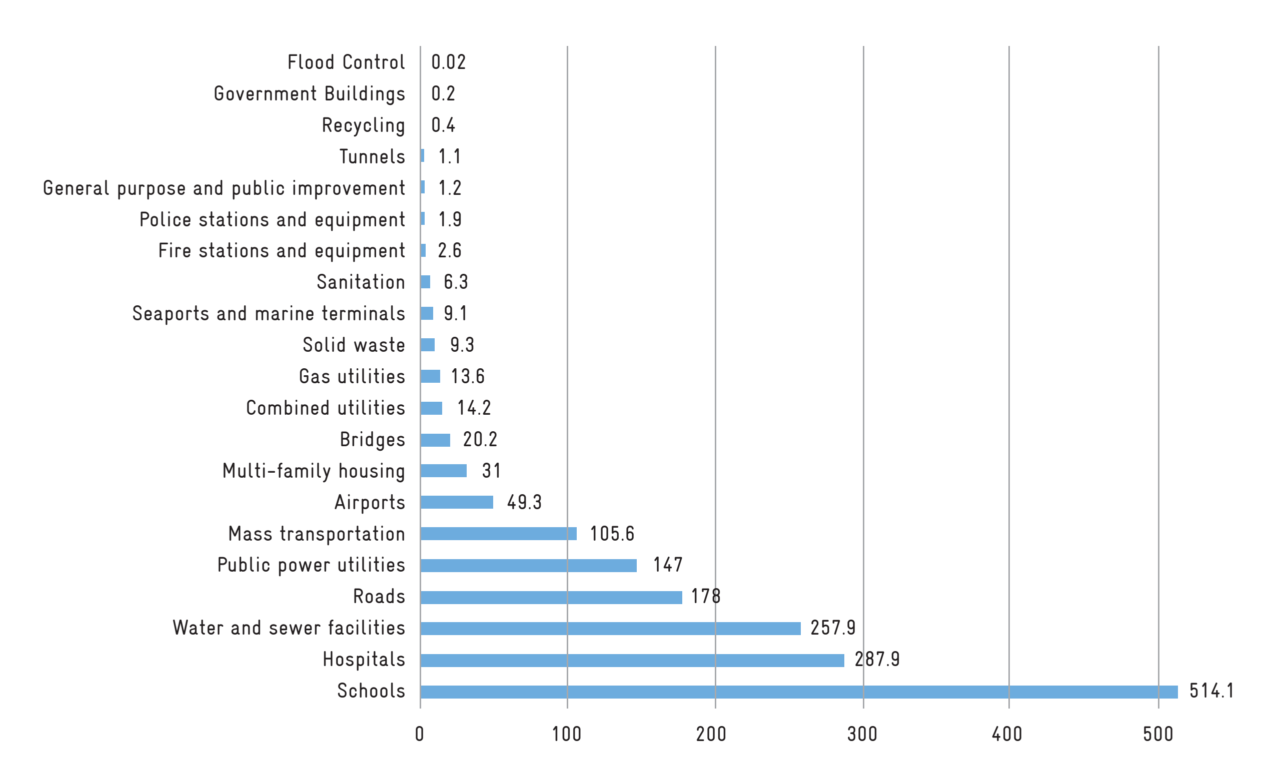
10 http://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/file.php?val=March_2014_1393845974_38326_26.pdf

11 Source: http://www.investinginbondseurope.org/pages/LearnAboutBonds.aspx?folder_id=472

12 Source: Municipal Bonds in India, Swaniti Initiative, www.swaniti.in

13 Source: http://www.dbresearch.com/servlet/reweb2.ReWEB?rwsite=DBR_INTERNET_EN-PROD&rwobj=ReDisplay.Start.class&document=PROD0000000000337911

Figure 2: U.S. Municipal Bond Issuances for the 21 Largest Infrastructure Purposes, 2003-2012[14]



Kommuninvest is a Swedish local government funding agency that was set up in 1986. The scheme aims to help municipal governments in Sweden to raise capital through the issuance of bonds in Europe, Japan and other countries. In 2014, Kommuninvest had a market share of 44 per cent of Sweden's local government sector's total borrowing with 272 of the 290 Swedish municipalities as members. The Kommuninvest scheme is rated AAA by both Standard & Poor's and Moody's and by the end of 2013 Kommuninvest's lending had reached USD 28 billion.[15] The use of municipal bonds to access debt from markets is also growing in developing countries like Brazil, Malaysia and South Africa.

2.2 Municipal Bond Market in India

Several ULBs and utility organizations in India have issued bonds that so far have mobilized over INR 12,316 million (USD 205 million) through taxable bonds, tax-free bonds and pooled financing[16].

The Bangalore Municipal Corporation was the first municipal corporation to issue bonds worth INR 125 crore (USD 21 million) with a state guarantee in 1997. In January 1998, Ahmedabad Municipal Corporation issued bonds worth INR 100 crore (USD 17 million) without a government guarantee.

The Government of India issued guidelines for the Pooled Finance Development Fund (PFDF) Scheme for

Table 2: Municipal Bond Issuances in India

Type of Bond	Amount (INR Million)	Amount (USD Million)
Taxable bonds	4,450	74
Tax-free bonds	6,495	108
Pooled finance	1,371	23
TOTAL	12,316	205

14 Source: http://www.naco.org/sites/default/files/NACo-Research_Policy_MuniBonds_2013_0.pdf

15 Source: https://www.ukmba.org/wp-content/uploads/2015/05/Municipal-Bonds-WEB.pdf

16 Market-based Financing of Urban Infrastructure in India by Chetan Vaidya and Hitesh Vaidya; http://www.skoch.in/images/stories/knowledge_repository/urban/Market%20Based%20Financing%20of%20Urban%20Infrastructure%20in%20India.pdf

small ULBs in November 2006 to raise money from the bond market; however even issuance under the scheme has remained very low. In aggregate, only INR 13.53 billion (USD 226 million) bonds under tax-free, taxable and pooled bonds schemes has been issued[17].

A summary of the taxable municipal bond issuances in India is given in table 3 below:

The Central Government issued guidelines for the Pooled Finance Development Fund Scheme for small ULBs in November 2006 to raise money from the bond market; even issuance under the scheme has remained very low. The schemes was launched mainly to benefit the ULBs, by providing credit enhancement to them, so that they can access market borrowings on the basis of their credit worthiness through the State-Level-Pooled Finance Mechanism. The scheme was set with a corpus of INR 4 billion as a Credit Rating Enhancement Fund (CREF). Of this corpus, 5% is to be utilized as project development assistance and the rest is to provide a third tier of security in case the first two tiers – escrowing of ULBs' resources and any internal arrangements between a state and State Pooled Finance Entity (SPFE) including state interception – are insufficient to meet repayment obligations. Moreover, bonds issued under PFDF scheme are eligible for tax-free status subject to approval by Central Board of Direct Taxes (CBDT). Implementation of the Pooled Finance mechanism requires setting up of a 'State Pooled Finance Entity' in every state. The states which have established their 'State Pooled Finance Entity' are Andhra Pradesh, Assam, Karnataka, Kerala, Nagaland, Orissa, Rajasthan and Tamil Nadu[21].

Table 3: Taxable Municipal Bond Issuances in India

City	Amount (in INR Million)	Placement	Guarantee	Annual Interest	Purpose	Rating
Bangalore (1997)	1,250	Private	State Government	13%	City roads/street drains	A-(SO)
Ahmedabad (1998)	1,000	Public & Private	No	14%	WS&S project	AA-(SO)
Ludhiana (1999)	100	Private	No	13.5% to 14%	WS&S Project	LAA-(SO)
Nagpur (2001)	500	Private	No	13%	WS project	LAA-(SO)
Nashik (1999)	1,000	Private	No	14.75%	WS&S project	AA-(SO)
Indore (2000)	100	Private	State Government	13.0%	Improvement of city roads	A (SO)
Madurai (2001)	300	Private	No	12.25%	City road project	LA+(SO)
Visakhapatnam (2004)	200	Private	No	7.75%	Water supply project	AA-(SO)

In 2001, the central government allowed municipal bodies to issue tax-free bonds provided the bonds met specified guidelines. These guidelines mandated that bonds can be issued only for capital expenditure on urban infrastructure and can be used for specific projects only. The Ministry of Urban Development, the designated body for approval of tax-free bonds, capped the interest rate on the municipal bonds at 8 per cent under notified guidelines[18]. These bonds compete with systematic investment plans and other products offered by the mutual fund industry. During the time of low inflation and a low interest rate regime, tax-free bonds are attractive investment options; however, during a high interest rate regime, these are not a very attractive investment options leading to a lower investor's appetite.[19]

A summary of the tax-free municipal bond issuances in India is in Table 4 on the next page[20].

