



# EMERGING TRENDS IN GREEN FINANCE: A COMPREHENSIVE REVIEW

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**Abstract:** Sustainable finance refers to the allocation of money to support initiatives that have significant social, economic, and environmental benefits. This encompasses many types of financing such as "green finance," "climate finance," and "low-carbon finance." Green financing is essential for achieving "low carbon - green growth". Green finance plays a crucial role in promoting low carbon green development by bridging the gap between the financial sector, environmental enhancement, and economic expansion. This article aims to examine the concept of green finance and provide a comprehensive review of its key aspects and this report also examines the current trends and sustainable products in India. This research also reveals the obstacles in green financing in developing India. As per the report the government requires an estimated amount of INR 162.5 lakh crores (USD 2.5 trillion) by 2030 and investments totaling \$10 trillion in order to accomplish a net-zero objective by 2070. Green bonds and other green financing tools are at a disadvantage compared to conventional energy forms due to perceived investment risks, technology risks, high debt costs, low operational costs, lack of awareness, absence of a proper regulatory framework, and short loan durations. The regulatory policy should be open and favorable to foster trust and confidence among investors. India should prioritize attracting both local and global businesses. The design of green financing instruments should be created to appeal to both domestic and global investors. The study offers a theoretical comprehension for future researchers and also offers recommendations to the government, legislators, and financial organizations for additional enhancements in the subject.

*Keywords: Green Finance, Sustainable, Green Bond, Government initiatives, Environmental change*

## 1. Introduction

The Finance sector is a crucial pillar of a nation's economy. It directly influences the economic growth and development of the nation. However, the concept of Environmentalism plays a vital role in achieving sustainability in economic development (Dhoot P., & Awate S., 2021). As environmental concerns continue to grow at both national and global levels, it is crucial for the finance industry to address these challenges in a proactive manner. Given the growing recognition of environmentalism, it is mandatory for the finance sector to prioritize its involvement in addressing environmental concerns. According to the Intergovernmental Panel on Climate Change (IPCC) in 2018, an expenditure ranging from USD 1.6 to 3.8 trillion would be necessary for energy systems to limit global warming to 1.5 degrees Celsius. In order to achieve its climate ambitions for 2030, the European Union will need to allocate an extra €180 billion annually towards investments in energy efficiency and renewable energy (Jha B. and Bakshi P., 2019). To establish long-lasting infrastructure, Asia also requires annual expenditures of US\$1.7tn. India has outlined 17 targets for achieving sustainable development, which it has submitted to the IMDC (Intended Nationally Determined Contribution) under the Paris Agreement. These goals demand a significant expenditure of around USD 2.5 million to reduce India's climate change impact by 2030 (Charles G. and Philip B., 2020).

The use of green finance is a fundamental step towards achieving green development. The practice of green environmental management has been considered a kind of corporate social responsibility (CSR), which is the idea that businesses should make an effort to contribute to the betterment of society (Carroll 1979) and green financing is a corporate social responsibility (CSR) activity undertaken by financial institutions such as banks, mutual fund companies, and stock corporations (Koo 2010). Green finance involves financing arrangements that are intended to support environmentally sustainable projects or initiatives that include strategies to address climate change. Environmentally sustainable projects encompass the utilization of renewable energy sources such as solar, wind, and biogas for energy production. They also involve the implementation of clean transportation methods that result in reduced greenhouse gas emissions (Dhoot P., & Awate S., 2021). Additionally, energy-efficient initiatives such as green building are considered as part of these projects. Furthermore, waste management practices that incorporate recycling, efficient disposal, and conversion to energy are also included. The project's definition of sustainability, as outlined in the disclosure requirement for Green Debt Securities, includes climate change adaptation, efficient waste and water management, responsible land use including sustainable forestry and agriculture, and the preservation of biodiversity (SEBI 2017).

The present study's goals contribute to the body of knowledge in the following fields and significantly advance the field of green finance literature. The government's measures to promote green financing are the focus of this article. This essay also looks at current industry developments as well as the range of goods and services that fall under the umbrella of green finance. This article will discuss a number of issues related to green funding in India in the part that follows.

