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## India's Shift Towards Sustainable Development: Green Finance

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### Abstract

Green finance plays an important role in promoting sustainability by diverting resources into ecologically friendly enterprises. This article emphasizes its expanding role in India's transition to a low-carbon economy, particularly in light of global climate commitments. The study uses a descriptive methodology and is based on secondary sources such as official statistics, reports, and scholarly literature. According to the findings, green finance has a favorable impact on India's growth in renewable energy, carbon reduction, climate resilience, and sustainable urban development. Key motivators include increased public awareness, international funding, and policy support. These findings imply that green finance not only promotes environmental objectives but also improves investor confidence and economic stability. In the future, its influence might be increased by incorporating fintech, increasing the number of green financial products, and clarifying regulations. According to the study, green finance is more than a trend; it is a fundamental pillar of sustainable development in India.

Key words: Green Finance, Emergence of Green Finance, Drivers , Green Bonds

### Introduction

Financial systems around the globe are being reshaped largely due to factors related to the environment, especially climate change and growing concern about resources and the environment. Directing capital smoothly and sustainably to the world as it meets the SDGs is a major job for financial groups and banks. Ensuring alignment with this mission is mainly through using green finance, which covers financial means for carrying out environment-friendly projects. It denotes a way by which Green Finance supports healthy growth in the economy and at the same time protects nature and the environment. It is important to mention that it

mainly supports projects and programs that promote sustainable development by giving them financial resources. Sustainable development means trying to achieve a balance between development and nature. The focus of this idea is to save natural resources so that people in the future can enjoy them. Green finance can be implemented by supporting clean energies, building with environmentally friendly materials, handling pollution problems, improving transportation, and using more environmentally friendly farming techniques. On the global scale, more organizations are launching green offenses, by offering green loans and bonds as well as adding ESG criteria to their lending policies.

Maintaining a fast pace of economic growth while dealing with negative impacts on natural resources is an issue for one of the fastest-growing and climate-vulnerable economies in the world, which happens to be India. The nation has promised climate action by signing the Paris Agreement to become net zero by 2070. This vision can become a reality with the arrival of a large amount of green capital. Being a pillar of the financial sector, Indian banking should ensure that this capital is used successfully.

In recent times, people have started to focus more on sustainability in economic policy, what businesses do, and everyday personal choices. Green finance has played a major role in building sustainability by linking money and environmental concerns. Facing serious environmental issues, fast city growth, and the desire for growth in the economy, people in India want to focus more on sustainability. In India, using green finance is important for dropping emissions, increasing the use of renewable power, and improving the country's whole environment.

### Literature Survey

The first part of this review examined recent literature published on the topic and discussed their key points.

Sushma B S (in 2021) points out the increasing value of environmental protection together with achieving profits in business organizations. It refers to green finance as funds given to projects that address sustainability issues, especially matters related to both climate change and renewables. This research discusses Green Banking, Green Insurance, and Green Bonds to see if they play a role in growing economies like India. The study further examines new opportunities and obstacles, giving further ideas about how green finance can help meet sustainability goals.

Ozili, Peterson Kitakogelu (2022) In this work, important concepts and ideas in green finance are discussed, paying particular attention to encouraging green investments, using new technology and policies, and how both regulators and financial companies play a part. The paper explains the major problems faced by countries and how green finance can lead to positive change. At the same time, problems such as lack of awareness, differing definitions, poor

cooperation between regulations, and fewer reasons for investors to join, slow down its advancement.

The study by Sreenu Nenavath & Shashwat Mishra (2023) points out that green finance and fintech are becoming more important for sustainable economic developments. Studying data from Indian states (from 2010 to 2021) using a two-step GMM model, it was found that green finance helps improve financial structure, its effectiveness, and helps protect the environment. Green finance contributes more to our financial set-up and nature's protection, yet fintech plays a minor role in making the industry more effective. It seems that partnering fintech with green finance and making solid rules will support sustainable development in India.