17, 18 Source: Municipal Bonds in India, Swaniti Initiative, www.swaniti.in

19 Source: Municipal Bonds – A Must for Better Infrastructure, India Ratings & Research, April 2015

20 Market-Based Financing Of Urban Infrastructure In India, A Paper published in Kochar, S. and Ramchandran, M. (Ed.), Building from the Bottom, Academic Foundation, 2010

21 Developing a Regulatory Framework for Municipal Borrowing in India, Volume 2; http://documents.worldbank.org/curated/en/506141468042303569/Annexure-one-to-seven

Table 4: Tax-Free Municipal Bond Issuances in India

City Government	Projects	Amount (INR million)
Ahmedabad Municipal Corporation (2002)	Water supply and sewerage project	1,000
Hyderabad Municipal Corporation (2003)	Road construction and widening	825
Nashik Municipal Corporation (2002)	Underground sewerage scheme and stormwater drainage system	500
Visakhapatnam Municipal Corporation (2004)	Water supply system	500
Hyderabad Metropolitan Water Supply and Sewerage Board (2003)	Drinking water project	500
Ahmedabad Municipal Corporation (2004)	Water supply project, stormwater drainage project, road project, bridges and flyovers	580
Chennai Metropolitan Water Supply & Sewerage Board (2003)	Chennai water supply augmentation project	420
Chennai Metropolitan Water Supply & Sewerage Board (2005)	Chennai water supply project	500
Chennai Municipal Corporation (2005)	Roads	458
Ahmedabad Municipal Corporation (2005)	Roads and water supply	1,000
Nagpur (2007)	Nagpur water supply and sewerage project	212

The initial mobilization of resources in the pooled financing framework in India was by the Tamil Nadu Water and Sanitation Pooled Fund (WSPF). The Government of Tamil Nadu designated Tamil Nadu WSPF as the 'State Pooled Finance Entity'. The WSPF is managed by the Trust Manager, Tamil Nadu Urban Infrastructure Financial Services Limited. During 2002 and 2013 this fund raised a sum of over INR 222 crore (USD 37 million) by issuing bonds under the pooled bond framework.[22]

Box 1: Issues with Pooled Finance Development Scheme

Issues with Pooled Finance Development Fund Scheme

Although the guidelines for Pooled Finance Development Fund Scheme were set in 2006, these pooled finance models for bond issuances have not been widely used by municipalities in India. A wider rollout of the scheme entails setting up of more State Pooled Finance Entities across India in order to provide a boost to the municipalities in issuing bonds through this pooled finance mechanism. The scheme has not been scaled up for a number of reasons:

- Grants from JNNURM (a reform-linked, grant based scheme of MoUD launched in 2005 to fund urban infrastructure projects of ULBs in 63 cities) have crowded out demand for market debt
- Higher weighted average cost of capital of ULBs due to market debt compared to traditional government grant-based financing has deterred ULBs from participating in the pooled fund.
- Rigid escrow account mechanism as part of the PFDF scheme requiring ULBs to transfer annual Debt Service Coverage Ratio (DSCR) as monthly installments adds to their borrowing cost.
- Complicated and lengthy approval process as against a small credit enhancement support and delays in obtaining tax-free status for bonds.
- Other constraints such as interest rate cap, long tenure, and illiquid market for bonds reduce attractiveness to investors.
- Delays in operationalizing SPFEs in most states.
- Lack of a process guidance framework for municipalities

22 Source: http://tnuifsl.com/wspf.asp

The Karnataka Water and Sanitation Pooled Fund (KWSPF) was created in 2003. KWSPF was approved by the Government of Karnataka to function as the 'State Pooled Finance Entity'. The Fund Manager/ Asset Management Company for the issue of these Bonds is the Karnataka Urban Infrastructure Development and Finance Corporation Limited (KUIDFC). KWSPF raised INR 100 crore (USD 17 million) in 2005 for the Greater Bangalore Water Supply and Sewerage Project.[23]

In March 2015, SEBI rolled out a new regulatory framework for issuing of debt securities by municipalities. ULBs are allowed to issue both general obligation and revenue bonds. However, public issuance is limited to revenue bonds only. In case of a private placement, an issuer can issue general obligation or revenue bonds. The issuer has to contribute at least 20 per cent to the project cost either from internal accrual or grants. Only ULBs with an investment grade rating (rated BBB- or higher) are allowed to do a public issuance. A minimum tenor of three years, no default in last 365 days and positive net worth are some other conditions for a municipal bond issuance. The key regulatory requirements for issuance of municipal bonds in India are described in Table 5.[24]

Table 5: Regulatory Requirements for Issue of Municipal Bonds in India

SEBI Requirements for issue of municipal bonds, SEBI (Issue and Listing of Debt Securities by Municipality) Regulations, 2015

Eligibility

- **Accounts** of Municipality shall be **prepared in accordance with National Municipal Accounts Manual** or in accordance with similar Municipal Accounts Manual adopted by the respective State Government for at least last three preceding financial years.
- Municipality **shall not have negative net worth** in any of the **last three** preceding financial **years**.
- Municipality **shall not have defaulted in repayment of debt securities or loans** obtained from Banks/ Financial Institutions.
  'Default' means where interest and or principal amount has remained overdue for a period of more than 90 days.
- The Corporate Municipal Entity or its **directors have not been restrained or prohibited or debarred by the Board** from accessing the securities market or dealing in securities and such direction or order is in force.

Requirements for Public Issue

- The issuer should have made an application to one or more recognized stock exchanges for listing of such securities therein.
- Should have obtained in-principle approval for listing of its debt securities on the recognized stock exchanges where the application for listing has been made.
- **Credit rating** should have been obtained from **at least one recognized credit rating agency** registered with the Board and is disclosed in the offer document.
  In case of public issue of securities by the Issuer, the debt securities intended to be issued shall have a minimum **rating of A+** or equivalent.
- Should have entered into an arrangement with a depository registered with the Board for dematerialization of the debt securities that are proposed to be issued to the public, in accordance with the Depositories Act, 1996.

Continued >

23 Source: https://www.iimb.ernet.in/research/sites/default/files/WP%20No.%20493_0.pdf
24 Source: Source: Municipal Bonds – A Must for Better Infrastructure, India Ratings & Research, April 2015

- The debt securities shall have a **minimum tenure of 3 years**.
- The issuer shall appoint one or more merchant bankers registered with the Board at least one of whom shall be a lead merchant banker.
- The issuer shall create a separate escrow account for servicing of debt securities with earmarked revenue.
- The issuer shall appoint a monitoring agency such as public financial institution or nationalised banks to monitor the earmarked revenue in the escrow account.

Listing of Debt Securities

- **Accounts** of Municipality shall be prepared in **accordance with National Municipal Accounts Manual** or in accordance with similar Municipal Accounts Manual adopted by the respective State Government for at least last three preceding financial years.
- The issuer or its directors **should not have been restrained or prohibited or debarred by the Board** from accessing the securities market or dealing in securities.
- The issuer shall not solicit or collect funds except by way of private placement.
- The **minimum subscription amount per investor shall not be less than Rupees twenty five lakhs** or such amount as may be specified by Board from time to time.
- **Credit rating** has been obtained in respect of such debt securities **from at least one credit rating agency** registered with the Board;
- The debt securities proposed to be listed are in dematerialized form.