### Benefits of Green Finance



Figure 1: Source: Noh (2010)

## 1.1 Historical Background Of Green Finance

The United Nations Environment Programme Finance Initiative (UNEP FI) was established in 1992 via a collaboration between UNEP and a consortium of commercial banks. Its primary objective is to raise awareness about environmental issues within the financial sector. The UNEP Finance Initiative is a distinctive collaboration between UNEP and the business sector. This might be seen as the foundational concept of Green Finance. Subsequently, the program continues to include other financial organizations, such as investment and commercial banks, insurers, and fund managers, in meaningful discussions about the integration of environmental conservation with sustainable economic growth (Dhoot P., & Awate S., 2021). The objective is to incorporate environmental factors into existing financial services and procedures. Presently, around 190 financial institutions, hailing from over 40 countries, have endorsed the UNEP FI statement. Signatory institutions to the UNEP FI statement may get knowledge from the network on current trends and practices in order to capitalise on environmentally friendly prospects for growth. They also have the opportunity to influence the sustainable finance agenda in their own development (UNEP FI, 2010, 2011).

## 2. Literature Review

Parvadavardini & Nagarajan (2014) attempted to analyze the correlation between green growth, green financing, and the availability of green goods in the Indian market, along with their advantages and disadvantages. The researchers

also examined several financing strategies and the specific actions done by banks such as BOB and SBI to provide funding for small and medium-sized enterprises (SMEs).

Cochu et. al. (2016) disclosed that the cash generated by green bonds should be allocated to various environmentally-focused projects within qualified categories, rather than being limited to low carbon and climate-resilient projects solely.

Goel P. (2016) examined the green financing efforts implemented by prominent governmental and commercial entities in India, as well as explored the range of green goods and services offered in the country. The researcher discovered that commercial banks in India provide a range of green financial products to customers. These include the Green Home Bank loan scheme, which offers low-interest rates to incentivize customers to choose environmentally friendly housing. Additionally, there is a Vehicle finance option that reduces interest rates by 50% for loans taken by consumers to purchase cars that utilize renewable energy sources. Union Bank of India also offers schemes that provide loans to farmers for the purchase of solar water heaters, solar water pumps, and the installation of solar home lighting systems.

Jha & Bakhshi (2019) emphasized the efforts and actions undertaken by both governmental and private sector organizations/banks in the field of green finance. The report highlighted the many obstacles in the field of green finance in India and proposed that openness in regulatory policy be implemented to foster investor confidence. Additionally, the report suggested the inclusion of both foreign and indigenous investors to improve green finance in India.

Sharma N. (2015) attempted to evaluate the amount of client knowledge about Green Finance and its associated goods. This research focused specifically on the green financing efforts implemented by private-sector banks. According to this survey, the researcher discovered that clients are cognizant of the green financing initiative program.

Saha & Saunak (2023) emphasized the growing interest of government and business firms in green finance prospects. In order to enhance and enhance the transparency of enterprises' environmental sustainability, technology will be used to monitor and measure emissions, reporting obligations will be strengthened, and governance will be enhanced. This will enhance investor trust and alleviate concerns about greenwashing.

### 3. Objectives of the study

The current research is only focused on Descriptive Research. This research aims to investigate the following goals:

1. To discuss the government practices for promoting green finance.
2. To analyze the trends in green financing in India.
3. To analyze the various products and services available under Green Finance.
4. To examine various challenges in the area of green financing in India.

### 4. Methodology

The examination of the topic of green finance in India is the primary emphasis of this study. The data for the research was gathered via the use of secondary sources. This is descriptive research that is based on secondary sources of information. The purpose of this literature review is to assist with developing a knowledge of the most recent products and policies implemented by the government in relation to green financing. publications, articles, journals, reports, papers, and websites were the sources of information that were used to compile the data for this conceptual research.

