



Asian Journal of Management and Commerce

E-ISSN: 2708-4523

P-ISSN: 2708-4515

Impact Factor (RJIF): 5.61

AJMC 2025; 6(2): 1350-1353

© 2025 AJMC

www.allcommercejournal.com

Received: 10-08-2025

Accepted: 15-09-2025

Dr. K Lakshmana Rao

Lecturer, Department of
Commerce, Pithapur Rajah's
Government College(A)
Kakinada, Andhra Pradesh,
India

Green bonds and sustainable finance in India: Pricing, additionality and project outcomes

K Lakshmana Rao

DOI: <https://www.doi.org/10.22271/27084515.2025.v6.i2o.860>

Abstract

Green bonds are intended to channel capital to projects with environmental benefits, but doubts persist about whether labelled green debt finances genuinely incremental green investments or merely refinances pre-existing (brown) assets. This paper studies the Indian green bond market's pricing dynamics (the "greenium"), regulatory framework, and evidence on additionality and project outcomes. Using official issuance data (Climate Bonds Initiative), Indian regulatory texts (SEBI, Department of Economic Affairs), and empirical literature on green bond pricing and additionality, we ask whether labelled issues in India and internationally fund net new green projects. Our findings suggest mixed evidence: recent sovereign and corporate green issuance in India expanded the sustainable debt market substantially, but marketplace signals (mixed greenium, some auction devolvments) and the literature indicate that additionality varies by issuer type, third-party review quality, and the project pipeline. We propose tightened disclosure, standardized impact reporting, stronger third-party reviewer rules, and incentives for true incremental project financing.

Keywords: Green bonds, greenium, additionality, India, SEBI, Climate Bonds Initiative, sustainable finance, refinancing

1. Introduction

Green bonds - debt instruments whose use of proceeds is dedicated to environmentally beneficial projects - have grown quickly worldwide and in India. India's sustainable debt stock (green, social, sustainability, and sustainability-linked, or GSS+) reached about USD 55.9 billion by end-2024, with green bonds accounting for the lion's share of aligned issuance. Regulatory steps in India (SEBI's disclosure circular for green debt securities) and government sovereign green bond frameworks have helped scale issuance and improve reporting expectations. Despite this growth, two core policy and academic questions remain: (1) do labelled green bonds command a pricing advantage (a "greenium") at issuance or in secondary trading, and (2) do green bond proceeds finance truly incremental green projects (additionality), or do they largely refinance existing (brown) assets or repackage ordinary financing under a green label? This paper assesses evidence on both questions with an India focus and offers policy suggestions.

2. Objectives

1. Quantify recent trends in India's green bond market (issuer types, volumes) using official/credible market data.
2. Evaluate pricing evidence for a greenium in Indian and international contexts and factors affecting pricing (external reviews, issuer credibility).
3. Assess additionality and project outcomes: whether proceeds fund incremental green projects versus refinancing brown assets, using literature and disclosure evidence.
4. Provide actionable policy and market recommendations to strengthen additionality and impact reporting for India's green debt market.

3. Literature review

1. **Climate Bonds Initiative (India Sustainable Debt State of the Market, 2024):** Presents India's sustainable debt market metrics up to end-2024: cumulative aligned GSS+ issuance USD 55.9bn, with green debt dominant. Documents issuer composition (sovereign, corporates, financials, municipals) and sectoral flows (clean energy,

Corresponding Author:

Dr. K Lakshmana Rao

Lecturer, Department of
Commerce, Pithapur Rajah's
Government College(A)
Kakinada, Andhra Pradesh,
India

transport). Useful for market sizing and sector allocation in India.

2. **SEBI - Revised Disclosure Requirements for Issuance and Listing of Green Debt Securities (Circular, Feb 6, 2023):** Sets mandatory disclosure items for green debt issuers, requiring use-of-proceeds reporting and post-issuance annual reporting. Forms the regulatory backbone for labelled green debt in India and informs market transparency expectations.

3. **Department of Economic Affairs (Framework for Sovereign Green Bonds, India):** Outlines India’s sovereign green bond framework requirements for eligible projects, reporting, and allocation tracking - important for evaluating sovereign issuance’s potential additionality and governance.

4. **Lam, Pauline - Green Bonds: New Label, Same Projects (NBER working paper, 2024):** Empirical investigation showing that in many cases labelled green bonds finance projects that would have been financed anyway or are among issuer’s usual spending, raising additionality concerns. Highlights need for better attribution and project-level evidence.

5. **Tuhkanen, H., & Vulturius, G. Are green bonds funding the transition? (Journal of Sustainable Finance & Investment, 2020):** Examines whether corporate green bonds align with issuers’ climate targets; finds mixed evidence on the bonds leading to stronger climate action, stressing the role of issuer commitment and credible external review for actual transition finance.

