INDIA'S GREEN BOND MARKET

Abstract

India's green bond market is emerging as a powerful tool for financing the country's transition to a low-carbon economy. Since its debut in 2015, the market has grown rapidly, driven by ambitious climate goals, supportive policies, and rising investor interest in sustainable finance. Sovereign green bonds issued by the Government of India, alongside corporate and municipal issuances, have helped fund renewable energy, clean transportation, and climate-resilient infrastructure. With cumulative green debt volumes reaching USD 55.9 billion by 2024, India is positioning itself as a global leader in sustainable finance. However, challenges like greenwashing risks, limited project pipelines, and regulatory clarity remain. This article explores the evolution, structure, key players, and future outlook of India's green bond market, offering insights into how financial innovation is fuelling environmental transformation.

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Green Bond

A **green bond** is a type of fixed-income financial instrument specifically designed to fund projects that have positive environmental or climate benefits. Like traditional bonds, they offer returns to investors through interest payments and principal repayment, but the proceeds are earmarked exclusively for **green projects** such as:

- Renewable energy infrastructure
- Energy efficiency upgrades
- Clean transportation systems
- Sustainable agriculture and forestry
- Pollution control and waste management
- Green buildings and water conservation2

These bonds are governed by frameworks like the **Green Bond Principles** by International Capital Market Association (ICMA), which ensure transparency, accountability, and environmental integrity.

Green Bonds: Global & Indian Context

Green bonds were born out of necessity. As climate change intensified with rising sea levels, extreme weather events, and mounting carbon emissions governments and institutions realized that traditional funding mechanisms weren't enough to finance the transition to a low carbon economy.

- **2007**: The European Investment Bank (EIB) issued the world's first green bond, called a "Climate Awareness Bond," to fund renewable energy and energy efficiency projects.
- **2008–2013**: The World Bank and IFC followed suit, creating standardized frameworks and attracting institutional investors.
- **2015–2020**: The Paris Agreement accelerated global interest. Countries began integrating green bonds into national climate strategies.
- **2021–2025**: Green bonds became mainstream, with over USD 2 trillion issued globally by 2025.

The idea was simple but powerful to redirect capital toward projects that mitigate climate risks and promote sustainability.

Global Trading and Market Growth

Green bonds are traded globally across major financial markets, with issuers ranging from governments and municipalities to corporations and multilateral institutions. Here's how the market operates:

- **Issuance**: Entities issue green bonds through public offerings or private placements. These are listed on exchanges like the London Stock Exchange, Luxembourg Green Exchange, and others.
- **Verification**: Third-party verifiers assess whether the bond meets green criteria to prevent "greenwashing."
- **Investment**: Institutional investors (like pension funds and ESG-focused portfolios) dominate the market, but retail investors are increasingly participating.
- **Returns**: Green bonds offer competitive returns, often with **tax incentives** or subsidies to attract investment.

As of 2025, over **50 countries** have issued green bonds, with the **United States, China, and the European Union** leading the charge. The global green bond issuance surpassed **$350 billion in 2020** and continues to grow rapidly.

India's Entry: A Climate-Conscious Leap

India's green bond journey began in **2015**, when **Yes Bank** issued the country's first green bond worth ₹1,000 crore to fund renewable energy. This was followed by Exim Bank and other institutions, signalling India's intent to align finance with climate goals.

Why did India embrace green bonds?

- **Climate Vulnerability**: India faces frequent floods, droughts, and cyclones. The 2018 Kerala floods and Cyclone Amphan in 2020 caused billions in damage.
- **Energy Transition**: With a target of 450 GW renewable energy capacity by 2030, India needed massive capital infusion.
- **Sustainable Development Goals (SDGs)**: Green bonds offered a way to fund clean water, transport, and energy projects while meeting global commitments.

India's green bond market is now one of the fastest growing in Asia, with sovereign issuances, corporate participation and municipal interest all converging to build a greener future.

How Green Bonds Are Traded in India

1. Sovereign Green Bonds (SGrBs)

Introduced by the Government of India in **January 2023**, these are issued by the **Reserve Bank of India (RBI)** on behalf of the central government.

- **Trading Platforms**:
  - Listed on major stock exchanges like **NSE** and **BSE**
  - Available to retail investors via **RBI's Retail Direct platform**
- **Structure**:
  - Fixed coupon payments
  - Tenure typically ranges from 5 to 10 years
  - Funds are earmarked for projects like renewable energy, clean transport, and sustainable water management
- **Investor Base**:
  - Open to domestic and foreign investors
  - Backed by sovereign guarantee, making them low-risk instruments

2. Corporate Green Bonds

Private companies and public sector enterprises issue green bonds to fund ESG-aligned projects.

- **Trading Mechanism**:
  - Listed and traded on Indian stock exchanges
  - Governed by **SEBI's Green Bond Guidelines (2017)** and updated frameworks aligned with ICMA principles
- **Verification & Reporting**:
  - Issuers must disclose environmental objectives and impact metrics
  - Third-party certification is often used to validate "green" credentials
- **Market Share**:
  - As of early 2023, **84% of India's green bond issuance** came from corporates, with sectors like renewable energy, energy efficiency, and green buildings leading the way

3. Liquidity and Pricing Trends

- India's green bond market is still maturing, with **lower liquidity** compared to traditional bonds
- The concept of **"greenium"** (price premium for green bonds) is evolving. Indian investors often expect **higher yields** rather than paying a premium for sustainability

4. Regulatory and Strategic Push

- The government's **Sovereign Green Bond**

Framework (2023) and SEBI's guidelines aim to standardize taxonomy and improve investor confidence

- Foreign investment is encouraged, expanding the pool of capital and improving market depth

India's Green Bond Market – Financing the Future

1. Introduction: Why Green Bonds Matter

India's climate ambitions include achieving net-zero emissions by 2070 and reducing emissions intensity by 45% by 2030. But ambition needs capital. Green bonds, a financial instrument designed to fund projects with environmental benefits. These bonds are similar to traditional debt securities but come with a green twist, the proceeds are earmarked for sustainable initiatives like solar parks, metro rail systems, and climate-resilient infrastructure.

