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GREEN BONDS: A GENUINE PATH TO SUSTAINABILITY OR A CLEVER MARKETING STRATEGY?

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Abstract

Green bonds are gaining popularity as a way to raise funds for environmental projects—like building solar plants or protecting against climate risks. They're seen as a win-win: good for the planet and appealing to investors. But as more companies and governments issue green bonds, questions have started to surface. Are these bonds truly driving sustainability, or are they just being used as a marketing tool?

This paper explores both sides of that question. By looking at real examples from India, the Netherlands, and the World Bank, and using reports from groups like IFC, SEBI, and the Climate Bonds Initiative, we examine how green bonds are being used in practice—and where they fall short. We also study new regulatory efforts and innovative instruments like transition bonds and sustainability-linked bonds.

Our findings suggest that while green bonds can lead to meaningful change, they're not always used as intended. Without strong rules, transparency, and accountability, they risk becoming more about image than impact. If done right, though, they can still be one of the most powerful tools in the fight against climate change.

Keywords: *Green bonds; Sustainable finance; ESG; Renewable energy; Climate change mitigation; Impact investing*

METHODOLOGY

This study adopts a qualitative, descriptive research approach, relying on secondary data sources to analyze the role of green bonds in promoting sustainability. Data was collected from official reports, government publications, World Bank databases, and peer-reviewed journal articles.

Case studies from India, the Netherlands, and the World Bank were selected to represent diverse geographical and institutional contexts.

The analysis focused on the allocation of proceeds, policy incentives, and reported environmental outcomes, as well as their alignment with ESG objectives.

INTRODUCTION TO GREEN BONDS

In today's world, where environmental concerns can no longer be viewed as distant problems, it has become essential that business and finance step forward as part of the solution. Green bonds represent a quiet but meaningful shift in how we approach investment and development—with purpose at the core.

Unlike traditional bonds that finances different business activities, green bonds are specifically intended to support projects with environmental benefits—such as renewable energy, clean transportation, and infrastructure that can withstand climate challenges.

Their growing popularity is a sign of changing priorities. However, with this rise comes the responsibility of ensuring that these instruments are used sincerely. Green should not be reduced to a label; it must reflect action and impact.

This paper explores the role green bonds can play in building a more sustainable future, while also examining the risks—such as greenwashing—that could undermine their credibility. At its heart, this is about whether we can create a financial system that doesn't just measure returns, but values outcomes for people and the planet.

UNDERSTANDING GREEN BONDS

2.1 What are Green Bonds?

In recent years, the term "green bonds" has gained significant traction in discussions around Sustainable Finance. Green Bonds are fixed-income instruments with proceeds earmarked exclusively for projects with a positive environmental impact (International Finance Corporation, 2023). What distinguishes green bonds from conventional bonds is their commitment towards low-carbon and environmentally sustainable projects. To govern this aspect, regulatory bodies have introduced a dedicated framework–Green Bond Principles (GBP). The GBP outlines four core components that guide the issuance and

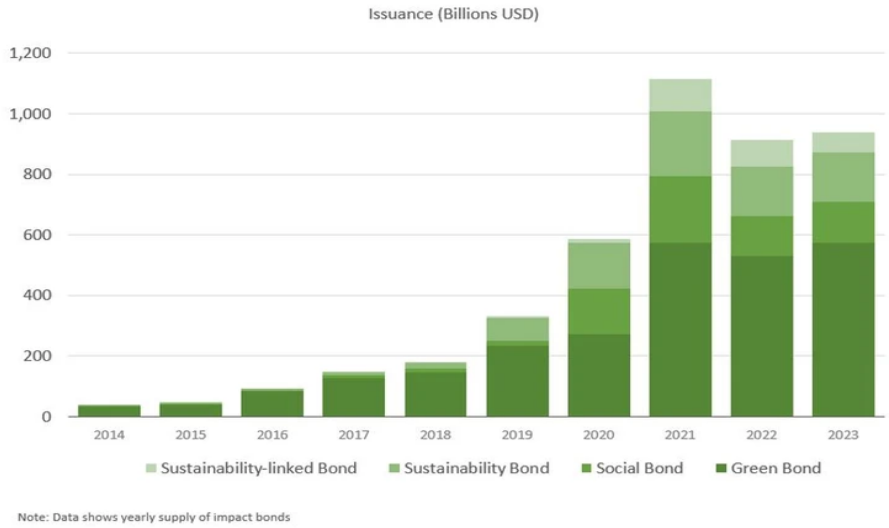
credibility of green bonds:
(1) Use of proceeds
(2) Process for Project Evaluation and Selection
(3) Management of Proceeds
(4) Reporting
These components ensure whether the proceeds are being allocated to credible green projects, selected through a legitimate evaluation and selection process, and that they are managed and reported on in a transparent and consistent manner.
Comparison with Conventional Bonds
Green bonds are identical to non-green bonds, except that the proceeds are used for "green" projects, that is for projects with an environmental focus (Ma, Cong et al., 2020). In simpler terms, green bonds cater to green practices or sustainability-linked projects, whereas traditional bonds are intended to support general objectives. Moreover, green bonds are subject to more stringent reporting and disclosure norms to maintain transparency–an aspect not typically demanded of traditional bonds.