Requirements for issue of tax-free municipal bonds, GoI Guidelines, 2001

- The funds raised from such bonds shall be used only for capital investments in urban infrastructure for providing one or more of specified activities.
- The proceeds of the proposed issue shall be **clearly earmarked for a defined project** or a set of projects.
- The project(s) shall be **financially viable** (project(s) should be able to generate a stream of revenue which should be sufficient to finance O&M cost).
- The issuer shall create an **escrow account for debt servicing of bond proceeds** and for meeting O&M costs of the proposed project with earmarked revenue.
- Can raise fund either through public issue or by private placement.
- Shall provide an additional debt covenant under which the **Debt Service Coverage Ratio (DSCR) of at least 1.25** is maintained throughout the tenor of the Tax Free Municipal Bond.
- The **maximum amount of such bonds as a percentage of the total project costs (excluding interest during construction) will be 50 per cent** per cent or **INR 300.00 crore** whichever is lower.
- The **debt equity ratio for the project shall not exceed 3:1**.
- **Issuers shall at least contribute 20 per cent of the project costs** either from internal resources or other grants or a mix of the two.
- It will be mandatory for the issuer to obtain an investment **grade rating**.
- Only bonds carrying **interest rate upto maximum 8 per cent per annum** shall be eligible for notification by CBDT.

In December 2005, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was launched by the government for a period of seven years with an outlay of INR 660.85 billion (USD 11 billion). The objective of this programme, with grants from both central and state governments, was to improve urban infrastructure, reform and governance. It also encouraged ULBs to explore alternative financing instruments such as bonds to finance investments in urban infrastructure and thus assisted 65 cities in obtaining credit ratings[25].

These credit ratings, though dating back to November 2012, indicate that 37 municipalities have minimum investment grade credit rating, and thus, could potentially be eligible for issuance of municipal bonds, provided they have continued to maintain these credit ratings and also met other eligibility criteria set by SEBI such as positive net worth for the past three financial years and no default. It is estimated that a potential of INR 1,000-1,500 crore per annum could be raised through municipal bonds over the next five years by the larger municipals with investment grade[26].

A summary of the credit ratings are provided in Table 6.

Table 6: Credit Ratings of Indian Municipal Corporations, 2012

Rating Category	No. of Cities	Cities	Key Credit Factors
AAA	Nil	-	-
AA, AA- and AA+	11	Delhi, Greater Mumbai, Hyderabad, Navi Mumbai, Nashik, New Delhi Municipal Council, Surat, Hyderabad, Pimpri-Chinchwad, Pune and Thane	Robust debt coverage ratios, strong finances, adequate managerial, technical and institutional abilities, healthy economic base and generate consistent revenue surpluses.
A, A- and A+	10	Ahmedabad, Chandigarh, Kalyan-Dombivili, Kolkata, Mira Bhayanadar, Nagpur, Rajkot, Vijayawada, Vishakhapatnam, Vadodara	Cities in this category generally have comfortable financial risk and favourable economic base.
BBB, BBB- and BBB+	16	Ajmer, Bhopal, Bhubaneshwar, Chennai, Cochin, Coimbatore, Dehradun, Faridabad, Indore, Jaipur, Ludhiana, Madurai, Mysore, Panaji, Raipur, Trivandrum	Weak financial profile, high dependence on government grants/transfers and weak project implementation abilities.
BB, BB- and BB+	18	Agartala, Agra, Amritsar, Asansol, Guwahati, Howrah, Jammu, Jabalpur, Kanpur, Kulgaon Badlapur, Lucknow, Meerut, Puducherry, Ranchi, Shimla, Srinagar, Ujjain, Nanded	Marginal/negative operating surpluses thereby limiting ability to borrow and service additional debt
B, B- and B+	10	Allahabad, Bangalore, Bodhgaya, Haridwar, Imphal, Kohima, Mathura, Shillong, Jamshedpur, Varanasi	Inadequate and volatile grant support from State Government; poor economic base and adverse financial profile marked by poor collection efficiencies.
C	1	Puri	Poor economic base

25 Source: https://www.indiaratings.co.in/upload/research/specialReports/2015/4/29/indra29Muni.pdf

26 Source: http://www.careratings.com/upload/NewsFiles/Studies/Municipal%20Bond%20Market%20in%20India-%20The%20Way%20Ahead.pdf

Opportunities for Municipalities in Green Bonds Market

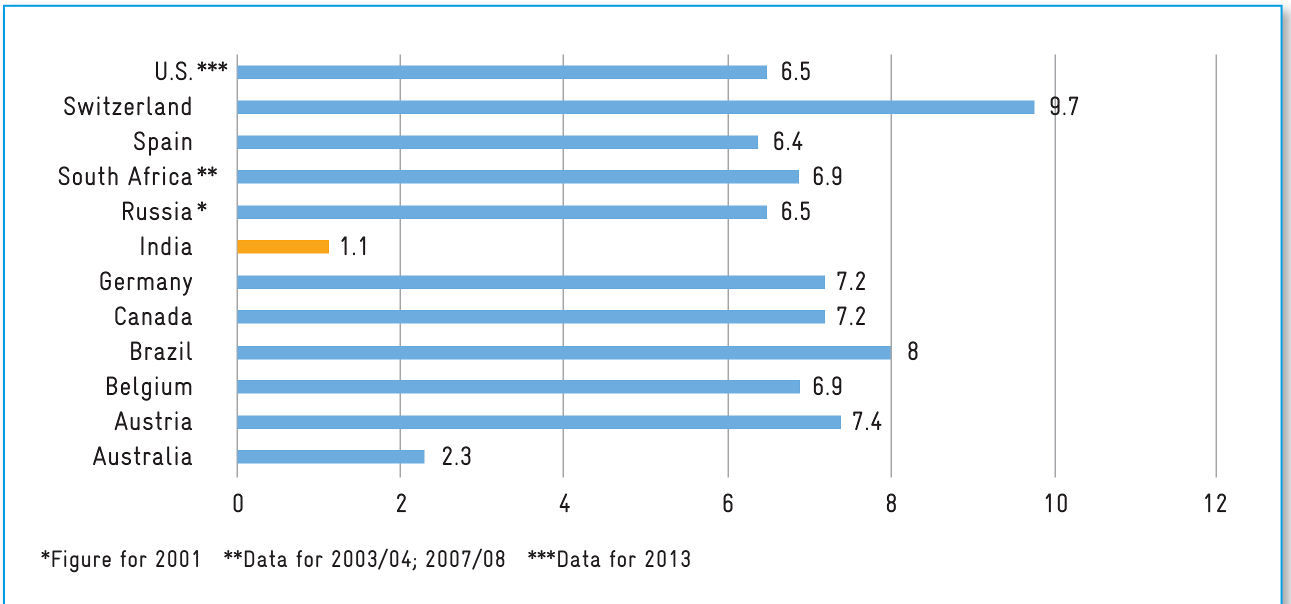
India is undergoing a rapid urbanization, with increasing number of population transitioning to urban population. According to a United Nations (UN) report, urban areas already contribute more than 60 per cent to India's Gross Domestic Product (GDP) and an extra 300 million new urban residents are projected to be added by 2050.

As India rapidly urbanizes, urban governance and administration, in general, and meeting the financial needs of urban areas in particular, has acquired greater urgency. By 2030, 590 million will live in cities, more than double the corresponding number in 2001; 91 million urban households will be middle class with expectations of better quality and quantity of urban amenities. According to the Report on Indian Urban Infrastructure and Services, between 2012 and 2031, India will need to invest INR 39,187 billion (USD 653 billion) at 2009–10 prices, equivalent to 46 per cent of the country's 2012 GDP to meet its urban infrastructure requirements. In contrast, it is estimated that for 2012-13, India's municipal expenditure would be equivalent to only 1.53 per cent of GDP, and less than a third would be met from own revenue sources.

However, the level of municipal expenditure has not been rising at a similar pace. The low level of aggregate municipal expenditures in India, relative to GDP can be seen in Figure 3. With only 1.1 per cent of GDP, municipal expenditures in India compare very unfavorably with OECD countries, but even with other BRICS countries such as Brazil, Russia and South Africa[27].