### 5. Discussion and Findings

#### 5.1 Government initiatives for green finance

The following are the recent government policies and initiatives that have expanded the scope of green finance in India:

1. In 2016, the Indian Renewable Energy Development Agency (IREDA), which was formerly a Non-Banking Financial Company (NBFC), underwent a transformation into a green bank, marking the first move towards establishing a green bank in India (Gupta V. and Chaddha S., 2023). A green bank is an entity that provides financial support for environmentally friendly initiatives and actively works to decrease carbon emissions via its banking operations. IREDA was founded with the objective of promoting renewable and green energy sources and facilitating the allocation of private sector money for these initiatives. As a result, numerous other banks such as State Bank of India and Union Bank have transformed themselves into environmentally-friendly banks. SBI provides long-term loans with preferential interest rates to fund green projects. The bank has introduced the 'Green Home Loan Scheme' to give loans at concessional rates for residential developments that prioritize sustainability. Bank of Baroda has launched a program to support small and medium-sized firms (SMEs) in obtaining the appropriate equipment and implementing initiatives to

improve energy saving. Similarly, ICICI Bank has successfully provided the required financial support for carrying out initiatives associated with renewable energy, energy conservation, reduction of greenhouse gas emissions, and sustainable technology (Ansari & Anand, 2022).

2. In 2008, the Indian government initiated the National Action Plan on Climate Change. The strategy outlined eight primary missions, including the National Solar Mission, the National Mission for Enhanced Energy Efficiency, and the Green India Mission, among others. These missions have the objective of advancing sustainable development in several areas of the economy, such as energy, transportation, agriculture, and forestry (Ministry of Environment, Forest and Climate Change, 2021). To facilitate these endeavors, the Indian government has established many funds and organizations dedicated to providing financial assistance for environmentally sustainable projects. The National Sustainable Energy Fund (NCEF) was created in 2010 with the purpose of providing financial support for sustainable energy initiatives. The fund gets a share of the income earned by the coal tax levied on the coal industry in India. The National Clean Energy Fund (NCEF) has provided assistance to various renewable energy initiatives around the nation, including solar, wind, and biomass energy.

3. India's National Action Plan on Climate Change proposed that the nation should achieve a 10% share of renewable energy in its power generation by 2015, and increase it to 15% by 2020. India's total installed power generating capacity is 2, 55,012.79 megawatts (MW), with renewable power accounting for 12.42% or 31,692.14 MW. This indicates a significant opportunity for investment in the renewable energy industry (Dhoot P., & Awate S., 2021).

4. The Ministry of New and Renewable Energy (MNRE) has updated its goals for energy capacity to reach 175,000 MW by 2022. This includes 100,000 MW from solar energy, 60,000 MW from wind energy, 10,000 MW from biomass energy, and 5,000 MW from small hydro energy (Ministry of New and Renewable Energy, 2022). These updated objectives need a substantial financial commitment. Due to insufficient funds in the sanctioned budget, MNRE has requested financing institutions in the public and commercial sectors, such as Power Finance Corporation (PFC), Power Rural Electrification Corporation (PREC), and the Indian Renewable Energy Development Agency (IREDA).

5. India, although being responsible for just 4% of global emissions, is very vulnerable to the impacts of climate change. In order to accomplish its objective of attaining a Net Zero Emission Target, India need a minimum of US\$10 trillion to transform into a carbon-neutral nation. Efforts have been intensified to get funding from private investors, including the issuance of Sovereign Green Bonds. The International Capital Market Association (ICMA) Green Bond Principles have developed a comprehensive regulatory framework. In January 2023, the Indian government released its initial batch of sovereign green bonds, valued at approximately INR 80 million (Rs 4,000 crore), with a maturity period of five years and a coupon rate of 7.1 percent. In February, another set of bonds with the same value and denomination, but with a maturity period of ten years and a coupon rate of 7.29 percent, was issued (Gupta V., & Chaddha S., 2023). These bonds were aimed at providing financial support to green infrastructure projects in the public sector and reducing the carbon intensity of the economy.

6. The Government has authorised the National Green Hydrogen Mission on January 4, 2023, with an initial budget of INR 19,744 crore. The mission aims to make India self-sufficient in energy and reduce carbon emissions in important industries. The Mission aims to promote the generation, manufacturing, use, and exportation of Green Hydrogen, as well as attract investments totaling over INR 8 lakh billion by 2030 (Menon, 2023). India has made a total investment of US\$ 78.1 billion in renewable energy. The investment in renewables has consistently been at or above US\$ 10 billion per year since 2016, except for 2020, which may be attributed to Covid-19 limits. The projected value of the green hydrogen market in India is anticipated to reach \$8 billion by 2030 and \$340 billion by 2050.