2.2 Types of Green Bonds
At present, there are four types of green bonds:
(1) Standard green use-of-proceeds bonds: These bonds are backed by the whole balance sheet of the issuer. The proceeds from this bond are *exclusively* used for green projects.
(2) Green revenue bonds: In contrast, these types of bonds are not backed by the whole balance of the issuer, but the repayment comes from the revenue of that project only.
(3) Green project bonds: These bonds are not at all backed by the company or government, instead these are solely backed by the project itself.
(4) Securitized green bonds (asset-backed security): When a pool of green assets or projects are grouped together and sold as a bond. ABS are often used to fund projects such as wind farms, or energy efficiency assets such as solar panels (Nanji, Calder & Kolodzie 2014).

2.3 Institutions Involved
The **International Capital Market Association (ICMA)** plays a central role by framing market practices and regulatory guidelines. The ICMA has also laid out the **Green Bond Principles**. The principles are the voluntary standard for the global $6 trillion sustainable bond market that represents the largest source of market finance dedicated to sustainability and climate transition, available to corporates and financial institutions, as well as supranational, agencies and sovereigns (ICMA, 2023).
Similarly, the **Climate Bonds Initiative (CBI)** offers independent certification through its Climate Bond Standard, ensuring environmental integrity. Climate Bonds helps ensure the quality of these bonds, and provides investors, issuers and others with the information they need to participate in the market (CBI, 2023).
On the issuance side, multilateral development banks such as the **World Bank** and the **European Investment Bank (EIB)** have been pioneers, funding large-scale green infrastructure since as early as 2007. Today, even national governments and central banks have become active participants in the green bond space, further legitimizing and scaling its global impact.

3. GREEN BONDS AS A TOOL FOR SUSTAINABILITY
3.1 Funding Environment Projects
Green bonds have emerged as a vital source of funding for renewable energy, clean transport, and Climate-resilient infrastructure–sectors that are central to achieving a sustainable economy. Governments and financial institutions have progressively utilized green bonds to generate financing for climate mitigation, renewable energy, and sustainable infrastructure (Smith, A., & Johnson, B., 2023).
Figure 1. Global green bond issuance (2014-2023)

Figure 1.



Note: Data shows yearly supply of impact bonds

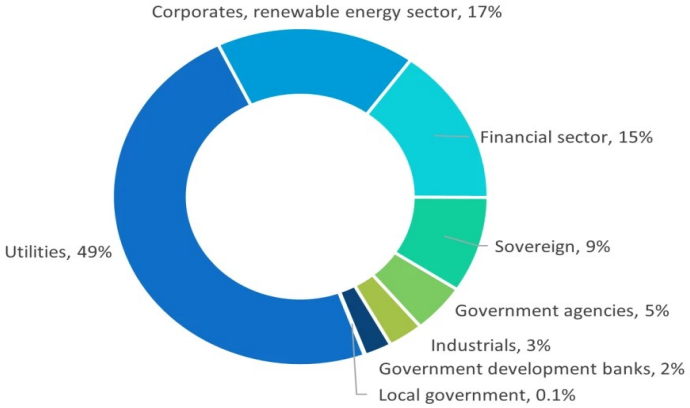
Source: Bloomberg

This section explores how green bonds have been deployed in practice, drawing on case studies from India, the Netherlands, and multilateral institutions like the World Bank to assess the tangible outcomes of these investments.

