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Dr. G. Arut Geevitha

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Dr.B. Geethpriya

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Green Bonds in India: Catalyzing Sustainable Development Amidst Challenges

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Abstract

In India, green bonds have become a significant financial instrument, especially after the 2015 Paris Agreement, for financing environmentally sustainable initiatives such as renewable energy, energy efficiency, and climate change mitigation. The green bond market in India was initiated by YES Bank's issuance, followed by other financial institutions and corporations like SBI, Axis Bank, ReNew Power, and NTPC. This study investigates the expansion of India's green bond market, describing various bond types and the entities involved in their issuance. Additionally, the paper examines the role and importance of green bonds in India, as well as assesses the regulatory framework for green bond certification and standards. It also identifies challenges and opportunities of green bond market in India and proposes recommendations to enhance its growth and efficiency.

Keywords : Green Bonds , Sustainable Initiative , Entities , Challenges , Opportunities

Indian Green bond Market

Green bonds have emerged as a crucial financial instrument for sustainable development in India, particularly following the 2015 Paris Agreement (S. Bansal, 2020). Green bonds are similar to conventional bonds as they have a fixed or variable interest rate. These bonds fund various environmental projects, including renewable energy, clean transportation, and biodiversity conservation (S. Tiwari, 2023). India entered the green bonds market in 2015 with the YES Bank issuing the first green bond with a maturity period of 10 years for financing renewable energy projects (Agarwal & Singh, 2018). Since then, several banks and corporates have entered the green bonds market such as the EXIM bank, IDBI Bank, Axis Bank, PNB Housing Finance, ReNew Power, NTPC, IREDA, Greenko, etc. Sovereign green bonds (SGBs) issued by central governments have gained prominence as an unconventional tool to address climate change and meet UN climate goals (Anuradha Yadav et al., 2024).

In India, green bonds are seen as an alternative investment opportunity to equity funds and other corporate bonds, with the potential to fulfill sustainable development goals (S. Bansal, 2020). India, as a rapidly developing economy, has been at the forefront of the global transition towards

sustainable finance, and the growth of the green bond market has been a significant aspect of this journey. The Indian government and financial institutions have recognized the importance of leveraging sustainable finance to promote green growth and address the challenges posed by climate change. (Mahesh et al., 2022)

Objectives of the Study

1. To investigate the expansion of India's green bond market and various types of bond issued in India and the entities involved in their issuance.
2. To examine the role and importance of green bonds in India, as well as assess the regulatory framework for green bond certification and standards.
3. To identify the challenges and opportunities of the green bond market in India and propose recommendations to enhance its growth and efficiency.

Types of Green Bonds

Green bonds come in various forms, each aimed at funding specific types of environmental and sustainable projects. Climate Change Bonds focus on mitigating climate change, often through renewable energy and energy efficiency initiatives. Renewable Energy Bonds finance projects that create or use renewable energy sources, like wind, solar, and hydroelectric power. Energy Efficiency Bonds fund projects that improve energy efficiency, such as building retrofits and equipment upgrades. Social or Sustainable Development Bonds support projects that enhance public welfare, like affordable housing and healthcare. Green Infrastructure Bonds finance the development of infrastructure that protects natural resources, such as urban green spaces and reforestation. Natural Resources Bonds target the conservation and sustainable use of natural resources, like sustainable forestry and clean energy projects. Project-linked Bonds are tied to specific projects, such as building a wind farm or public transportation system, while Asset-linked Bonds are linked to a portfolio of assets, like wind turbines or electric vehicle charging stations. Corporate Green Bonds are issued by companies to finance or refinance their own green projects, such as electric vehicle production. Sovereign Green Bonds are issued by national governments to fund large-scale green initiatives. Finally, Green Bond Funds are investment funds that pool green bonds from various issuers, offering investors exposure to the green bond market without having to purchase individual bonds.