### Objectives of study

1. To examine the green bond issuance over a decade period
2. To know the emergence of green finance in India
3. To identify the drivers and impact of green finance in India

### Research

The nature of the research article is descriptive. The information is gathered from secondary sources that have been published, including websites, research articles, reports, and journals.

### Green Finance

Green finance covers services and tools created to support the environment. Examples of such activities are financially supporting renewable energy, boosting energy conservation, promoting sustainable farming, dwindling waste, overseeing water systems, conserving living species, and taking part in projects on climate protection.

The following outlines the main categories used to describe Green Finance.

**Green loans:** This type of loan is given to help organizations focus on green activities that benefit the environment, for example by reducing CO2 emissions.

**Environmental insurance:** Insurance designed primarily to handle issues involving the environment and encourage sustainable ideas.

**Carbon markets and credits:** People can use these markets to buy and sell carbon credits used to offset company CO2 emissions.

### Methodology

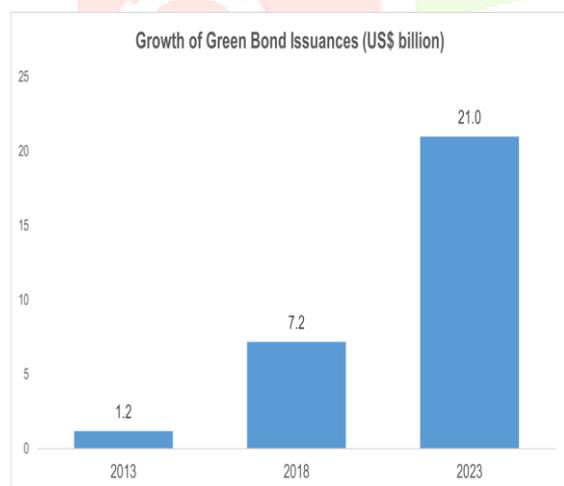
**Funds using ESG:** They include Environmental, Social and Governance principles in the decisions they make with your investments.

### The development of Green Finance in India

After making global pledges such as those in the Paris Agreement, India is concentrating more on sustainability. The Paris Agreement requires India to cut its level of carbon emissions by 33-35% from 2005 levels by the end of 2030. Besides the 50% renewable energy target by 2030, the country plans to achieve other important goals related to green energy, lessening carbon emissions and sustainable farming. Officials expect that meeting India's NDCs under the Paris Agreement can cost the nation US\$ 2.5 trillion between 2015 and 2030, or about US\$ 170 billion a year.

Due to the large scale of these objectives, securing money has become a big issue. Because traditional capital is mainly focused on small returns quickly, it has not usually provided enough support for large investments in green projects. This gap has given rise to green finance, which offers long-term, patient capital aligned with environmental objectives.

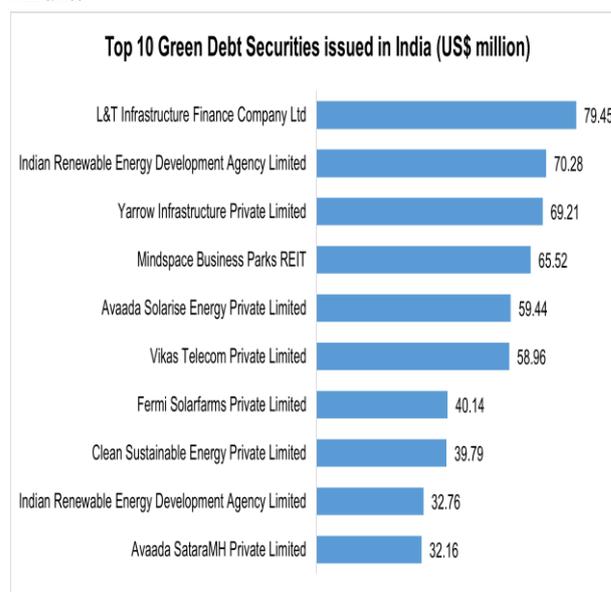
### Fig 1: Showing the Green bond issuances



(Source: The Journal of Indian Institute of Banking & Finance)

Chart 1 depicts the Green bonds have been on the rise in India over the past ten years. Bonds issued by the government grew from US\$ 1.2 billion (Rs. 1,000 crore) in 2013 to US\$ 21.0 billion (about Rs 1.7 lakh crore) by 2023. These actions have benefited from good government policies and the focus on creating a sustainable economic system. Debt securities called green bonds are sold to support environmental projects.