Currently, to a large extent, municipalities depend on grants from upper tier governments (central and state) for revenue. This shows a strong need for use of market financing instruments for raising capital by ULBs to meet the urban development requirements. Moreover, with the launch of national missions such as Smart Cities Mission, Swacch Bharat Mission, and National Solar Mission, the prevalence of projects that would be eligible for green bonds would increase. Since the Municipal Corporations would also be partially responsible for implementation of projects under these Missions, the need for utilization of market instruments for raising capital is high.

Figure 3: Municipal Expenditure as Share of GDP by country



27 World Cities Report 2016 - Urbanization and Development: Emerging Futures, UN Habitat

3.1 What are Green Bonds?

A green bond, like any other bond, is a fixed-income financial instrument for raising capital through the debt capital market. In its simplest form, the bond issuer raises a fixed amount of capital from investors over a set period of time, repaying the capital when the bond matures and paying an agreed amount of interest (coupons) along the way. The key difference between a 'green' bond and a regular bond is that the issuer publicly states it is raising capital to fund 'green' projects, assets or business activities with an environmental benefit, such as renewable energy, low carbon transport or forestry projects[28].

There are various guidelines in the green bond market such as the Green Bond Principles and the Climate Bonds Standard. The Green Bond Principles (GBP) provide international best practices on the green bond process and the Climate Bonds Standard adds sector-specific criteria to these principles. A brief description of these guidelines is provided in Table 7.

Table 7: Global Standards for Green Bonds

Attribute	Climate Bond Standard	Green Bond Principles
Organization	Climate Bonds Standard	Consortium of major investment banks led by JP Morgan Chase
Issued Date	Nov, 2011 ("Prototype")	January, 2014
Focus	Low-carbon development within defined technology scope	Any environmental benefit within use of proceeds scope
Bond Types:	Corporate Portfolio Green Project – Defined by technical criteria for eligible project category	Use of Proceeds – recourse-to-issuer Revenue – nonrecourse Green Project Securitized (green asset-backed)
Assessment Criteria within Scope of "Eligibility"	• Use of Proceeds • Project Evaluation and Selection • Management of Proceeds • Reporting	• Use of Proceeds • Project Evaluation and Selection • Management of Proceeds • Reporting

3.1.1 Green Bond Principles

The Green Bond Principles (GBP) are voluntary process guidelines that recommend transparency and disclosure, and promote integrity in the development of the green bonds market by clarifying the approach for issuance of a green bond. The GBP are intended for broad use by the market: they provide issuers with 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 expected disclosures which will facilitate transactions. The GBP have four core components:

• **Use of Proceeds**: The cornerstone of a Green Bond is the utilization of the proceeds of the bond for Green Projects. The GBP explicitly recognize several broad categories of eligibility for Green Projects, which include, but are not limited to:

– renewable energy (including production, transmission, appliances and products);

– energy efficiency (such as in new and refurbished buildings, energy storage, district heating, smart grids, appliances and products);

– pollution prevention and control (including waste water treatment, greenhouse gas control, soil remediation, recycling and waste to energy, value added products from waste and remanufacturing, and associated environmental monitoring analysis);

– sustainable management of living natural resources (including sustainable agriculture,

– fishery, aquaculture, forestry and climate smart farm inputs such as biological crop protection or drip-irrigation);

28 Source: Gearing up for Green bonds, Sustainable Insight, KPMG International Publication, 2015.

– terrestrial and aquatic biodiversity conservation, (including the protection of coastal, marine and watershed environments);

– clean transportation (such as electric, hybrid, public, rail, non-motorized, multi-modal transportation, infrastructure for clean energy vehicles and reduction of harmful emissions);

– sustainable water management (including sustainable infrastructure for clean and/or drinking water, sustainable urban drainage systems and river training and other forms of flooding mitigation);

– climate change adaptation (including information support systems, such as climate observation and early warning systems);

– eco-efficient products, production technologies and processes (such as development and introduction of environmental friendly, eco labelled or certified products, resource efficient packaging and distribution).

- **Process for Project Evaluation and Selection**: The GBP defines that the issuer of a Green Bond should outline:

– a process to determine how the projects fit within the eligible Green Projects categories identified above;

– the related eligibility criteria; and

– the environmental sustainability objectives

- **Management of Proceeds**: The GBP defines the procedures for crediting of net proceeds of Green Bonds (credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the issuer in an appropriate manner and attested to by a formal internal process linked to the issuer's lending and investment operations for Green Projects).

- **Reporting**: GBP stresses on transparency in communication of the extended impact of green projects, and recommends the use of qualitative performance indicators and, where feasible, quantitative performance measures.[29]

3.1.2 Climate Bonds Standard

The Climate Bonds Standard is a screening tool for investors and governments which allows them to easily prioritize climate and green bonds with confidence that the funds are being used to deliver climate change solutions. The Standard consists of a certification process, pre-issuance requirements, post-issuance requirements and a suite of sector-specific eligibility & guidance documents, and is well integrated with 2015 Green Bond principles. The Standard is structured in 3 parts:

Part A: General Requirements
This Part sets out the clauses with requirements that apply to all Climate Bonds. They are designed to ensure uniformity and consistency across the Climate Bonds asset class and include requirements around use of proceeds; ESG disclosure and non-contamination.

Part B: Low-Carbon Contribution
This Part sets out the eligible projects and physical assets that, for the purposes of this Standard, will be regarded as contributing to the delivery of a Low-Carbon Economy. It also includes references to specific technical criteria that will be required for certain projects and physical assets.

Part C: Bond Structures
This part sets out clauses specific to certain bond-types.

The sector specific standards for solar, wind, low carbon buildings, geothermal and low carbon transport are also listed out. Similar sector specific standards for sectors such as water, bioenergy and agriculture & forestry are currently undergoing an approval and public consultation process, and are expected to be published soon.[30]

3.2 Overview of Green Bonds Market – Global and Indian Scenario

Green bonds were created to fund projects that have positive environmental and/or climate benefits. The majority of the green bonds issued are green "use of proceeds" or asset-linked bonds. Proceeds from these bonds are earmarked for green projects but are backed by the issuer's entire balance sheet. There have also been green "use of proceeds" revenue bonds, green project bonds and green securitized bonds.

Globally, green bonds are becoming a rapidly growing market for debt instruments. The green bond market took off in 2014 with USD 36.6 billion issued; triple the amount issued in 2013 (USD 11 billion). In 2015, USD 41.8 billion worth of green bonds were issued[31].

Broadly, there are four different types of green bonds[32]:

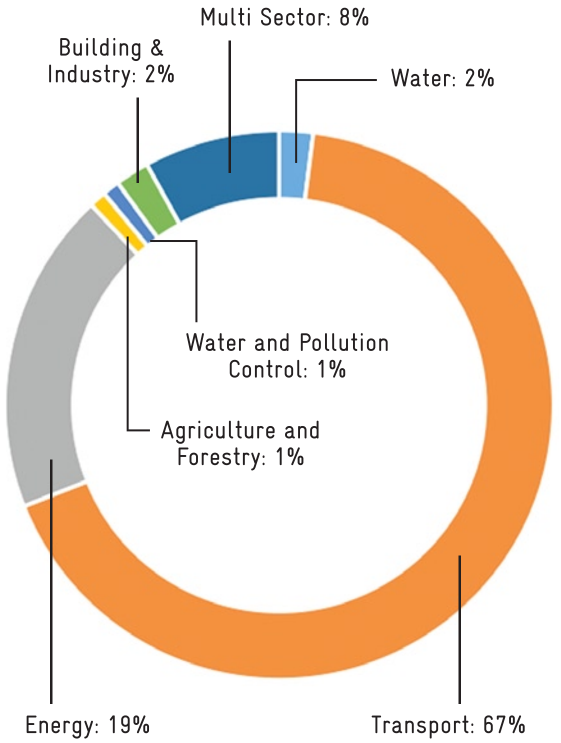
29 Source: The Green Bond Principles (updated as of 2016), ICMA.
30 Source: Climate Bonds Initiative Website, https://www.climatebonds.net/standards/about
31 Source: http://www.climatebonds.net/files/files/2015%20GB%20Market%20Roundup%2003A.pdf
32 Source: https://www.climatebonds.net/market/explaining-green-bonds

Table 8: Types of Green Bonds

Type	Proceeds used by bond sale are	Debt Recourse
Green "Use of Proceeds" bond	Earmarked for green projects	Standard/full recourse to the issuer; therefore, same credit rating applies as to issue other bonds
Green "Use of Proceeds" Revenue bond	Earmarked for green projects	Revenue streams from the issuers through fees, taxes, etc. are the collateral for the debt
Green Project Bond	Ring-fenced for the specific underlying green project(s)	Re-course is only to the project's assets and balance sheet
Green Securitized Bond	Either a) earmarked for green project, or b) go directly into the underlying green projects	Re-course is to a group of projects that have been grouped together (i.e., covered bond or other structures)

Majority of the green bond proceeds across the world have been utilised in transport and energy projects, as illustrated in Figure 4.[33]

Figure 4: Use of Green Bonds Proceeds in 2016



India has played an active role in issuance of green bonds as compared to other countries, which is illustrated in Table 9.