7. According to a study by SEBI, around 15 companies have raised a total of INR f between 2017 and 2022 to fund projects related to generating renewable energy (SEBI, 2023). In addition, the Reserve Bank of India (RBI) has been providing guidance to banks to encourage sustainable finance since 2007. Furthermore, the RBI has implemented incentives to encourage banks to lend to companies and projects that are environmentally friendly.

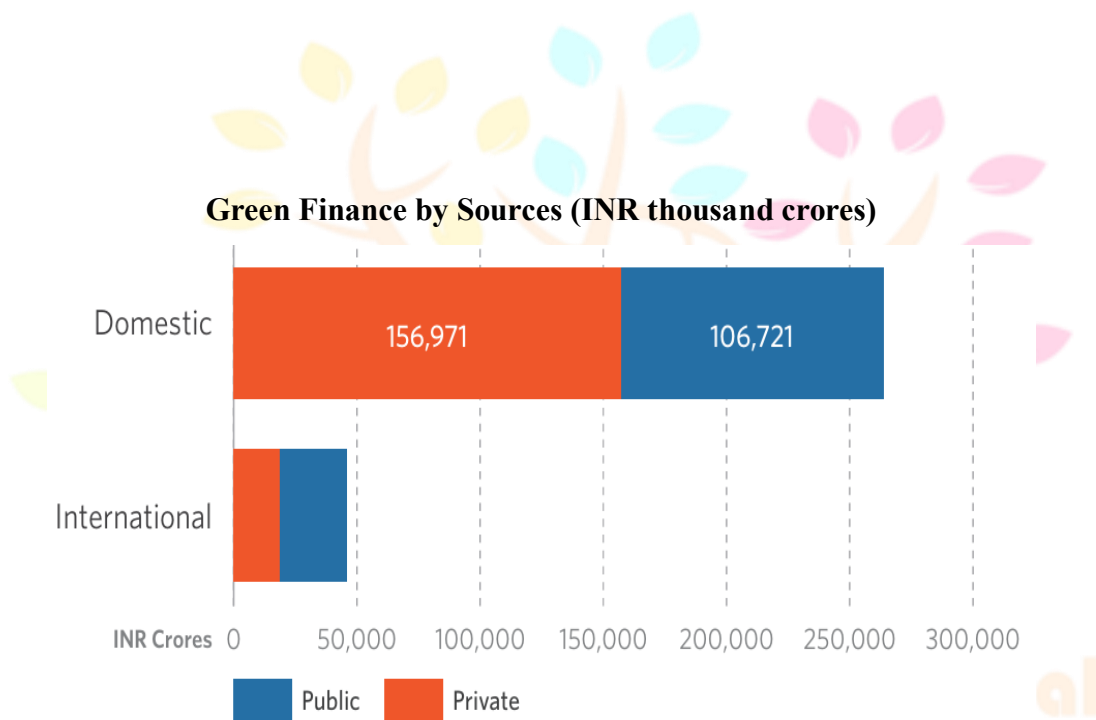
8. One important kind of green financing that has become increasingly popular is known as a 'green deposit'. A green deposit is an interest-bearing deposit that is accepted by a Regulated Entity (RE) for a certain duration, with the funds designated for use in green financing. As a result, the Reserve Bank of India (RBI) published a Framework for Acceptance of Green Deposits on 11 April 2023. The framework will be operational starting on 1 June 2023 (KPMG, 2023).

9. To replace fossil fuels, it is necessary to increase the production of alternative sources of green fuel. The sugar sector has recently undergone a transformation into a green energy sector by adopting ethanol, a renewable fuel, as a means to reduce carbon emissions. Ethanol is added to fuel in order to decrease petrol consumption. The government has achieved a blending level of 12% in the current year and aims to raise it to 20% by 2025. The incorporation of

ethanol blending has led to a significant reduction of about INR 50000 crore in foreign exchange expenditure over the last 7-8 years, which would have otherwise been used to purchase crude oil (Press Information Bureau, 2022).

## 5.2 Recent trends of green finance in India

In order to fulfill its Nationally Determined Contributions objectives, India commits to reducing its emissions intensity by 33-35 percent by 2030 compared to 2005 levels and increasing the proportion of renewable energy (RE) in its installed electric power capacity to 40 percent by 2030 (Jha B. and Bakshi P., 2019). The government of India estimates that a total of US\$ 4.50 trillion (US\$ 450 million annually) would be needed in the next decade to achieve the goals for renewable energy and urban sustainability. In the 2015 Union budget, the Government of India announced its goal of attaining 175 gigawatts of renewable energy by 2022 (India budget, 2016). A total of \$2570 million has been pledged by various commercial and state banks, as well as non-banking financial entities, to support the funding of green projects.