6. **Pietsch, A.- Pricing of green bonds: drivers and dynamics of the greenium (ECB/working paper style, 2022):** Demonstrates that credible certification/third-party review and issuer reputation are key drivers of observed green pricing premia. Evidence suggests the greenium is heterogeneous across markets and periods.

7. **Caramichael, The Green Corporate Bond Issuance Premium (Federal Reserve IFDP, 2022):** Using global data, identifies issuance-level pricing differences for green bonds, with premiums depending on rating, issuer, and the presence of external verification; calls for careful interpretation of greenium magnitude.

8. **Research: Great Expectations: Credibility and Additionality of Green Bonds (2019):** Study across

many issuers/projects finds evidence of both credible additional financing and instances of label-driven reclassification; calls for standardized reporting to assess additionality.

9. **Bracking, S. Turning investments green in bond markets (2023, academic journal):** Explores how green labels interact with transition and sustainability-linked instruments, and the risk that lower-bar instruments capture the green market without delivering additional environmental outcomes. Highlights policy action for credibility.

10. **BIS / Demski et, Growth of the green bond market and greenhouse gas outcomes (BIS Quarterly/2025):** Links development of the green bond market to national mitigation policies; finds that green bond growth is strongest where emissions targets and public policy support exist - suggesting demand and additionality are policy dependent.

4. Research methodology

Mixed-methods approach:

1. **Desk data & official sources (quantitative):** compile issuance volumes, issuer breakdowns, and auction outcomes from Climate Bonds Initiative reports (India state of market 2024/2025), SEBI circulars, DEA sovereign bond framework, and market news (e.g., Reuters coverage of RBI green bond auctions). These provide the primary quantitative backbone for Indian market trends.

2. **Literature synthesis (qualitative):** systematic review of peer-reviewed studies and working papers on pricing (greenium), third-party reviews, and additionality (papers cited above) to identify common empirical findings and open questions.

3. **Project-level disclosure review (case evidence):** examine selected issuance-level post-issuance reports (where available) to assess whether proceeds allocate to new projects or refinance - guided by SEBI/DEA reporting templates. (SEBI requires post-issuance reporting; DEA provides sovereign templates.)

4. **Synthesis & policy recommendations:** integrate findings to evaluate additionality and pricing patterns, then propose market/regulatory improvements.

5. Data analysis (selected quantitative evidence)

Table 1: Selected India sustainable debt market figures (aligned issuance, end-2024)

Metric	Value / Note	Source
Cumulative India GSS+ (aligned issuance (to Dec 2024)	USD 55.9 billion	Climate Bonds Initiative (India State of Market, 2024).
Share of green debt in aligned issuance	83% of aligned issuance	Climate Bonds.
Major issuer categories (2024)	Sovereign, corporates, financials, municipal	Climate Bonds; sovereign issuance notable during 2024.
Recent sovereign/gov auctions outcome (example)	RBI devolved large share of a 10-yr green bond auction (indicating demand/yield tensions)	Reuters reporting on RBI green bond auction devolvement (Nov 2024).

Interpretation

India’s market has rapidly scaled but remains sensitive to yield expectations; sovereign issuance expanded the benchmark and investor interest, yet some auctions showed weak demand or devolvement’s, signalling pricing pressures and market depth issues.

6. Findings & discussion

6.1 Pricing: Is there a greenium in India?

International literature finds heterogeneous evidence: some markets/periods show a measurable greenium (lower yield for green bonds), especially when external verification and issuer reputation are strong; other studies find negligible or transient premia. In India, evidence is mixed: sovereign

green issuance has sometimes priced closely to conventional government paper, while certain corporate green bonds have shown modest pricing concession where strong external reviews and transparency exist. Auction evidence (RBI devolvement episodes) suggests investor demand and yield expectations can outweigh any greenium, especially where macro yields rise or liquidity is constrained. Overall, greenium magnitude is context-specific and depends on market liquidity, investor base, and credibility mechanisms.

6.2 Additionality and project outcomes

Cross-country research (Lam *et al.*, Tuhkanen & Vulturous, “Great Expectations”) indicates that labelled green debt sometimes finances projects that would have proceeded regardless (low additionality) or refinances existing assets. The drivers of positive additionality include: (a) strict use-of-proceeds definitions, (b) robust ex-ante evaluation showing the project is incremental to business-as-usual, (c) transparent post-issuance reporting, and (d) credible independent third-party reviews. In India, disclosure requirements (SEBI) and sovereign frameworks improve transparency, but public reporting is uneven at the project level, making systematic additionality assessment difficult. Some municipal green bond cases (e.g., large subscription for pioneering municipal issuances) indicate new projects funded, but corporate practice varies.