Table 9: Green Bonds Issuance by Country, 2016

Country	Amount (USD)
USA	111.3 billion
France	63.9 billion
UK	61.8 billion
Canada	27 billion
Germany	14.3 billion
Netherlands	10.4 billion
Sweden	6.1 billion
Norway	4.9 billion
India	2.7 billion
Brazil	2.4 billion
Denmark	1.4 billion
Mexico	1.2 billion

Several entities in India (including banks, public sector units and power companies) have issued green bonds, with USD 2.7bn issued as of 12th of October 2016, making India the 7th largest labelled green bond issuer.[34] India continued taking a proactive role in green bonds market in 2015 with smaller issuances of USD 100 million to USD 200 million that have high potential of scaling-up. The details of Indian green bond issuances are provided in Table 10[35].

33 Source: Climate Bonds Initiative 2015, Green Bonds Market Roundup, http://www.climatebonds.net/files/files/2015%20GB%20Market%20Roundup%2003A.pdf

34 Source: State of the Market – India, Climate Bond Initiative, 2016

35 Source: NRDC Publication, Greening India's Financial Market: How Green Bonds Can Drive Clean Energy Deployment

Table 10: Green Bonds Issuances in India

Issuer	Description	Projects Funded	Investors
Yes Bank	Yes Bank, one of India's largest private sector banks – issued its first green infrastructure bond in February 2015. The Euro-denominated R10 billion (USD 161 million) 10-year issue received an AA+ rating.	Renewable energy infrastructure projects, including solar, wind, biomass and hydropower projects	The bond had a wide range of investors and was oversubscribed by almost over two times, demonstrating a huge demand.
Yes Bank	Yes Bank issued another 10-year INR 3.15 billion (USD 50 million) green bond in August 2015.	Renewable energy infrastructure projects, including solar, wind, biomass and hydropower projects	The entire issue was subscribed by the International Finance Corporation (IFC), part of the World Bank Group.
Export-Import Bank of India	Issued India's first ever and Asia's second dollar-denominated green bond in March 2015. The sale, initially aimed at USD 300 million, raised USD 500 million for a five-year green bond to international investors. The BBB- rated issue was oversubscribed by more than three times, attracting a total of USD 1.6 billion in bids.	The issue proceeds are directed towards funding eligible green projects in Bangladesh and Sri Lanka.	A majority of investors were asset managers, with banks and sovereign wealth funds with insurance companies accounting for the rest of the interested parties.
CLP Wind Farms	CLP Wind Farms, the largest wind power developer in India with 1,000 MW of wind energy assets in the pipeline across 6 states, became the first Indian corporate (non-bank) issuer of green bonds in September 2015. CLP Wind Farms raised INR 6 billion (USD 100 million), receiving an AA- rating. The bonds have been offered at a coupon of 9.15% per annum, in three equal tranches of INR 200 crore (USD 33 million) and will mature every April in 2018, 2019 and 2020.	The proceeds will be used both for capital expenditures and refinancing of wind assets.	The bond primarily attracted Indian mutual funds as investors.
ReNew Power Ventures	This leading Indian clean energy company issued the second corporate green bond in the country, and is the first to boast a credit-enhanced structure in September 2015. The bond matures in 17.5 years (2033).	The proceeds of the INR 4.51 billion (USD 75 million) green bond is intended to refinance bank loans for the company's 85 megawatts (MW) wind power plant in Maharashtra.	Asian Development Bank (ADB) and India Infrastructure Finance Company Ltd. (IIFCL) jointly guaranteed the bond, to increase its credit rating from BBB to AA+ to draw more institutional investors.
Hero Future Energies	The green energy arm of the Hero Group, one of India's leading industrial conglomerates, issued the country's first certified climate bond in February 2016. Hero Future Energies raised INR 3 billion (USD 44 million) by issuing nonconvertible debentures – certified by the Climate Bonds Standard.	The proceeds were used to finance the development of wind energy projects in Madhya Pradesh, Telangana, and Andhra Pradesh with cumulative capacity of 521.5 MW.	–

IDBI Bank	India's State-Owned IDBI Bank raised USD 350 million in BBB-rated 5-year green bonds in November 2015, becoming India's first public-sector bank to raise funds through green bonds. The issue, certified through the Climate Bond Standard, was oversubscribed by over three times, with prospective investors offering a total of USD 1.1 billion.	The proceeds were used to finance renewable energy projects.	82 percent of the investment came from Asia and the rest from Europe (18 percent).
IREDA	In January 2016, IREDA issued a tax-free R10 billion (USD 150 million) green bond which was oversubscribed by over five times on the opening day. The tax-free bond offered retail investors up to 7.68 percent interest rate for tenures ranging between 10 and 20 years. Factoring in tax savings, the effective interest rate for investors is substantially higher than bank fixed deposits, which attract income tax on interest income.	The proceeds were used to finance renewable energy projects.	IREDA green bond successfully reached a broad base of investors including retail individual investors, high net-worth individuals, and institutional buyers.
Axis Bank	Axis Bank raised USD 500 million from global investors through its green bond issue. This is the first 'labelled climate bond initiative' certified bond issued by a bank from Asia and also the first Indian green bond to be listed on the London Stock Exchange.	The proceeds are to be used in wind, solar, low carbon transport & low carbon buildings – commercial projects[36].	Asia accounted for 48 per cent of the investors, while 25 per cent came from Europe, followed by Americans at 16 per cent and West Asia investors constituted 11 per cent[37].
NTPC	India's largest power generation company, publicly-owned NTPC Limited, issued a green bond in August 2016. Receiving orders of over INR 29 billion, the Certified Climate Bond attracted an oversubscription ratio of 1.45 with strong response from investors enabling NTPC to upsize the issue size from their original target amount of INR 10 billion (USD 167 million).	The proceeds are to be used for financing renewable energy (mainly wind and solar) projects in India.	The investor uptake was split with 80% Asset Managers, Insurers & SWFs, 15% to Banks, and 5% to Private Banks. Demand was strongest in Asia at 70% and 30% in the EU and Middle East[38].
PNB Housing Finance	PNB Housing Finance Limited, India's 5th largest Housing Finance Company, issued secured fixed rate NCDs to International Finance Corporation (IFC) to raise INR 500 crore in May 2016.	The proceeds are to be used for financing green residential projects which are certified by recognized green building certification standards, including EDGE (certification programme developed by IFC).[39]	IFC, a member of the World Bank Group, has invested INR 5 billion ($75.8 million) in green bonds issued by Punjab National Bank Housing Finance Ltd. (PNBHFL).[40]
Greenko	Greenko, a clean energy firm raised USD 500 million by issuing green bonds in August 2016.	The proceeds are to be used for financing renewable energy projects.	The issuance witnessed oversubscriptions of seven to ten times. The investors included fund managers, private banks and providential funds from Asia, Europe, USA and West Asia.[41]

36 Source: Climate Bonds Initiative, http://www.climatebonds.net/standards/certification/Axis

37 Source: http://www.business-standard.com/article/finance/axis-bank-raises-500-mn-from-its-maiden-green-bonds-116052401466_1.html

38 Source: Climate Bonds Initiative, https://www.climatebonds.net/standards/certification/ntpc

39 Source: http://www.pnbhousing.com/wp-content/uploads/2016/04/revised-ifc.pdf

40 Source: http://ifcextapps.ifc.org/ifcext%5Cpressroom%5Cifcpressroom.nsf%5C0%5CEACC9D94B3BC863785257F95002FB57E

41 Source: http://economictimes.indiatimes.com/markets/stocks/news/greenko-raises-500-million-via-indias-first-high-yield-green-bond-issuance/articleshow/53648517.cms

3.3 Projects Eligible for Green Municipal Bonds

In order to determine eligibility, the Green Bonds Principles are the most common principles that provide a list of projects that are considered to be "green". However, not all of the projects listed under Green Bond Principles fall under the ambit of Municipal Corporations.

sustainable water projects. This was followed by green bonds issued by European cities and municipalities, leading to an increasing trend and several new entrants.

