



Financial Footprints: Building Resilience for a Green Future"

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ABSTRACT :

Integrating environmental considerations into financial decision-making is crucial for the sustainable development of a country. Green growth focuses on ensuring that natural resources can realise their full economic potential on a sustainable basis. Green financing is a form of financial support for projects that deal with environmental protection, mitigating the effects of climate change, investing in renewable energy sources, increasing green spaces and all other projects related to sustainable development. The concept of green jobs, green buildings and other green projects is also part of green financing that will contribute to the economic development of the country. In this paper, an attempt is made to describe the marathon approach of green finance for climate resilience of Indian economy. This paper focuses on various green finance products and services offered by financial institutions and the future scope of such initiatives in the Indian context.

KEYWORDS Environment, Green Growth, Green building, Green finance, Green projects

Introduction:

Green Finance is the subset of Sustainable Finance. It is a diversified term that typically refers to financial investments flowing into sustainable development initiatives, environmental initiatives and policies that promote the better development of society. It alludes to the rise in cash inflows from the public and commercial sectors supporting sustainable development and environmentally friendly development agendas. Though there are many challenges in its path, it's very important to work on it for the economy as it aids in achieving a balanced goal of environmental benefits along with economic growth. Green finance tools, such as green bonds, green banks, carbon financing, etc., are sources of green money. . In this paper, we will see the recent trends and the future prospects of development of green finance in India.

Objectives of the study:

- The purpose of the study is to identify the recent trends of green finance in India .
- Exploring the various challenges in India's green financing

Research Methodology:

The study is based on the secondary data available and collected from various reports, articles, and other references and academic databases available on Google and internet explorer.

What green finance

Green finance also called as 'environmental finance' refers to the course of financial flow towards green activities. It refers to the increment in money flow towards sustainable activities that helps to achieve dual goal policy: economic as well as environment goal. Though green finance and sustainable finance are similar, they are different

Why is green finance

India is among the countries most affected by the impacts of extreme weather events. As the world's most populous country, with nearly 1.4 billion inhabitants, the carbon intensity of India's economy has a direct impact on global emissions, and thus, on climate change. In 2021, India's greenhouse gas emissions (GHG) amounted to some 3.9 billion carbon dioxide (CO₂)-equivalent tonnes, making it the world's third largest emitter, behind China and the United States, although GHG emissions per capita were only 2.8 CO₂-equivalent tonnes, compared to a world average of 6.9 and 17.5 in the United States. With the foray of the Government of India into the green

bond market, we can look forward to more investments in green and climate-friendly projects and activities that will contribute towards India's transition towards green, resilient, and inclusive development

Review of literature:

Keerthi B.S. (2013), the researcher examines current trends and potential future directions in green financing within India's developing market. This essay also discusses a few green initiatives and the significance of implementing green finance in India.

Ms. Neetu Sharma (2015) attempted to determine the degree of consumer knowledge regarding green finance and green finance products. This study also focused on the green finance initiatives implemented by banks in the private sector. The study's findings indicate that consumers are aware of the green finance initiative program.

Priyanka Goel(2016) The top-ranking governmental and private sectors in India's green finance projects were examined in this article, along with a discussion of the green goods and services that are offered there. The study discovered that Indian commercial banks are encouraging their clients to choose green housing by providing them with a range of green financial solutions, such as low-interest Green Home Bank loans.

Md. Sabuj Hoshen (2017) In this paper the researcher examined how green funds were distributed among different green initiatives in Bangladesh's banks and non-banking sector in this report. In addition to examining the Bangladesh Bank Refinance Scheme for green products, the study examined the current green finance initiatives and how direct and indirect funds are disbursed in this area.

Sharif Mohd. and Vijay Kumar Kaushal (2018) study titled 'Green Finance; A step towards sustainable development' states that India has a great potential to create green infrastructure required for green finance by removing obstacles and raising corporate citizens' awareness of more sustainable development. The primary goal of the study was to increase green financing at the local level across the country. Gatherings from readily available secondary sources were part of the research. The study came to the conclusion that green finance has become an international issue in sustainable and financial development.

Prerana Sharma, Arup Roy (2021) study illustrated India's current situation with regard to green financial products. The study emphasizes how India might benefit from the introduction of more green financial products. The findings show that Indian banks actively offer green financial products. By adapting their processes and adhering to International Sustainable Finance Initiatives, stock exchanges in India are also demonstrating their implementation of green finance.