**Figure 2 Source: Khanna et. al., 2022**

Green financing has gained significant attention and popularity after Prime Minister Modi's commitment to achieving net zero emissions by 2070 during the COP26 summit in Glasgow. In addition, the government has established a five-point commitment called "Panchamrit" with the goal of generating 500 GW of energy from non-fossil sources by 2030 and lowering carbon intensity to 45%. The Prime Minister has also pledged to reduce estimated carbon emissions by 1 billion tonnes from 2021 to 2030. (EconomicTimes, 2023). The total amount of money allocated to green finance has risen steadily over the last four years, reaching an average of INR 309 thousand crores in the fiscal year 2019/2020. This represents a significant increase of 150% compared to the preceding two years. Nevertheless, this amount of funding falls far short of what India needs to achieve its NDC and Panchamrit objectives. According to the Council of Energy Environment and Water (CEEW), achieving net zero by 2070 would need investments exceeding \$10 trillion. The amount of green money has to grow by at least 3.5 times to reach Rs.11 lakh crores per year by 2030 in order to fulfill the pledges outlined above. In the 2019/2020 period, the state sector represented 43% (INR 133 thousand crores) of the tracked green financing, while private entities accounted for 57% (INR 175 thousand crores) (Climate Policy Initiative, 2022). Commercial financial institutions and companies together contributed about 69% of the overall amount. The government's budgetary spending was around 19% (INR 57 thousand crores) of the overall green funding (EconomicTimes, 2023).

The adaptation costs for India were expected to be INR 29 trillion in 2020 and INR 86 trillion in 2030, computed based on constant pricing from 2012 (DEA, 2020). The annual green financing targeted for adaptation in 2020 amounted to INR 370 billion, which was far below the necessary funding (Climate Policy Initiative, 2022).

### 5.3 Green Financial Products and Services in India

**Green Bond:** A green bond is a kind of financial instrument that functions like other bonds, with the key distinction being that the funds raised from this bond must be exclusively allocated towards energy-efficient projects pertaining to renewable energy, emission reduction, reforestation, and similar.

**Table 1: Green Bonds Issuance**

Country	Amount issued (\$Mn)	Number of bond issued	Amount issued as per cent of all bond issuance (per cent)	Number of bonds issued as per cent of all bond issuance (per cent)
Euro Area <sup>1</sup>	1,96,854	594	1.7	0.4
China	63,023	183	0.3	0.2
USA	35,421	71	0.2	0.2
Japan	11,815	88	0.1	1.1
South Korea	11,781	44	1.0	0.4
Central and Southern America <sup>3</sup>	8,869	53	0.5	1.0
<b>India</b>	<b>7,992</b>	<b>22</b>	<b>0.7</b>	<b>0.3</b>
South-east Asia <sup>2</sup>	7,208	86	0.6	1.4
Australia and New Zealand	5,878	15	1.1	0.8
UK	5,311	17	0.4	0.5
Hong Kong	4,781	19	0.5	1.0
Singapore	496	9	0.05	1.2

**Source: RBI, 2021**

initiatives. In 2014, the Indian Renewable Energy Development Agency (IRDA) issued tax-free bonds for Rs. 1000 apiece. This green bond has been issued with maturities of 10, 15, and 20 years, with corresponding annual interest rates of 8.16%, 8.55%, and 8.55% respectively. The bond received a AAA rating from CARE and Brick Works. Yes Bank issued a 10-year green infrastructure bond in 2015 to raise a sum of INR 1000 crores.

**Green Insurance:** Green insurance plans are insurance programs that provide low-cost coverage and increased protection for green products. These schemes aim to reduce the effects of climate change and encourage responsible business practices. HSBC collaborated with Allianz in India to provide its clients with green reinvestment insurance. It offers protection to buildings that have received certification from international environmental standards such as US LEED (Leadership in Energy and Environmental Design) and BREEAM.