The issuance of U.S. municipal green bonds is increasing, joining a trend in the broader market for similarly labeled debt instruments. The municipal green bond market is estimated to grow between USD 6.3 billion and USD 7.2 billion of green bonds in 2016, a meaningful step up from USD 4.1 billion in 2015 and USD 2.4 billion in 2014[42].

Table 11: Potential Projects for Green Municipal Bonds

Category	Eligible Projects
Energy	• Renewable energy based or Energy efficient (LED) street lighting, public spaces lighting, and commercial lighting • Biomass energy generation
Waste Management	• Sewage treatment facilities with methane capture • Low-emission garbage tracks and related infrastructure • Recycling plants • Qualifying waste-to-energy generation
Green Infrastructure	• LEED certified buildings (gold and above recommended) • Energy efficiency and conservation projects in buildings • Rehabilitation of transmission facilities to reduce greenhouse gas emissions • Public housing built to high energy efficiency standards
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
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
Industrial Efficiency	• Cement production: substantial reductions in greenhouse gas emissions • Waste heat recovery systems • Energy efficient motors

Table 11 provides a list of projects that can be considered relevant for Municipal Corporations, although the level of alignment depends on the precise responsibilities provided to a given corporation under the State Municipality Act.

3.4 Municipal Green Bonds – International Experience

Municipal Green Bonds issuance started in the U.S. in 2014 under green properties for universities and

An interesting case study of green bonds issuance by Commonwealth of Massachusetts (Box 2) exemplifies how green bonds actually gave them an edge over the non-green bonds amongst the investors, as it was easier to showcase the impact of projects funded using green bonds[43].

42 Source: : http://www.careratings.com/upload/NewsFiles/Studies/Municipal%20Bond%20Market%20in%20India-%20The%20Way%20Ahead.pdf

43 Source: https://www.nrdc.org/sites/default/files/greencitybonds-ib.pdf

Figure 5: Green Municipal Bonds Proceeds in U.S.

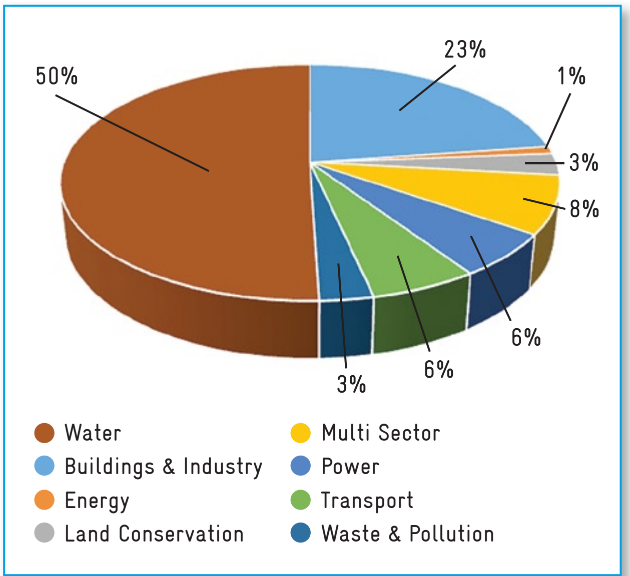
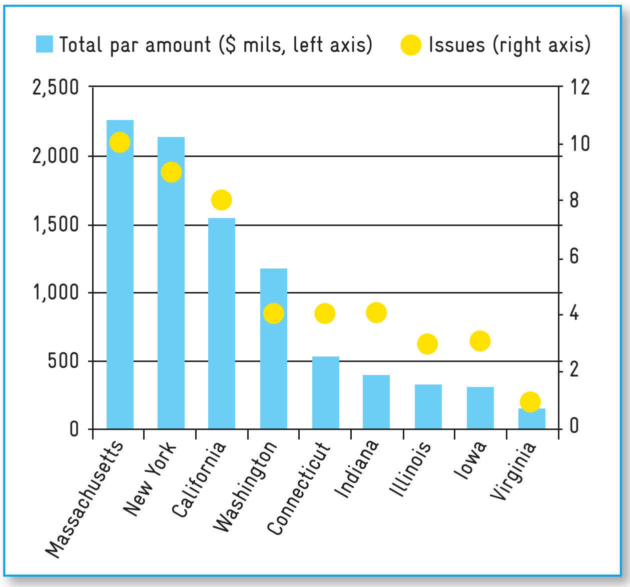


Figure 6: Green Municipal Bond Market in U.S.



Box 2: Case study of green bonds issuance by Commonwealth of Massachusetts

Case Study: Commonwealth of Massachusetts September 2014 Green Bond

Issue date: September 2014 **Size**: USD 350 million Tenor: 5 to 17 years **Yield**: 2.45 percent
Rating: AA+ Fitch / Aa1 Moody's / AA+ S&P

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

The Commonwealth of Massachusetts completed its successful inaugural USD 100 million green bond issuance in 2013. Multiple factors led Massachusetts to the green bonds 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 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.

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.

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 USD 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.

3.5 Advantages for Issuing and Investing in Municipal Green Bonds

While the municipal bond market in India is still at a nascent stage, and there is yet to be a municipal green bond issuance in the country, there are several advantages for municipal corporations in issuing green bonds. Some of these are:

- **Green bonds expand the quantum of clean energy finance and broaden investor base**: To meet India's clean energy targets, a variety of mechanisms and instruments are needed to mobilize adequate finance in a timely manner. Infrastructure financing in India has traditionally been supported by banks, non-banking financial companies (NBFCs) and financial institutions. Given the huge investment needed to scale renewable energy, existing traditional financing sources such as domestic bank loans are not sufficient to support capacity addition.

- **Green bonds provide access to low cost, long term capital**: Green bonds are cost-competitive with other bonds and can provide capital at a lower cost than commercial bank loans. Cost of capital through green bonds can be lowered even further through strategies such as forex hedging and standards and certifications.

- **Green bonds increase liquidity and drive green investment by enabling refinancing**: Green bonds offer a strategy for refinancing existing loans allowing proceeds to be used for further investment in renewable energy and other sustainable development projects.

- **Green bonds create investment pipelines to meet climate commitments**: The international investor community can use green bonds to meet growing demand to support climate-friendly investments. Investors are increasingly focused on integrating Environment, Social and Governance (ESG) factors into their investment processes.

Findings and Recommendations

Municipal green bonds have the potential of financing large investments for green and climate-friendly urban development projects compared to the staggered investments that urban local bodies currently make based on operating incomes. The funds raised by municipal bonds in India so far has been significantly small, and there is substantial scope for scaling it up by promoting the concept of municipal green bonds to meet their green development targets. The low level of municipal involvement in bond market is often attributed to bottlenecks such as lack of creditworthiness, non-bankability of projects, lack of project management and insufficient human resources, among others.

Although green bonds have a strong potential as an innovative financing mechanism for Municipal Corporations in financing green infrastructure projects, there are some common barriers that have stifled their growth. Political will, if suitably complemented with a regulatory push, can encourage issuance of green municipal bonds in India. Structural and administrative changes are also required to be heralded to ensure that sufficient incentives to push municipalities to capital markets are in place.

This Chapter presents the findings from our analysis of regulatory structure for municipal bonds and municipal bond market in India, and results of the surveys conducted with various municipalities across India.