Entities issuing green bonds in India

In India, a wide range of entities across both the public and private sectors have issued

green bonds to fund environmentally sustainable projects, particularly in the renewable energy sector. Government agencies such as Indian Renewable Energy Development Agency (IREDA), National Thermal Power Corporation (NTPC), Indian Railway Finance Corporation (IRFC), Solar Energy Corporation of India (SECI) have been key players, alongside public sector banks like SBI, Yes Bank, and Axis Bank. Private companies, including ReNew Power, Greenko Energy Holdings, Azure Power, Adani Green Energy, and Tata Power, have also actively participated in the green bond market. Additionally, municipal corporations like those in Greater Hyderabad, Indore, and Ghaziabad, along with non-banking financial companies (NBFCs) such as L&T Infrastructure Finance, Rural Electrification Corporation (REC), Power Finance Corporation (PFC) have issued bonds to finance sustainable urban and infrastructure projects. Multilateral institutions, including the International Finance Corporation (IFC) and Asian Development Bank (ADB) also contribute to India's green bond ecosystem. Collectively, these entities are helping to drive India's transition to a more sustainable and low-carbon economy.

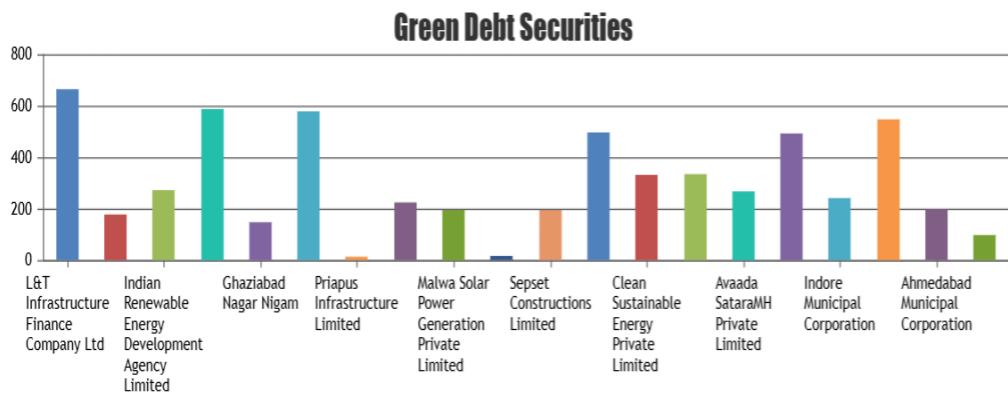
These entities have issued green bonds to finance various environmentally sustainable projects, particularly in the renewable energy sector. The bonds are typically used to fund solar, wind, and other clean energy projects, as well as energy efficiency initiatives and sustainable infrastructure development.

Table 1 - Green bond Issuances in India by type of issuer (as on 06/03/2024)

Issuer	Amount Raised (In Rs. Crs)
L&T Infrastructure Finance Company Ltd	667
Tata Cleantech Capital Limited	180
Indian Renewable Energy Development Agency Limited 03/01/2019	275
Indian Renewable Energy Development Agency Limited 17/01/2019	590
Ghaziabad Nagar Nigam	150
Yarrow Infrastructure Private Limited	581
Priapus Infrastructure Limited	16
Rattan India Solar 2 Private Limited	227
Malwa Solar Power Generation Private Limited	197
Citra Real Estate Limited	19

Sepset Constructions Limited	197
Avaada Solarise Energy Private Limited	499
Clean Sustainable Energy Private Limited	334
Fermi Solarfarms Private Limited	337
Avaada SataraMH Private Limited	270
Vikas Telecom Private Limited	495
Indore Municipal Corporation	244
Minspace Business Parks Reit	550
Ahmedabad Municipal Corporation	200
Vadodara Municipal Corporation	100

Green Bonds Issuances (as on 06/03/2024)



Source: sebi.gov.in

Figure 1: Green bond Issuances in India by type of issuer

Role and Importance of Green Bond in India

Green bonds play a significant role in India's efforts to achieve its Sustainable Development Goals (SDGs), particularly concerning affordable and clean energy (SDG 7) and climate action (SDG 13). They are instrumental in directing capital towards eco-friendly projects and encouraging responsible banking and investments, crucial for addressing environmental challenges and mitigating climate change. The State Bank of India (SBI) has adopted more green initiatives and invested more in green projects compared to its counterpart in Bangladesh, demonstrating India's commitment to green finance (Rahman et al., 2023).