**Green Loan Schemes:** Commercial banks are offering Green Loans to the public at reduced interest rates in order to encourage and facilitate investment in energy-efficient projects. The State Bank of India has launched the Green Home Bank loan scheme, which offers customers a low-interest rate. The scheme aims to promote the construction of environmentally-friendly housing, specifically buildings that have been certified by rating agencies such as Leadership in Energy & Environmental Design (LEED) India, India Green Building Council (IGBC), and TERI – GRIHA from TERI- BCSD India.

**Green Venture Capital:** Venture capital businesses often provide financial support to enterprises that specialize in sustainable technology and renewable energy solutions. They do so by investing in start-ups and early-stage companies via equity financing.

**Green Banking:** The Green Bank is a forward-thinking organization with a clear objective to accelerate the use of renewable energy and combat climate change via innovative financial strategies. Green banks, unlike typical banks, prioritize the implementation of sustainable energy rather than only pursuing profit maximization. Their objective is to actively participate in market research and establish a portfolio of green initiatives. The primary objective of almost all Green Banks is to mitigate climate change, with the additional goals of supporting low-income areas and enhancing resilience. Green banks use funding as opposed to donations. The objective of financing is to guarantee the ultimate repayment of capital, so maximizing the effectiveness of each dollar that a green bank invests. Thus, green banks prioritize markets that provide a significant possibility for financial gain.

**Table 2: Green Banking Initiatives by Indian Banks**

Sr. no	Name of bank	Initiatives
1.	<b>State Bank of India</b>	SBI has implemented an environmentally friendly banking strategy and established wind turbines in Tamil Nadu, Maharashtra, and Gujarat to produce 15 megawatts of electricity. This is the first bank

		in India that is engaged in green banking and actively advocating for green power projects.
2.	<b>Punjab National Bank</b>	implemented a range of measures to minimize emissions and decrease energy use.
3.	<b>Bank of Baroda</b>	prioritising environmentally sustainable green initiatives, such as windmills, biomass, and solar power projects, that contribute to the accumulation of carbon credits..
4.	<b>Canara Bank</b>	implemented eco-friendly initiatives such as mobile banking, online banking, telebanking, and solar-powered biometric procedures.
5.	<b>ICICI Bank Ltd.</b>	implemented the Go Green project, which encompasses actions such as promoting green goods and services, fostering sustainable consumer interaction, and using eco-friendly marketing strategies.
6.	<b>HDFC Bank Ltd.</b>	implementing a range of strategies to decrease their environmental impact in waste management, paper use, and energy efficiency.
7.	<b>Kotak Mahindra Bank</b>	Under the Think Green project, this bank has implemented many measures to reduce paper usage. They actively promote e-statements and have partnered with Grow-Trees.com to plant a sapling for each e-statement on behalf of its clients.
8.	<b>IndusInd Bank</b>	launched its Green Office Project, which included the installation of solar-powered ATMs in several locations. The project aimed to promote energy conservation and minimize CO2 emissions.
9.	<b>IDBI</b>	offers a range of services related to Clean Development Mechanisms (CDM) for our customers.
10.	<b>YES Bank</b>	It has a project portfolio focused on alternative energy and sustainable technologies.

Source: Money Control (2018)

#### 5.4 Challenges in Green Finance

Green finance, like any other kind of financing, has its own set of obstacles, which are outlined here:

Foreign currency risk is a major obstacle to green financing and is also linked to the modest size of projects.

2. The Indian green bond market is now in the beginning stages and has not been successful in attracting a sufficient number of investors. Investors often allocate their investments towards bonds with good credit ratings or low-risk investment opportunities. A well-defined structure is essential in order to make these bonds appealing to investors in the bond market.

3. Investing in green initiatives becomes too costly due to the outrageous price of borrowed funding. The high cost of debt may be ascribed to elements such as a steep interest rate, a short duration before repayment, and the absence of non-recourse debt.

4. The existing market practices, regulatory oversight, and financial incentives are posing significant obstacles to the effectiveness of financial instruments. There is still a lack of clear and well-defined laws and regulations governing green financing. As a result, many innovators are reluctant to invest in green financing ventures. Therefore, it is crucial

to establish a well-defined framework of rules and regulations in order to stimulate the attention of investors in the field of green finance.