6.3 Mechanisms leading to refinancing / label risk

Common mechanisms observed in the literature and market reviews that can lead to refinancing of brown assets include: (1) broad eligible categories allowing retrofits or refinancing, (2) “post-issuance” classification without strong ex-ante evidence, and (3) weak independence or conflict-of-interest among reviewers. These risks mean green labels alone do not guarantee additionality; governance, reviewer independence, and allocation transparency are decisive.

7. Policy recommendations & market suggestions (actionable)

- 1. Harmonize and tighten eligibility and reporting standards:** Enhance SEBI’s disclosure rules to require standardized project-level templates (baseline, counterfactual, expected emissions reductions, clear start dates) and require separate reporting for refinancing vs new capex. This helps assess additionality quantitatively.
- 2. Strengthen third-party reviewer rules and independence:** Mandate reviewer disclosure of conflicts of interest, methodologies, and on-going monitoring responsibilities. Align reviewer standards with international best practice (e.g., CBI), and consider registration/accreditation for reviewers. Evidence shows credible review increases pricing and investor trust.
- 3. Require an “additionality statement” and counterfactual:** Issuers should include an explicit statement comparing project funding to a counterfactual (what would have happened without the green bond). If proceeds refinance existing assets, require full disclosure and rationale, preventing greenwashing.
- 4. Encourage blended finance/incentives for truly incremental projects:** Public credit enhancement, concessional finance, or partial risk guarantees can

improve bankability of incremental green projects (especially in adaptation and municipal infrastructure), reducing incentive to refinance brown assets.

- 5. Create a central registry for green bond reporting:** A searchable registry (issuer, use of proceeds, project start dates, post-issuance reports) maintained by a regulator or neutral body (e.g., Climate Bonds / SEBI collaboration) would improve transparency and allow third-party researchers to evaluate additionality at scale.
- 6. Investor engagement & stewardship:** Encourage institutional investors to demand detailed ex-ante and ex-post impact metrics and to exercise stewardship when projects don’t show additionality. This will strengthen market discipline.

8. Conclusion

India’s green bond market has scaled rapidly and plays a critical role in mobilizing capital for climate objectives. Official frameworks (SEBI, DEA) and market initiatives (sovereign green issuance) have improved transparency and created market benchmarks. Nevertheless, both the international literature and Indian market signals point to mixed additionality: some green bond proceeds support genuinely incremental green projects, while in other cases bonds appear to refinance pre-existing assets or represent reclassification under a green label. Pricing evidence (greenium) is heterogeneous and depends on credibility measures such as external review and issuer reputation. To ensure green debt delivers real environmental outcomes, policy action should focus on standardized project-level reporting, strengthened reviewer independence, an additionality requirement (counterfactual disclosure), and targeted incentives for incremental projects. These steps will reduce label risk, enhance investor confidence, and improve the likelihood that green bonds fund the transition rather than simply refinance brown assets.

References

1. Caramichael J, *et al.* The green corporate bond issuance premium. Federal Reserve IFDP. 2022. Available from: <https://www.federalreserve.gov/econres/ifdp/files/ifdp1346.pdf>
2. Climate Bonds Initiative. India sustainable debt state of the market report 2024. Climate Bonds Initiative; 2025. Available from: <https://www.climatebonds.net/data-insights/publications/india-sustainable-debt-state-market-2024>
3. Demski J, *et al.* Growth of the green bond market and greenhouse gas outcomes. BIS Q Rev / Research. Bank for International Settlements; 2025.
4. Lam P, *et al.* Green bonds: new label, same projects. NBER Working Paper. National Bureau of Economic Research; 2024.
5. Pietsch A. Pricing of green bonds: drivers and dynamics of the greenium. Eur Cent Bank Working Paper. IDEAS/RePEc; 2022.
6. Tuhkanen H, Vulturius G. Are green bonds funding the transition? Investigating the link between companies' climate targets and green debt financing. J Sustain Finance Invest. 2020. DOI: 10.1080/20430795.2020.1857634
7. Great expectations: credibility and additionality of green bonds. ResearchGate; 2019. Available from: https://www.researchgate.net/publication/Great_Expect

- ations_Credibility_and_Additionality_of_Green_Bonds
8. Securities and Exchange Board of India (SEBI). Revised disclosure requirements for issuance and listing of green debt securities (Circular No. SEBI/HO/DDHS/DDHS-RACPOD1/P/CIR/2023/023). 2023 Feb 6. Available from:
https://www.sebi.gov.in/legal/circulars/feb-2023/revised-disclosure-requirements-for-issuance-and-listing-of-green-debt-securities_67837.html
 9. Department of Economic Affairs (DEA), Government of India. Framework for sovereign green bonds. 2022. Available from:
https://dea.gov.in/files/policy_and_guidelines_document/FrameworkSovereignGreenBonds.pdf
 10. Reuters. India central bank devolves 70% of new green bonds; cutoff below 10-yr note. Reuters. 2024 Nov.
 11. Bracking S. Turning investments green in bond markets. Area. 2023.