Source of Green Finance:

1. Green Bonds – It is a green fixed instrument that is raised for green or say, sustainable activity. Sometimes, they are also referred as “climate bonds”. They may carry some tax incentives with them such as tax exemptions, tax credits, etc. The major issuer of green bonds is World Bank and it issued nearly \$ 14.4 billion of bonds through 2008-2020.
2. Sustainable equity – Homeowners and businesses can take the benefit of this type financing. Solar power is the most common type of example for this. By setting up solar panels on your home, you can receive tax credits or cash payments in return for the power generated by your solar panels. T
3. Green Credit Cards - Waste Management powers its green finance through green credit cards, which earn additional rewards for green financing for every dollar spent with Waste Management.
4. Solar Investment Trusts (SEITs) – It's an instrument that is framed for aiding small scale rooftop solar developers to raise capital at lower cost. It is similar to mutual funds.
5. Sustainable Energy Bonds (SEBs) – These are the green finance instruments that can aid in transforming the economy to sustainable by offering debt exposure, sufficient returns, and standardized measures for impact investors.
6. **6.Green Insurance** :green insurance (often referred to as eco-friendly insurance) can be outlined as insurance that not only covers people in the event of injury or damage, but also contributes to protecting our environment. The insurance industry is a member of the Green financial family, and thus plays a key role in achieving the content of sustainability.
7. 4.Solar Investment Trusts (SEITs): These are financial instruments designed to help small rooftop solar developers raise money at a cheaper cost. Mutual funds are comparable to it.
5. Sustainable Energy Bonds (SEBs): These environmentally friendly financial products can help transition the economy to a sustainable one by providing impact investors with standardized measures, debt exposure, and appropriate rewards.
8. 6.Green insurance, often known as eco-friendly insurance, is defined as insurance that helps to preserve the environment in addition to providing coverage for individuals in the event of harm or injury. Since the insurance sector is a part of the Green financial family, it is essential to attaining sustainability.



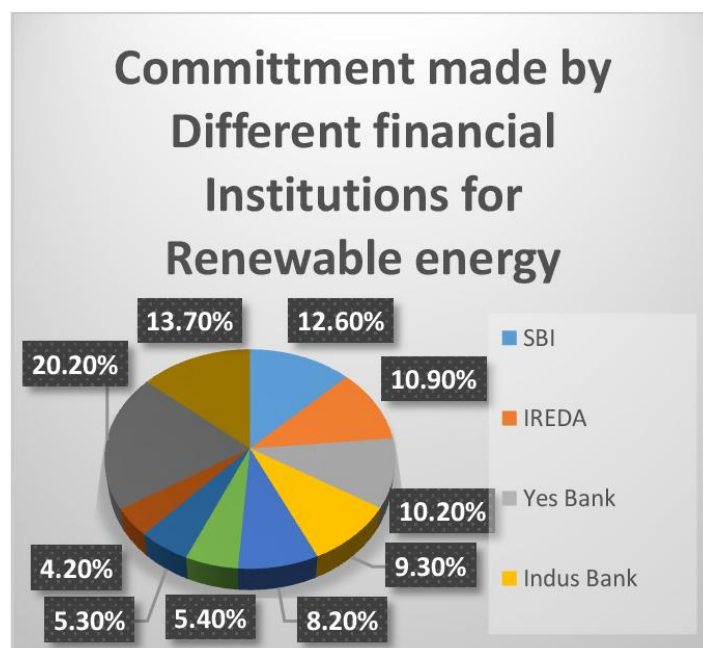
GREEN FINANCE AND INDIA

India has committed to reducing its emissions intensity by 33–35 percent below 2005 levels by 2030 and increasing the usage of renewable energy (RE) by 40 percent of installed electric power capacity by 2030 in order to meet its Nationally Determined Contributions goals. The Indian government estimates that in order to reach the targets for renewable energy and urban sustainability over the next ten years, approximately US\$ 4.50 trillion, or US\$ 450 million annually, will be needed.

The 2015 Union budget set a goal to reach 175 GW of renewable energy by 2022. Approximately \$2570 million in funding have been committed by various private and public banks as well as non-banking financial entities to support green initiatives.