5. There are several obstacles to obtaining financial resources for green finance, including technology-related hazards, currency concerns, and off-taker risk.
6. Insufficient and asymmetric understanding to investors of unusual financial mechanisms poses obstacles to green funding.
7. The absence of an effective framework for evaluating sustainable initiatives, particularly in the context of early-stage innovation, poses a barrier in directing money toward green ventures.
8. The achievement of successful implementation relies on the enhancement of infrastructure for green financing, which is essential for facilitating the growth of the market.

## 6. Conclusion

Given the concerning rise in pollution levels in India, it is crucial to use the unexplored capacity of green finance to fund environmentally friendly initiatives or investments. Blended financing is necessary to decrease the total capital cost for private investors. The Council on Energy, Environment, and Water (CEEW) states that the government needs about INR 162.5 lakh crores (USD 2.5 trillion) by 2030 and investments totaling \$10 trillion to accomplish a net-zero objective by 2070. These investments will aid in the reduction of carbon emissions in India's electricity, industrial, and transport sectors. According to the CEEW, India's net-zero aim might result in a substantial investment deficit of \$3.5 trillion. While public finance has been crucial in boosting green finance flows, more participation from the private sector is necessary to address the existing gap. In order to do this, it is necessary for public finance to take on a greater role in mobilizing private money. According to the World Economic Forum's study (2021), India's greenhouse gas emissions are primarily caused by five key sectors: energy, transportation, industry, infrastructure & cities, and agriculture. These sectors together account for over 90% of India's emissions. In order for India to effectively tackle these key aspects as part of its transition towards sustainability, it would need the establishment of a stable legislative framework that facilitates the implementation of large-scale green financing.

Because of the perceived investment risks, technology risks, high cost of debt, low operational costs, lack of awareness, lack of a proper regulatory framework, and short tenure of loans, green bonds and other tools of green financing in our country do not have a competitive advantage when compared to conventional forms of energy. This is due to the fact that there is a lack of awareness. It is essential that the regulatory policy be open and more accommodating in order to foster a sense of trust and confidence among investors. India should prioritize attracting both local and global businesses. The design of green financing products should be tailored to appeal to both domestic and global investors. In addition to making direct investments in sustainable development, banks must also use their indirect power over investment and management choices to exert influence on businesses, ensuring that they achieve wider social and environmental objectives (Hart and Ahuja 1996). A comprehensive and cohesive strategy is needed to address taxonomy, green rules, financial products, and the delineation of responsibilities between the private and public sectors, as well as between bankers and asset managers. This will incentivize measures to synchronize the financial system with green finance and thus bolster the sustainable development of the nation.

## Suggestions

1. The government should establish a consistent and reliable policy framework for green financing that motivates the private sector to fund programs aimed at promoting sustainable development. India has just introduced its National Voluntary Guidelines for Responsible Financing, with a primary emphasis on information transparency.
2. Through the use of an index, the environmental performance of the enterprises may be shown with precision. There are four environmental, social, and governance (ESG) indexes in India; however, there should be more ESG indexes in India to demonstrate how well corporations impact the environment. Additionally, there need to be green rating agencies existing inside the nation.
3. Government intervention is necessary to enhance the profitability of green initiatives. The cost of green initiatives may be reduced by providing tax exemption, subsidies, and concessional loans. Another approach is to implement more taxation and decrease subsidies for polluting sectors, thus raising the costs associated with these industries.
4. There must to be a system that evaluates projects and businesses, among other things, in relation to the risks associated with environmental, social, and governance (ESG) factors. The primary goal should be to prioritize and place more attention on environmental risk.
5. Medium, small, and micro firms provide 45% of the total output. MSMEs have significant potential to adopt energy-efficient technologies, resulting in reduced greenhouse gas emissions and the generation of renewable energy from sustainable sources. While SIDBI and SBI in India now provide financial assistance to small-scale enterprises for adopting energy-efficient technologies, it is necessary to allocate more cash for this purpose.



6. Investor and consumer awareness about green finance is crucial for the long-term viability of the economy. Conferences, newspaper reports, and seminars are effective means of disseminating information on the importance of green goods and energy-efficient technology for the benefit of future generations. This is because socially responsible consumers drive the demand for green products.
7. The SEBI disclosure rules for green bonds and securities represent an important first measure in assisting India in establishing long-term sustainable investments and promoting green finance, while they do not sufficiently address all aspects of the issue. Next, it is crucial to develop a thorough set of standards for designating "green" assets that align with international frameworks. This will address the immediate need in the market for maintaining consistent definitions, establishing standards, and ensuring comparability, which are crucial for issuers, investors, and relevant public policy initiatives.