3.1.1 Renewable Energy–India

India issued its debut sovereign green bonds in early 2023 following a period of extreme weather events. On January 25, 2023, India issued the first tranche of its first sovereign green bond worth INR 80 billion (equivalent to $980 million). On February 9, 2023, the Government of India announced the issuance of another INR 80 billion ($968 million) in sovereign green bonds (World Bank, 2023).

Figure 2 - Green bond amounts issued in India by type of issuer. Source: World Bank with data from Bloomberg

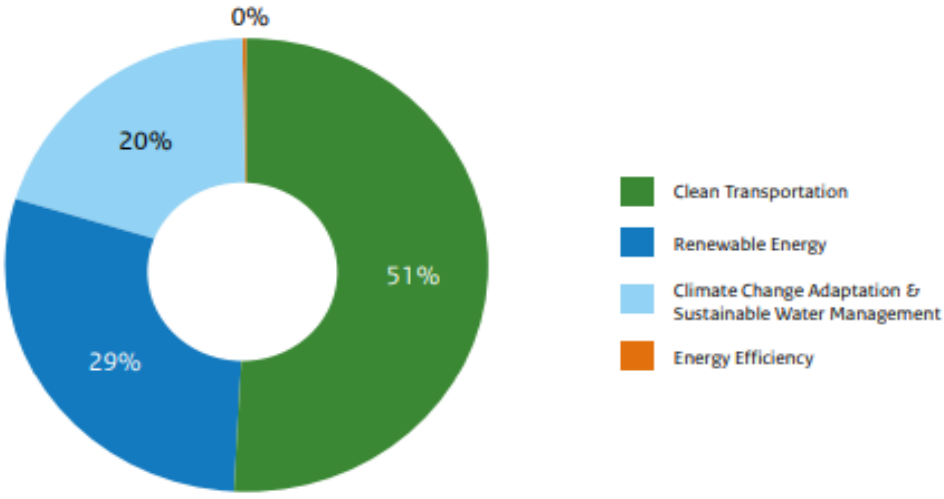


3.1.2 Clean Transport–Netherlands

The Netherlands' green bonds allocations have consistently supported the green transport infrastructure, leveraging 51% of the proceeds towards clean transport, as shown in figure 3. The largest Dutch rail transporter – de Nederlander Spoorwegen – uses 100% green energy. 92.9% of the railroad is electrified (Dutch State Treasury Agency, 2024).

To incentivize the adoption of zero-emission vehicles, the Dutch Government introduced a temporary exemption on motor vehicle tax to boost uptake. Zero-emission vehicles will remain exempt from the national component of the motor vehicle tax up to 2025. Plug-in hybrid electric vehicles have a 50% reduction in tax rate up to 2025(Dutch State Treasury Agency, 2024).

Figure 3 - Allocation of Proceeds. Source: State Of The Netherlands - Green Bond Report 2024



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3.1.3 Climate-Resilient Infrastructure–World Bank

Since 2008, the proceeds from World Bank Green Bonds22 contributed to $16.3 billion in disbursements to projects helping member countries pursue a transition to low-carbon and climate resilient development and growth (World Bank, 2023). These include investments in **flood protection systems**, **urban drainage**, **coastal resilience**, and **agriculture adaptation**—sectors crucial to communities vulnerable to climate change.

3.2 ESG and Investor Behavior

Green bonds are fundamentally linked to ESG (Environmental, Social, and Governance) goals, particularly the *Environmental* component. By allocating funds specifically towards climate-aligned projects, they make a long-term sustainability impact. Furthermore, The Green Bond Principles help meet the governance standards by requiring transparency on use of proceeds and environmental impact, thus complying with ESG goals.

The role of these bonds in sustainable finance is becoming increasingly prominent as they provide public sector institutions with the capital needed for long-term environmental initiatives, such as renewable energy infrastructure, clean transportation, and climate resilience projects. (Mishra & Aithal, 2023).

Besides being the "sustainable finance favorites", green bonds also attract a broad pool of investors looking for a green portfolio. The consistent rise in ROI from 3.5% in 2020 to 5.8% in 2024 indicates an improved financial performance of green projects, making them more attractive to public and private investors. The higher ROI in recent years suggests that sustainable investments are yielding better financial and environmental returns (Celestin & Mishra, 2025).