### Figure 2 Showing Debt securities Issued in India



(Source: SEBI, Data is as on April 30, 2024)

Chart 2 represents the top 10 green debt securities issuers in India are shown in the chart; their issuance amounts range from US\$32.16 million to US\$79.45 million. With a strong institutional commitment to green finance, L&T Infrastructure Finance Company Ltd. ranks highest, closely followed by Yarrow Infrastructure Private Limited and Indian Renewable Energy Development Agency Limited. The existence of numerous private businesses, such as Fermi Solarfarms, Vikas Telecom, and Avaada Solarise, suggests that the private sector is actively involved in sustainable development. The Indian Renewable Energy Development Agency Limited's frequent appearances highlight its significant and continuous significance in the ecosystem of green finance. All things considered, the data shows that green finance in India's public and private sectors is becoming more varied and extensive.

### Drivers of green finance in India.

The growth of green finance in India has been boosted by several factors:

- **Policy Support:** The government of India implemented the National Action Plan on Climate Change (NAPCC), Renewable Purchase Obligation (RPO) and the Smart Cities Mission to back large-scale sustainable development. In February 2024, the money allocated for the Smart Cities Mission came to US\$ 86.43 billion (nearly Rs. 7,20,000 crore). As for these, 7,742 projects

with a combined estimated value of US\$ 21.80 billion (Rs. 1,81,561 crore) have been put up for bid. Officials have given work orders for 2,740 projects with a combined value of US\$ 10.68 billion (approximately Rs. 89,000 crore), while another 5,002 projects, worth US\$ 11.11 billion (equal to approximately Rs. 92,561 crore), have now been completed. Because of these initiatives, more investors, national and global, are looking into green ventures.

- **International funding:** Global institutions like the World Bank, Green Climate Fund and Asian Development Bank have financially supported India by giving funds for renewable energy and protecting the environment.
- **Corporate and institutional initiatives:** Indian enterprises, mainly in the fields of renewable energy, transport and infrastructure, have been increasingly choosing sustainable investments and issuing green bonds to get the funds needed for environmentally friendly work.
- **Growing public awareness:** People and investors in India are now asking for financial tools that follow sustainable policies, leading to increased awareness about the environment.

### Impact of Green Finance

Green Finance has a multi-dimensional impact on India's sustainable development. These impacts are in several areas highlighted below:

- **Growth of renewable energy:** The [renewable energy sector](#) has been one of the most visibly impacted sectors due to the rise of Green Finance. Wind, solar and hydropower projects have all benefitted largely due to Green Finance. India currently stands fourth in terms of installed renewable energy capacity. As per the Central Electricity Authority (CEA), India's installed renewable energy capacity has grown by 396% since 2016, reaching 201.45 GW as of October 10, 2024, and making up 46.3% of the country's total installed power generation capacity. At COP26, India set a bold goal of achieving 500 GW of non-fossil fuel-based energy by 2030.
- **Climate resilience and adaptation:** Green Finance has also contributed to enhancing India's climate resilience. Investments in sustainable agriculture, water management and climate-resilient infrastructure have helped communities adapt to changing climatic conditions. For

instance, financing for watershed management projects has improved water security in drought-prone areas, while investments in climate-smart agriculture have increased crop productivity and resilience to extreme weather events.