4.1 Key Findings – Barriers and Opportunities

Key Barriers

From our analysis, the following regulatory requirements emerged as potential barriers to issuance of municipal bonds and municipal green bonds in India:[44]

- **Eligibility of Municipalities**: The eligibility requirements for municipalities to be able to issue bonds are, in general, quite stringent. A minimum investment grade of (BBB- and above), and a positive net worth for the three financial years before the issuance year is required. The definition of 'default' in SEBI (Issue and Listing of Debt Securities by Municipality) Regulations, 2015, is different from the definition of default prescribed by SEBI in its guidelines for credit rating agencies.

  – Definition of Default in Draft SEBI (Issue and Listing of Debt Securities by Municipality) Regulations, 2015: Interest and/or principal amount remaining overdue for a period of more than 90 days.

  – Definition of Default in Guidelines for Credit Rating Agencies: Non-payment of interest or principal amount in full on the pre-agreed date; a credit rating agency shall recognize a default at the first instance of delay in the servicing of interest or principal on the rated debt instrument.

The new definition of default in the draft SEBI regulations for municipal bonds is pragmatic. A clarification from the regulator is required whether this definition is applicable only for municipal bonds and loans or will be applied uniformly across all capital market transactions including loans from commercial banks and other financial institutions. In RBI's regulation for bank loans, standard default definition of SEBI is applied.

- **Buy Back**: The regulation provides for an option for buy-back of debt securities at face value. This rules out the option of a premature buy-back of deep discount bonds, as this will affect municipal finances adversely.

- **Creation of Security for Secured Debentures**: The regulation allows unsecured debentures to be listed if they are backed by a state or central government guarantee or have a structured payment mechanism. The guarantee could be extended beyond only the state or central government to a guarantee by financial institutions should also have been included in this. At the same time, the scope for a partial credit guarantee should also have been given.

[44] Source: Public Finance Municipal Bonds – A Must for Better Infrastructure April 2015; https://www.indiaratings.co.in/upload/research/specialReports/2015/4/29/indra29Muni.pdf

- **Continuous Listing Conditions**: Sub regulation 4 deals with movements in rating levels. If a rating is downgraded by two notches or more, the issuer is required to explain reasons for the downgrade and take preventive steps to recover rating and cash flows. Such conditions are not applied on corporate bond issuers. This could potentially be detrimental to a municipal bond issuance.

- **Barriers specific to green bonds**: In addition to these barriers, there are some common challenges that green bonds issuers face, in general, and thus, these form important considerations for new green municipal bonds issuers. For example, while issuing green bonds, there is a need for validation of "green" projects. Transparent and credible certification of the quality and "greenness" of selected projects is needed to ensure no "greenwashing" occurs. Currently, Climate Bonds Standard offers a certification scheme for green bonds, which provides stronger credibility to the green bonds issued. However, it leads to an additional costs to issuers. Green bonds may have some additional transactional costs associated because issuer must track, monitor and report on the use of proceeds. But, on the other hand, these costs are quickly declining and expected to be driven down even more as green bonds scale up, diversification improves the market, and demand for green bonds increases.

Survey Results

The objective of the interviews conducted with municipalities was to understand their perception of the municipalities towards municipal bonds, in general, and green municipal bonds in particular. Out of the total respondents interviewed,

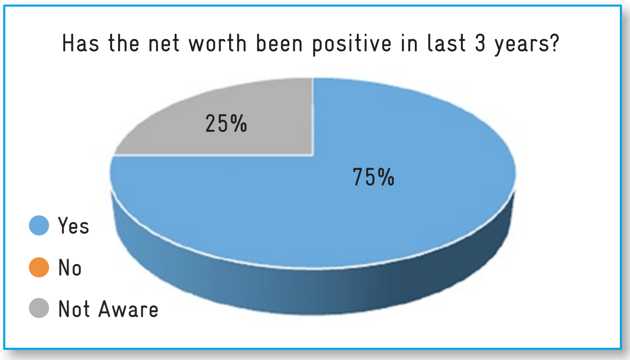
- 88% of the municipalities are involved in the Smart Cities Initiative.

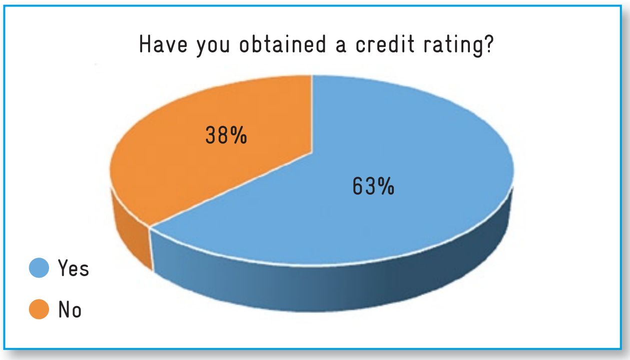
- Nearly 38% of the municipalities had issued a bond in the past.

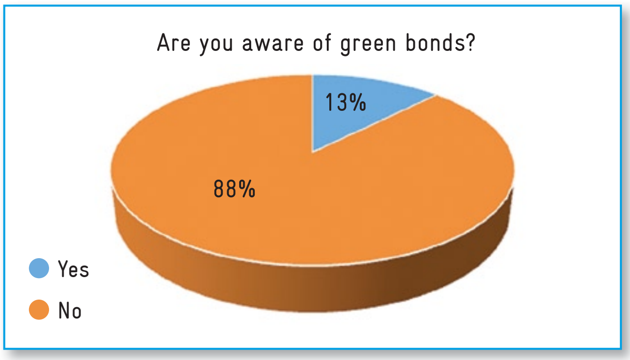
The key findings from the survey are summarized as follows:

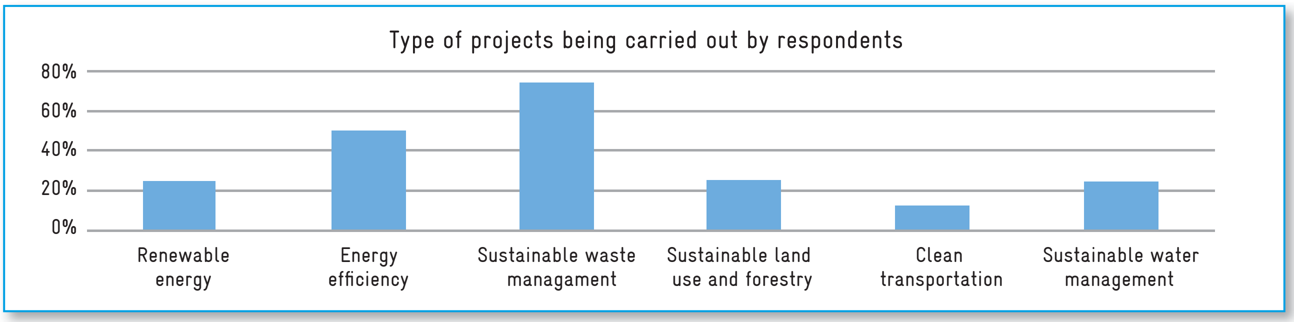
- With regard to the two main pre-conditions set by SEBI for issuing municipal bonds – having a minimum investment grade credit rating in place and a positive net worth in the three years before issuance – the municipalities had a varied response. While only 38% of the interviewed municipalities had obtained a credit rating, 75% of them had maintained a positive net worth in the last three financial years.

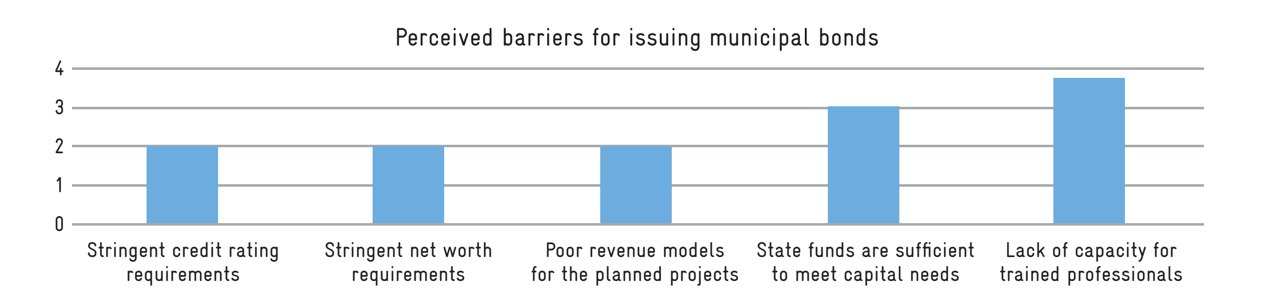
- A positive finding was that majority of the municipalities interviewed were already carrying out various projects in the categories eligible for green bonds. For some municipalities, these projects were already being carried out, while for some, these projects were in the pipeline.