While green bonds are widely regarded as a key mechanism in advancing sustainability, growing scrutiny suggests that not all issuances meet the high standards implied by their label. In the next section, we have discussed the marketing side of green bonds.

4. GREEN WASHING CONCERNS IN GREEN BONDS

In recent years, green bonds have become a popular way for governments and companies to raise capital for environmental projects. The basic idea is simple, raise funds for a cleaner tomorrow. But as the popularity of these bonds has grown, so have concerns about greenwashing—where companies pretend to be more environmentally friendly than they really are.

4.1 Lack of Standardization

One of the biggest issues with green bonds is that there is not a single global definition of what green actually means or what it accounts for. Because of these different organizations have different definitions of what green means.

For example, one company might use green bonds to build a solar park, while another might use them to make a coal plant slightly more efficient. Technically, both may claim to be helping the environment, but their actual impact is very different.

The lack of standardization makes it easier for the companies to label almost anything as green. Even when it doesn't help the environment that much.

4.2 Examples of Greenwashing

Several real-world examples show how companies use green bonds for image-building rather than real change. For instance:

Repsol, a Spanish oil company, issued green bonds in 2020 to improve the efficiency of its fossil fuel operations. But critics pointed out that this doesn't reduce overall emissions meaningfully (Cripps, 2017)

Adani Green Energy, part of the Adani Group in India, issued $750 million worth of green bonds in 2021 to fund renewable

energy projects. This so-called 'green' bond issued by Adani Green Energy, tainted by allegations of greenwashing, related party transactions and serious governance concerns, marks a significant test for the international financial community – a test that many have failed, effectively endorsing a facade of sustainability while enabling the world's biggest private coal developer to continue its expansion of fossil fuel projects. (network, 2024)
The above cases show how green label is sometimes used more as a marketing tool than a reflection of actual progress

4.3 Problems with transparency and reporting

Another concern is the lack of reporting. Many issuers of green bonds don't share clear or audited data on how funds are being utilized or how the environment is impacted positively. And even when reports are published, they often use vague language like "energy efficiency improved" without giving out solid numbers. Without clear data investors have no way of knowing whether their funds are actually making any difference or not.

4.4 Green bonds for branding, not impact

Some companies are using green bonds mainly to improve their public image and public relations. For example, a company might issue a green bond for a small eco-friendly project, while the whole business pollutes the environment massively.
The problem is that investors often believe the green label without asking tough questions, which allows greenwashing to continue.

5. MARKET AND REGULATORY RESPONSES

As green bonds become more and more popular the concerns related to greenwashing rise thankfully, governments, regulators and investors have started to respond to these issues. They are creating stricter rules and demanding better accountability from green bond issuers.

5.1 Regulatory efforts

Traditional regulations mostly focused on the broad aspect and guidelines. But today's regulators are moving towards more data driven and technical frameworks
For example, The EU Taxonomy defines which activities can be called "green," and the EU Green Bond Standard requires companies to verify their green projects and report outcomes in a clear, consistent way (European commission, 2021) This means a project must meet specific climate and environmental targets—like emission limits or pollution controls—to be considered green. These are based on actual climate science, not marketing language.
India has also made innovative updates. In 2023, SEBI introduced color-coded green bonds—like blue for marine projects and yellow for solar—making it easier for investors to understand where their money is going (SEBI, 2023). This is a small step towards transparency and simplicity
Some regulators are now experimenting with real-time fund tracking. This means the money raised through green bonds could be digitally monitored—possibly using blockchain or AI systems—to ensure that it is actually being used for green purposes. Although still in early stages, this technology could prevent greenwashing before it even starts.

5.2 Market pressure: investors want real proof

Investors are no longer satisfied with vague claims of ESG. They want proof of performance and not just promises. In fact, major firms like BlackRock have started demanding clear, measurable outcomes from companies issuing green bonds.
The growing demand is shifting the market towards impact accountability. If a bond claims that it helps in reduction of emissions then the investors now expect to see numbers, reports and even third-party verifications.
Investors are now also paying attention to how consistent a company is with their claims. A company issuing green bonds while expanding coal production projects are likely to face questions and even backlash. This pressure is helping push companies to align their entire strategy with sustainability goals.