Over the past four years, the total amount spent on green finance has climbed, and in 2019/2020, it reached a biennial average of INR 309 thousand crores, a 150% increase from the preceding two years. To reach net-zero by 2070, the Council on Energy, Environment, and Water (CEEW) estimates that investments over \$10 trillion will be required. According to the Climate Policy Initiative, in order to fulfil the aforementioned commitments, green money needs to rise by at least 3.5 times, or Rs. 11 lakh crores, yearly by 2030. Of the green money monitored in 2019/2020, the state sector contributed 43% (INR 133 thousand crores), while private players accounted for 57% (INR 175 thousand crores). Combined, commercial financial institutions and companies contributed over 69% of the total.

Below Figure reveals the funds committed by different financial institutions.



Source: [6] ADBI Working Paper Series, 2018

The sovereign green bonds showcase India's commitment to expanding renewable energy production and reducing its carbon intensity by supporting expenditures for renewable energy and electrification of transport systems.

By funding investments in renewable energy and the electrification of transportation infrastructure, India's sovereign green bonds demonstrate the country's commitment to increasing the output of renewable energy and lowering its carbon footprint. Investments in these areas are especially crucial as, as the economy expands, they will likely account for two thirds of India's greenhouse gas emissions by 2050, compared to 41% in 2019. Considering that coal now supplies 55% of India's energy needs, it is crucial to support the country's energy transformation process.

Renewable energy, energy-efficient construction, green buildings, sustainable water and waste management, climate change adaptation, and sustainable management of land and living natural resources are some other project areas that qualify for investment from the Sovereign Green Bond.

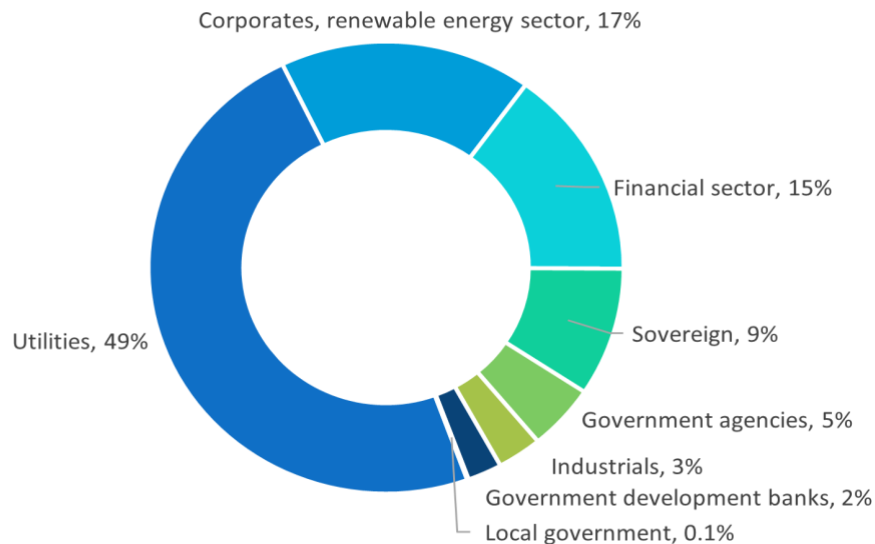


Figure - Green bond amounts issued in India by type of issuer. Source: World Bank with data from Bloomberg

Futuristic View

The Reserve Bank of India has established guidelines for banks and non-bank financial institutions (NBFCs) to take "green deposits" in light of the government's goal for sustainable development and the growing desire among investors and businesses to have strong sustainability credentials. The goal is to guarantee that funds are allocated for green buildings, sustainable water and waste management, clean transportation, energy efficiency, climate change adaptation, and the preservation of terrestrial and aquatic biodiversity.

An ESG mutual fund category was established by the Securities and Exchange Board of India (SEBI). India's asset management firms can now introduce many ESG funds, and as the quality of reporting on these metrics increases, investor confidence will rise due to the enhanced rigor and openness. As the private sector adopts internal carbon pricing and encourages investment in green technologies and solutions, it is equally critical to watch for government action on green financing, such as tax breaks for low-carbon technologies, policy pushes for green financing instruments, etc.

The Economic Affairs Secretary and the Minister of Finance announced in Budget 2023 the introduction of sovereign green bonds, which will be long-term, rupee-denominated securities issued to raise funds for green infrastructure.