Green bonds offer a win-win scenario, investors get returns and the planet gets cleaner air, water and energy. For India, they're not just a financial innovation, they are a necessity.

2. Market Evolution: From First Steps to Global Recognition

The green bond market in India has grown exponentially since its debut in 2015.

- By 2024, India's cumulative green debt volume reached USD 55.9 billion.
- In January 2023, the Government of India issued its first sovereign green bonds worth INR 80 billion, followed by additional tranches in 2024 and 2025.
- Municipal bodies like Pune and Indore have explored green bonds to fund urban climate projects.

This growth reflects rising investor confidence and India's commitment to climate finance.

3. Structure and Types of Green Bonds

India's green bond market includes various issuers and instruments:

Type of Issuer	Examples	Purpose
Sovereign (Govt of India)	RBI-issued green bonds	Renewable energy, clean transport
Corporate	Yes Bank, ReNew Power, NTPC	Solar, wind, energy efficiency
Municipal	Pune Municipal Corporation	Waste management, water conservation
Development Banks	IREDA, NABARD	Rural electrification, climate adaptation

Green bonds are typically structured as:

- **Use-of-Proceeds Bonds**: Funds go to specific green projects.
- **Sustainability-Linked Bonds (SLBs)**: Tied to ESG performance targets.
- **Green Loans**: Similar to bonds but issued as loans.

4. Real-Life Examples: Impact in Action

Let's look at how green bonds are making a difference:

ReNew Power

India's largest renewable energy company issued USD 325 million in green bonds to finance wind and solar projects. These helped avoid over 1 million tonnes of CO_2 emissions annually.

NTPC

The state-owned power giant raised USD 300 million through green bonds to fund solar energy projects in Rajasthan and Gujarat.

Sovereign Green Bonds

In 2023, India's sovereign green bonds funded projects like:

- Solar rooftop installations in government buildings
- Electric vehicle charging infrastructure
- Afforestation and biodiversity conservation

These examples show how green bonds are translating policy into tangible progress.

5. Regulatory Framework: Building Trust

India's green bond market is governed by a mix of domestic and international standards:

- **SEBI's ESG Debt Framework (2023)**: Mandates disclosures on use of proceeds, impact metrics, and third-party verification.
- **Climate Finance Taxonomy (Upcoming)**: Ministry of Finance is developing a taxonomy to define what qualifies as "green."

- **Green Steel Taxonomy**: Ministry of Steel introduced guidelines to promote low-carbon steel production.

These frameworks aim to reduce "greenwashing" and build investor trust.

6. Investor Landscape: Who's Buying?

India's green bonds attract a diverse set of investors:

Investor Type	Motivation
Institutional Investors	ESG mandates, long-term returns
Retail Investors	RBI's Retail Direct platform
Foreign Investors	Climate-aligned portfolios
Development Institutions	Climate finance commitments

The "greenium", a price premium for green bonds, is evolving. In India, investors are increasingly demanding competitive yields rather than paying a premium for sustainability.

7. Challenges: What's Holding Us Back?

Despite impressive growth, India's green bond market faces hurdles:

- **Greenwashing Risks**: Lack of clear definitions can lead to misuse of funds.
- **Limited Project Pipeline**: Not enough credible green projects to absorb capital.
- **Reporting Gaps**: Inconsistent impact reporting reduces transparency.
- **High Borrowing Costs**: Green bonds often carry higher issuance costs.
- **Investor Awareness**: Many retail investors remain unaware of green bond benefits.

Addressing these challenges is key to unlocking the market's full potential.

8. Opportunities: What's Next?

India's green bond market is ripe for expansion. Here's how:

Policy Interventions

- Introduce tax incentives for green bond investors.
- Standardize definitions and eligibility criteria.
- Promote municipal green bonds for urban climate action.

Corporate Participation

- Encourage ESG disclosures and sustainability-linked financing.
- Build capacity for impact measurement and reporting.

Global Integration

- Align with international standards like the Climate Bonds Standard.
- Attract foreign capital through robust governance frameworks.

India needs an estimated USD 12.7 trillion to reach net-zero by 2050. Green bonds can be a major lever in mobilizing this capital.

9. Future Outlook: Bigger, Better, Greener

The future of India's green bond market looks promising:

- Forecasts suggest continued double-digit growth through 2031.
- More banks and NBFCs are entering the space with green financing products.
- India's leadership in G20 and COP summits is boosting global visibility.

With the right mix of policy, innovation, and investor engagement, India could become a global hub for sustainable finance.

Why It Matters

Green bonds are more than financial tools they're a signal of commitment to sustainability. They help align capital markets with climate goals, offering investors a way to support environmental change while earning returns.

"Green bonds are revolutionizing how companies and governments fund climate action combining ethics with economics." MA

References

1. *Case Studies: ICLEI South Asia*
2. *Climate Bonds – India Sustainable Debt State of the Market Report 2024*
3. *Accrona Case Study – India's Green Bonds*
4. *IJARIIE – Growth and Challenges of Green Bonds in India*
5. *TERI Policy Brief – Accelerating the Growth of Green Bonds in India*
6. *Grip Invest – Sovereign Green Bonds in India 2025*
7. *6Wresearch – India Green Bonds Market Outlook 2025–2031*