5.3 Innovation in Instruments: Transition and SLB Models

Another big shift in the green finance space is the introduction of new types of bonds that go beyond the traditional "green" label.
Transition Bonds
These are designed for industries that can't become 100% green immediately—like steel, cement, or aviation. Instead of funding perfect green projects, transition bonds support gradual improvements, like upgrading equipment to cut emissions or switching to cleaner fuels. This makes the market more inclusive and realistic, especially for developing economies.
Sustainability-Linked Bonds (SLBs)
These bonds are performance-based. The company issuing the bond agrees to meet certain environmental targets (like reducing carbon emissions by 30% in five years). If they fail, they must pay higher interest to investors. This directly connects financial cost to sustainability performance, adding real consequences for failure.

These new instruments represent a smarter, more flexible approach to sustainable finance.

6. CONCLUSION

Green bonds have emerged as promising instruments, hanging between a complex space of promise, performance and greenwashing. On one hand, they have channeled significant capital into critical sectors such as clean transport, renewable energy and sustainable infrastructure. The case studies of India, The Netherlands, and The World Bank depict clearly that green bonds can finance meaningful, large-scale environmental change.

On the other hand, the word 'green' is often compromised by issues such as greenwashing, lack of standardization, and vague reporting. Our findings suggest that while green bonds are legitimate tools for sustainability, at times they are also deployed as 'brand-enhancers.'

Therefore, we conclude that green bonds are a promising tool for sustainability and are not inherently flawed, but their credibility depends entirely on rigorous regulation, transparent reporting, and market discipline to prevent misuse. If greenwashing prevails, green bonds are unlikely to have any real impacts that are beneficial to the environment (Fatica & Panzica, 2021). Their effectiveness lies not in the label they carry, but in the impact they create.

7. REFERENCES

[1] International Finance Corporation. (2024). *Emerging market green bonds 2023*. https://www.ifc.org/content/dam/ifc/doc/2024/emerging-market-green-bonds-2023.pdf
[2] Nanji, A., Calder, A., & Kolodzie, M. (2014). *Green bonds: Fifty shades of green*. RBC Capital Markets.
[3] Ma, Cong & Schoutens, Wim & Beirlant, Jan & Spiegeleer, Jan & Höcht, Stephan & Van, Robert. (2020). Are green bonds different from ordinary bonds? A statistical and quantitative point of view.
[4] ICMA. (2023). *Sustainable bonds for nature: A practitioner's guide* [PDF].
[5] Smith, A., & Johnson, B. (2023). Trends in green bond issuance: A global perspective. Environmental Finance Quarterly, 22(4), 101-119.
[6] CBI. (2023). About Us. Climate Bonds Initiative. https://www.climatebonds.net/about
[7] World Bank, 2023. Blogs. India incorporates green bonds into its climate finance strategy.
[8] World Bank. (2024). *IBRD FY23 impact report*. World Bank.
[9] State Of The Netherlands - Green Bond Report 2024.
[10] Mishra, A. K., & Aithal, P. S., (2023). Building Ethical Capital through Human Resource. International Journal of Management, Technology, and Social Sciences (IJMTS), 8(1), 1-15.
[11] Celestin M, Mishra A K. The Evolution of Green Bonds and Sustainable Finance in Public Sector Budgeting and Development Projects. J Adv Res Humani Social Sci 2024; 12(1): 7-16
[12] International Green Bond Performance Report (2024)
[13] Fatica S, Panzica R. Green bonds as a tool against climate change? Bus Strat Env. 2021; 30: 2688–2701.
[14] cripps, p. (2017, june 7). *Green bond comment, June – Of Repsol and reputation*. Retrieved from enviornmental finance: Repsol, a Spanish oil company, issued green bonds in 2020 to improve the efficiency of its fossil fuel operations. But critics pointed out that this doesn't reduce overall emissions meaningfully (Repsol, 2020).
[15] european commission . (2021). *EU taxonomy for sustainable activities: What the EU is doing and why*. Retrieved from european commission: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en
[16] network, t. b. (2024, March 4). *Investors and banks financing Adani's 'green bond' fail first litmus test post-Hindenburg*. Retrieved from toxic bonds: https://toxicbonds.org/adani-financiers-fail-test-post-hindenburg/?utm_source=chatgpt.com
[17] SEBI. (2023). *Revised disclosure requirements for issuance and listing of green debt securities.* SEBI.