## References

- Ansari, M. K., & Anand, Y. (2022). Green Finance in India: Trend and Challenges. *Hans Shodh Sudha*, 2(4), 43-50.
- Bhatnagar, M., Taneja, S., & Özen, E. (2022). A wave of green start-ups in India—The study of green finance as a support system for sustainable entrepreneurship. *Green Finance*, 4(2), 253-273.
- Bisht, P. GREEN FINANCE: REFORMS, OPPORTUNITY & SCOPE FOR SUSTAINABLE DEVELOPMENT IN INDIA. *"Innovative Trends in Business, Trade and Commerce: Challenges and Opportunities"*, 88.
- Carroll A.B. (1979): A three-dimensional conceptual model of corporate performance. *Academy of Management Review*, 4: 497–505.
- Charles, G., & Philip, B. (2020). Green finance: Recent drifts, confrontation and prospect opportunities for sustainable development in India. *Mukt Shabd Journal*, 9(4), 1854-1865.
- Cochu, A., Glenting, C., Hogg, D., Georgiev, I., Skolina, J., Eisinger, F., Chowdhury, T. (2016). Study on the potential of green bond finance for resource-efficient investments. European Commission.
- Dhoot, P., & Awate, S. (2021). Green Financing: An emerging form of sustainable development in India. *Vidyabharati International Interdisciplinary Research Journal*, 12(2), 698-712.
- Gupta, V., & Chaddha, S. (2023). Fostering Green Finance towards Sustainable Development Practices in India.
- Hart S.L., Ahuja G. (1996): Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business Strategy and the Environment*, 5: 30–37.
- Jha, B. Bakhshi, P. (2019). Green Finance: Fostering Sustainable Development in India. *International Journal of Recent Technology and Engineering (IJRTE)*, 8(4). ISSN: 2277-3878.
- Keerthi, B. S. (2013). A study on emerging green finance in India: Its challenges and Opportunities. *International Journal of Management and Social Sciences Research*, 2(2), 49-53.
- Khanna, N., Purkayastha, D., & Jain, S. (2022). Landscape of green finance in India. *Climate Policy Initiative. Available via CPI*. <https://www.climatepolicyinitiative.org/wp-content/uploads/2022/08/Landscape-of-Green-Finance-in-India-2022-Full-Report.pdf>.
- KPMG. (2023). Framework on green deposits and its use for green activities. Retrieved from KPMG
- Koo J.H. (2010): The Current Status and Future of Green Finance. Finance VIP series 2010-01, Korea Institute of Finance.
- Nagarajan, P. &. (2014). Green finance for sustainable green economic growth in India. *Agric. Econ – Czech*, 35–44.
- Neetu Sharma, M. S. (2015). "A study on customer's awareness on Green Banking initiatives in selected public and private sector banks with special reference to Mumbai". *IOSR Journal of Economics and Finance (IOSR-JEF)*, 28-35.
- Nenavath, S., & Mishra, S. (2023). Impact of green finance and fintech on sustainable economic growth: Empirical evidence from India. *Heliyon*, 9(5).
- Noh H.J. (2010a): Financial Strategy to Accelerate Innovation for Green Growth. Korea Capital Market Institute.

Soundarrajan, P., & Vivek, N. (2016). Green finance for sustainable green economic growth in India. *Agricultural Economics/Zemědělská Ekonomika*, 62(1).

Goel, P. (2016). Green Finance: A Step Towards Sustainable Financial System. *Abhinav International Monthly Refereed Journal of Research in Management & Technology*, 22-31. <https://bfsi.economicstimes.indiatimes.com/budget/union-budget-2023/budget-2023-analysis-of-green-finance-and-roadmap-ahead/97469374>

National Action Plan on Climate Change (NAPCC) Ministry of Environment, Forest and Climate Change) December 01, 2021

[Reserve Bank of India - RBI Bulletin](#)

[UNION BUDGET 2015-2016 \(indiabudget.gov.in\)](#)

[SEBI | Annual Report 2022-23](#)

[English Releases \(pib.gov.in\)](#)