- **Reduction in carbon emissions:** Green Finance has been instrumental in reducing India's carbon footprint. The shift to renewable energy, along with investments in energy efficiency and pollution control, has helped lower greenhouse gas emissions. India's carbon intensity has declined steadily, bringing the country closer to its Paris Agreement targets. Between 2005 and 2019, India's GDP expanded at a compound annual growth rate of 7%, while its emissions increased by just 4% per year, reflecting a 33% reduction in the carbon intensity of its GDP.
- **Biodiversity and ecosystem conservation:** Green finance has played a role in conserving India's rich biodiversity through funding tools like conservation bonds and sustainable forestry funds. This financial assistance has supported protected areas, wildlife reserves, and sustainable land use practices, helping to secure ecosystems that are vital for environmental health and economic resilience.
- **Sustainable Urbanisation:** India's Smart Cities Mission, backed by green finance, has advanced sustainable urban growth by incorporating renewable energy, waste management, and eco-friendly transportation into urban planning. This funding has enabled cities to adopt green technologies, cut pollution, and enhance residents' quality of life. By September 2024, over 8,000 multi-sector projects are underway in 100 cities, with a total investment of US\$ 19.06 billion (roughly Rs. 1.6 lakh crore). Over 90% of these projects—7,244 valued at US\$ 17.31 billion (Rs. 1,45,312 crore)—have been successfully completed under the Smart Cities Mission.

### Benefits of Green Finance:

- Green finance offers numerous benefits to investors, businesses, and the planet. From an investor's perspective, it provides an opportunity to generate financial returns while contributing to sustainable development. Green investments often demonstrate long-term stability and resilience, as they align with global efforts to combat climate change and transition to a low-carbon economy. This alignment reduces exposure to fossil fuel-

related risks and positions investors for long-term success in a rapidly changing world. Moreover, investing in green projects can enhance a company's reputation and attract socially conscious investors, leading to improved market positioning and potential competitive advantages.

- For businesses and project developers, green finance provides access to capital for environmentally friendly initiatives that might otherwise struggle to secure funding. Green loans and bonds offer attractive terms and interest rates, incentivizing sustainable business practices. This financial support enables companies to invest in clean technologies, upgrade their infrastructure to be more energy-efficient, and implement sustainable practices throughout their operations. Additionally, adopting green finance principles can drive innovation, as businesses seek creative solutions to meet environmental challenges and embrace sustainable business models. This innovation can lead to the development of clean technologies and practices, creating new green job opportunities and contributing to economic growth.
- From an environmental perspective, green finance plays a pivotal role in advancing sustainable development and mitigating climate change. By redirecting capital towards green projects, it accelerates the transition to renewable energy sources, such as solar and wind power, reducing reliance on fossil fuels. This transition not only helps combat climate change by reducing greenhouse gas emissions but also promotes energy security and independence. Furthermore, green finance supports sustainable infrastructure development, including smart cities, green buildings, and efficient transportation systems. It also fosters conservation and biodiversity protection through investments in projects that preserve and restore natural ecosystems.

### Conclusion

Green Finance today has become not just a financial innovation, it is shaping up to be a necessity for India's sustainable development. As the country progresses to meet its climate goals while ensuring economic growth, we believe Green Finance will play a major role. By investing in renewable energy, climate resilience, sustainable urbanisation and biodiversity conservation, India can achieve a green and

prosperous future. The road ahead for Green Finance in India is filled with opportunities. Benefits of green finance is essential for investors, businesses, and individuals seeking to align their financial decisions with environmental sustainability. By embracing green finance, we can build a more resilient and prosperous future for both humanity and the planet. As awareness grows, regulatory frameworks will mature, and global investors will show increasing interest in sustainable projects. Moreover, Green Finance will continue to accelerate India's transition to a more sustainable, low-carbon economy. As our world faces pressing environmental challenges, the need for sustainable financial solutions has become paramount. Green finance offers a pathway to aligning financial investments with environmental goals. In this blog, we will delve into the basics of green finance, its key components, and the benefits it brings to both investors and the planet.

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