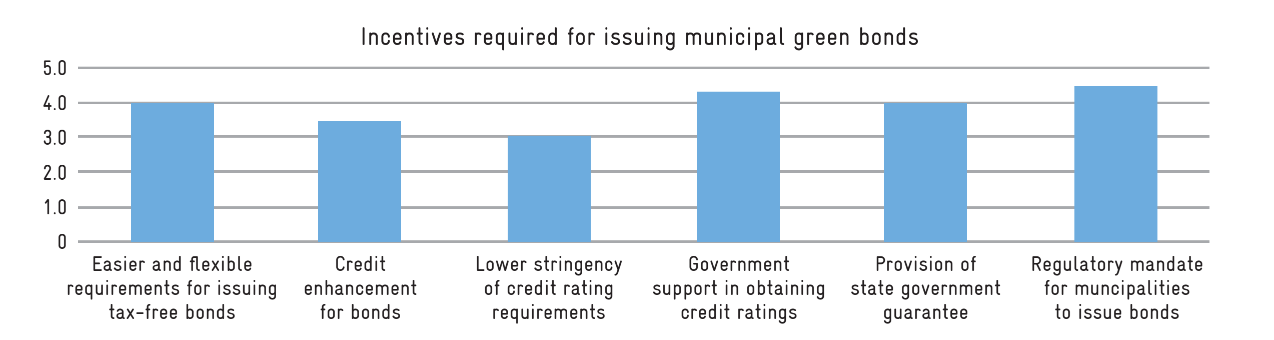












- However, the awareness towards green bonds amongst the respondents was found to be particularly low. This points towards a strong need for awareness creation for green bonds amongst municipalities.

- According to majority of the municipalities interviewed, the key barrier which was perceived to be of highest significance in issuing municipal bonds was lack of in-house capacity or trained professionals for managing bond issuances. Another significant reason stated for not issuing bonds was the abundance of the state funds to meet capital needs, thus, limiting any need for entering the bond market. The perceived barriers were rated on a scale of 1 to 5, with 1 being the least significant barrier and 5 being the most significant barrier, and the results of the exercise are presented above.

- According to majority of the municipalities interviewed, the key incentives which were felt to be significant for issuing municipal green bonds were – regulatory mandates for municipalities to issue green bonds, higher level of support from the government in obtaining credit ratings, and relatively easier and flexible requirements for issuing tax-free municipal bonds, and provision of state government guarantee for the issued bonds. The respondents were asked to rate the incentives required on a scale of 1 to 5, with 1 being the least significant requirement and 5 being the most significant requirement. The results of the exercise are presented above.

4.2 Recommendations

On the basis of our analysis and the survey results, certain areas were identified where suitable external interventions can be put in place to develop a more conducive environment for introduction of municipalities in the green bond market. Some of the potential instruments or avenues of creating this conducive environment are:

Improvement of creditworthiness of municipalities

Prior to the issuance of any debt instrument such as a bond, the issuer is required to obtain a credit rating, as a regulatory requirement, from any of the agencies registered with SEBI. This credit rating is one of the key parameters used by investors in determining whether to subscribe or not to a particular bond issue. While some of the larger municipal corporations have a comparatively good credit rating, this is usually not the case with the smaller municipalities. Further, a number of ULBs in India are yet to switch to a Double Entry Accrual-Based Accounting System from the previous cash basis of accounting that has inherent limitations in presenting the financial status of the ULBs in a more comprehensive and consolidated manner.[45]

Thus, it is quintessential that steps are taken to improve the creditworthiness of Indian municipalities. Strategic interventions are required to shape the accounting and disclosure practices through external technical support, capacity building and responsible

45 ADB South Asia Working Paper Series No. 20; https://www.adb.org/sites/default/files/publication/31149/south-asia-wp-020.pdf

induction for managerial roles. For example, the government had made improvement of financial management systems as one of the mandatory conditions to be fulfilled by ULBs in order to be eligible for funds under the JNNURM.

Another significant step can be further promotion of Pooled Finance Scheme, since the small and medium-sized municipalities, which are not in a position to access bond markets directly, can enter the bond market together to raise finance. Since implementation of the Pooled Finance mechanism requires setting up of a ‘State Pooled Finance Entity’, creation of such a facility in every state should be mandated. Moreover, proper process guidance should be created for the municipalities to strengthen their readiness for issuing bonds through a pooled finance mechanism.

Provision of credit enhancement mechanisms

While there have been instances of the State Government providing guarantees to municipal bond issuances in the past leading to a phenomenal increase in their creditworthiness, this has not been the norm for most bond issuances. Having in place either a guarantee from the central/state government or a structured payment mechanism (issuer deposits money at least 10 working days before due date) for the listing of unsecured bonds is likely to strengthen the municipal bond market.

Another useful instrument could be allowing for partial credit enhancement for municipal bond issuance. In September 2015, the Reserve Bank of India (RBI) introduced a scheme of Partial Credit Enhancement (PCE) to corporate bonds in the form of an irrevocable line of credit which can be drawn in case of shortfall in cash flows, at the time of servicing the bonds. This facility can be provided by banks, and the proposed enhancement facility improves the credit rating of the bond issues. For instance, a BBB rated bond could be elevated to an A or AA category based on the enhancement, making it investment worthy for institutions. The total PCE to be provided by the banks for a given bond issue has been capped at permissible limit of 20 per cent of the total bond issue size[46]. A similar partial credit enhancement scheme designed by Government of India for municipal bonds (including municipal green bonds) can provide a significant boost to the municipal bond market in India.

Improving the bankability of projects and facilitating efficient project management for municipalities

The drawbacks in the traditional institutional framework have led to a severe back log in investments given the inadequacy of government budgetary support. Implementation of projects within this framework has led to poor utilization of resources on account of lack of project development and management skills. This has been compounded by lack of adequate financial management skills[47].

In order to generate investors’ interest in the municipal bonds (or green municipal bonds), the bankability of projects and the managerial ability for cost recovery needs to be demonstrated by the municipal corporation issuing the bond. Thus, steps such as having in place a financial viability certificate for projects or allotment of a separate project implementation cell and focused capacity building at the project design as well as implementation phase for improving techno- administrative capabilities of municipal corporations, are likely to improve the bankability of projects and bring in transparency in the functioning of municipal corporations, thus, improving the investors’ appetite for these bonds.

Improving liquidity in the secondary market

Liquidity in the secondary market is another important aspect considered by investors in determining whether to subscribe to a particular bond issue. Investors are wary of investing in bond issues if they see only small volumes or absence of liquidity in the secondary market. This is a barrier that exists for any new market and hence a political will is important to encourage the ULBs to come out with bond issues. For example, the central government’s push to state-backed companies on issuing rupee-denominated bonds in offshore markets, also called masala bonds, has resulted in kick-starting the market.

Awareness creation for municipal green bonds and regulatory incentives for municipalities to tap debt market

At present, there is generally a lack of awareness about the concept of green bonds amongst municipal corporations in India and there are no separate guidelines for issuance of municipal green bonds. The idea of green municipal bond as a lucrative way of raising finance remains rather unknown to the municipal corporations. Moreover, absence of any particular requisites to issue bonds serve as major impediments for municipalities to issue green bonds. Thus, awareness creation initiatives such as workshops and publication of guidelines for ULBs are important to promote the concept of green municipal bonds.

46 Source: http://www.careratingsmaldives.com/India/Partial_Credit_Enhancement-_A_push_to_Corporate_Bond_Market.pdf
47 Source: http://ficci.in/spdocument/20122/Urban_infra.pdf

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