Green bonds are issued by corporations, intergovernmental organizations, and sovereign entities with the intention of using the bond profits for ecologically friendly initiatives. India began issuing green bonds in 2015, and as of February 12, 2020, there were \$16.3 billion worth of outstanding bonds in India. Since January 1, 2018, India has issued around US\$8 billion in green bonds, or 0.7% of all bonds issued in the Indian financial market. On January 25, 2023, the

According to the Environment Ministry, India will need USD 2.5 trillion to adapt to environmental change. Of this, USD 280 billion will be needed for the green foundation alone during the next five years (2021–2026).

India released the first tranche of its first sovereign green bond, valued at INR 80 billion (or \$980 million), on January 25, 2023. The Indian government announced on February 9, 2023, that it would be issuing another batch of sovereign green bonds for INR 80 billion (\$968 million).

Sovereign Green Bonds were first issued in 2023, and the government has since raised ₹16,000 crore. The proceeds of these bonds have been distributed to various ministries and departments, including those dealing with new and renewable energy, the environment, forests and climate change, housing and urban affairs, and railways. The government has chosen to issue Sovereign Green Bonds to raise ₹ 20,000 crore in FY 2023–2024

The Roadmap ahead:

If India is to meet the Panchamrit aim, the Government must increase its forecasts for green money. In order to attain net zero emissions by 2070, India will require around Rs. 716 lakh crore and Rs. 162.5 lakh crore till 2030 for NCD's

Private Sector Involvement: Although public finance has been a major factor in the growth of green finance flows, more private sector involvement is needed. In order to accomplish this, public finance must mobilize private capital more and more. Additionally, international finance must do more to directly support India's green transition and to mobilize private capital through DFIs, charity, and other means.

2 Less financial concentration: In addition, even while there has been a growth in overall finance flows to mitigation sectors, most of these flows are still concentrated in a few chosen sectors with more developed markets. To encourage earlier-maturity industries like EVs and decentralized energy sources, more investment and governmental assistance are needed.

3 Establishing a strong government policy:

Enabling green finance at scale requires a robust policy framework. With the government working to improve the green investment framework and promote green investments, it seems that green finance investments are responding to the policy environment. Several policy concerns could be viewed as crucial levers for achieving more impact, including:

A methodology for classifying investments that can be considered environmentally sustainable is known as a "green taxonomy."

b. Implementing a comprehensive domestic Measurement, Reporting, and Verification (MRV) system; c. Organizing policy interventions aimed at advancing technology and mainstreaming supply chains to hasten investment and uptake in underperforming priority sectors like decentralized energy sources and electric vehicles.

4. Coordinated access, reporting, and data gathering efforts

To boost green investment, accurate data is essential. This might be accomplished by strengthening data accessibility and disclosure regulations, which would lessen information asymmetry. Enhancing the volume and accessibility of green finance information will facilitate the identification of prospects and draw funds designated for environmentally conscious investments.

5. Financial flows for adaption must be accelerated.

Given that India is among the nations most susceptible to climate change, funding for the adaptation sector is desperately needed. In FY 2020, tracked finance for the sector was INR 37 thousand crores (USD 5 billion), a significant shortfall of what was needed. Increasing financial flows to the industry requires planning, cooperation, and the creation of state-level adaptation investment plans.

Conclusion:

Ever since the government promised to attain net zero emissions by 2070 at the Glasgow-hosted COP26 conference, the term "green finance" has gained popularity. Furthermore, the government unveiled the "Panchamrit," a five-pronged commitment that seeks to cut carbon intensity to 45% and produce 500 GW of energy from non-fossil sources by 2030. In addition, the government pledged to reduce estimated carbon emissions by 1 billion tonnes by 2030. Green financing is the unrestricted flow of funds to environmentally friendly endeavors. It is the cornerstone of the green economy. Although there is a substantial flow of green capital into India, it is still insufficient. It is imperative to boost the flow of green funding in order to meet the NDC target. There are many different sources of green funding accessible in India; all that is needed is for the public to become more aware of them, and for the government to take action to remove the largest obstacle to date—the absence of a green taxonomy. Even while the private sector contributes positively to green finance flows, there is still room for improvement if we are to meet our goals.

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