Green Bond Certification and Standards in India

Green bond certification and standards in India are crucial for ensuring the credibility and environmental impact of green bonds in the country's financial market. Key aspects of green bond certification and standards in India include:

1. Securities and Exchange Board of India (SEBI) Guidelines: SEBI introduced green bond guidelines in 2017, providing a framework for issuing and listing green bonds in India.
2. Alignment with International Standards: Indian green bonds often adhere to international standards such as the Green Bond Principles (GBP) and Climate Bonds Initiative (CBI) Standards.
3. Eligible Project Categories: SEBI guidelines define eligible green project categories, including renewable energy, clean transportation, sustainable water management, and energy efficiency.
4. Disclosure Requirements: Issuers must disclose the use of proceeds, project evaluation and selection process, management of proceeds, and reporting in their offer documents.
5. Ongoing Reporting: Issuers are required to provide annual reports on the allocation of proceeds and the environmental impact of funded projects.
6. Climate Bonds Certification: Some Indian issuers seek Climate Bonds Certification for their green bonds, adhering to sector-specific criteria set by the CBI.
7. Green Bond Framework: Issuers often develop a Green Bond Framework outlining their approach to project selection, management of proceeds, and reporting.
8. Taxonomy Development: India is working on developing a national green taxonomy to provide clarity on environmentally sustainable activities.
9. Regulatory Support: The Reserve Bank of India (RBI) and other regulatory bodies are increasingly supporting the development of the green bond market through various initiatives.

Challenges and Opportunities of Indian Green Bond Market

The Indian green bond market shows significant growth potential, but faces challenges such as high transaction costs, greenwashing concerns, and lack of awareness (Abhilash et al., 2023). Moreover, challenges like Lack of a standardized taxonomy and clear guidelines for what constitutes a "green" bond exits. This ambiguity has led to concerns about greenwashing, where bonds are labeled as green without meeting strict environmental criteria. Another obstacle is the limited awareness and understanding of green bonds among investors and issuers. Despite challenges like currency hedging costs and low sovereign ratings (S. Bansal, 2020), green bonds offer investors an opportunity to generate fixed income while supporting environmental protection

(S. Tiwari, 2023).

To address these issues and further develop the green bond market, stakeholders could consider:

- Educate market participants on the benefits and mechanics of green bonds could help drive greater participation and liquidity in the market.
- Developing and implementing standardized guidelines for green bond issuance and reporting.
- Enhancing transparency and disclosure requirements to mitigate greenwashing concerns
- Promoting collaboration between public and private sectors to increase market liquidity and diversity of offerings
- Moreover, the relatively higher costs associated with green bond issuance, such as the need for external verification and certification, can deter potential issuers. Providing financial incentives, such as tax benefits or credit enhancement schemes, could help offset these additional expenses and make green bonds more attractive to issuers (Ning et al., 2022).

Conclusion

The green bond market in India has witnessed substantial growth since its inception in 2015, emerging as a crucial instrument for funding eco-friendly and sustainable initiatives. . Green bonds, backed by both the public and private sectors, are integral to India's strategy for meeting its climate change mitigation goals and advancing sustainable development. While challenges such as high transaction costs, greenwashing, and regulatory ambiguities exist, the market offers significant potential for further growth. Developing standardized guidelines, enhancing transparency, and fostering public-private collaboration can help address these challenges. Moreover, providing financial incentives for issuers could make green bonds a more attractive investment option, thus accelerating India's transition to a low-carbon economy. Green bonds play a crucial role not only in financing projects that contribute to India's SDGs but also in positioning India as a leader in global green finance.

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