

Challenges and Prospects of Green Finance in India

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ABSTRACT

Human being is the extension of the nature. But due to greed and selfishness the human created a great loss to the environment and nature. In the mad race of urbanisation, mass production and total negligence the humans caused many types of problems like air pollution, water pollution, land degradation, ozone layer depletion, ocean pollution, plastic related issues and loss of biodiversity. India is amongst the top four biggest economy of the world. There is great opportunities for many products. No surprise India is the leading manufacturing hub. But with this there is great opportunity for protecting the environment by encouraging eco-friendly projects, green product and discourage the product and process that creates pollution and deplete the environment. In this background, there is great possibility for Green Finance by the public and private sector. There are various banks like SBI, ICICI, HDFC and many more which are encouraging eco friendly products and process to make the world better place of live for future generation. Govt should start giving more subsidies and frame strict legislation for protecting the environment. This paper aimed to study the current scenario of Green Finance and the challenges faced and future opportunities in the area of Green Finance in India. In the mad race of development there is enough damaged has being done to the nature, by Green financing which encourages eco-friendly production process and product the environment can be protected to a great extent.

Keywords: Green Finance, Sustainable Development, Green Bank, Green Infrastructure, Green building, Circular economy, Green Insurance. Green Washing.

Objectives:

- ✓ To study the landscape of Green Finance in India.
- ✓ To explore scope of Green Finance in India.
- ✓ To study the challenges in the context of Green Finance in India.
- ✓ To explore future prospects of Green Finance in India.

Research Methodology: The current research paper is a descriptive research based on secondary data. The relevant data is taken from renowned journals, books, articles and websites.

INTRODUCTION

Green Finance means financial investment or loans or other products for environmentally positive or environmentally sustainable projects or products or activity. The Green Finance includes financing environment friendly projects like renewable energy, pollution control, energy efficiency, clean transportation, green packaging, plastic substitution projects, waste management, sustainable agriculture and many more.

The journey of mankind from ancient to modern era is very interesting. The journey starts from hunter age to agriculture to early civilisation to ultimately modern industrialisation. In every stage of development phase of mankind, the lust to earn more increases, which resulted neglecting the god nature; this neglectation of nature continued for centuries and now the time has come to think and implement environmentally friendly projects

as early as possible. In the light of this the need to finance such environmentally friendly projects energises. Such finances which fulfil the need of any eco-friendly production process or product or product which replaces plastic or harmful chemical which results in pollution is called as Green Finance.

(TOI, n.d.) India is the Fourth largest economy in the world. With the huge population base future is bright for the manufacturing sector in India. But to produce more human already damaged the environment a lot. But at the same time, it is an opportunity to produce more with such production techniques which is environment friendly, sustainable and causing less pollution.

(Borad, n.d.) Closely associated with the Green Finance is the concept of Green Banks. Green Banks are the financial institution that finance eco friendly projects and clean energy. However, in India there are no special bank as Green Bank, but there are various leading public sector and private sector banks which adopts the green banking practices, these banks include SBI – Green Bond, ICICI Bank-Renewable energy projects, HDFC Banks- financing solar energy, Parivartan initiative, Bank of Baroda Green loan. Some of the Small Finance and Non-Banking Financial Institutions are also involved in green financing activities.

There are various initiatives taken by the government in Green Finance. But the Govt should take stringent action against Green Washing. Green Washing is deceptive practice or claims by various companies claiming the product is eco-friendly but in actually it is not.

Green Finance and Sustainable Development:

Many times, the term Green Finance is used interchangeable with Sustainable Development. But there is slight difference between these two concepts. Sustainable development is a broad concept to Green Finance. Green Finance is a financial mechanism that focuses only funding on environmentally friendly projects. But Sustainable development is a broader concept which includes economic growth, social justice and environmental protection. So Sustainable development stress development with importance to environment and development with the resources availability to meet the requirement of future generation. In other words, Green Finance includes only financial instruments and investment for eco- friendly projects. But Sustainable development is development philosophy that focuses environment, economy and society.

Key areas of Green Finances in India:

In our country, there are various areas of Green Finance, it includes-

- **Sustainable Agriculture:**

Sustainable agriculture means a method of farming which fulfils the society's need for food and textile but at the same time it protects the environment and resource for the future generation. The Green Finance in the field of agriculture includes providing loans to organic farming, climate smart practices, and natural fertilisers and organic pesticides. Sustainable agriculture is important because agriculture contributes one third of the total global Green House gases emission. So Green finance for sustainable agriculture is needed.

- **Renewable Energy:**

Green finance in Renewable energy includes, financing projects like Solar Energy, Wind Energy, Biofuel. There are various projects and targets of the Govt regarding Renewable energy.

- **Waste Management:**

India generates 62 million Tonnes of waste in a year, out of this only 70% is collected and less than 20% is treated the rest waste creates lots of health-related problems causing many diseases. For such a huge waste proper management recycling plants, sustainable packaging should be encouraged. Also, the industries should adopt reuse and recycle policy rigidly.

- **Clean Transportation:**

(icct, n.d.) Transportation in India is one of the major contributors of air pollution. In urban area about 40% of the air pollution is the result of transportation. Thus, in order to reduce this pollution Clean Transportation is needed. Clean Transportation means use of E-vehicles and upgradation of public transportation system; this will improve the air quality in urban areas.

- **Green Infrastructure:**

Green Infrastructure means the network of natural and semi natural that provide environmental, economical and social benefits by integrating urban and rural planning. It includes urban parks, roof garden, wetland and rivers, street trees etc.

Green Building and Circular Economy:

The terms green building and Circular economy are very widely used in the context of eco-friendly production. A green building is a structure designed, constructed, and operated to minimize environmental impact while enhancing the health and well-being of its occupants. It integrates sustainable practices in energy use, water management, materials, and design. Green building is characterised by use of renewable energy, water efficiency and conservation, sustainable products and materials and waste reduction. India ranks among the top 3 countries globally for green building projects. GBC (Indian Green Building Council) and GRIHA (Green Rating for Integrated Habitat Assessment) certify green buildings. Examples of Green building in India includes Infosys, ITC and many Govt offices.

The circular economy is an economic system designed to eliminate waste and keep resources in use for as long as possible. Instead of the traditional “take–make–dispose” linear model, it focuses on reuse, repair, recycling, and regeneration to create a closed-loop system that benefits the environment, society, and economy. Recycling & Upcycling → Turning waste into new products (e.g., recycled plastics into textiles).

In India the circular economy is in the form of Plastic Waste Management Rules → Promote recycling and Extended Producer Responsibility (EPR), E-Waste Rules → Mandate collection and recycling of electronic waste, Swachh Bharat Mission → Encourages waste segregation and recycling, Industry Initiatives: Companies like Tata, ITC, and Infosys are adopting circular practices in packaging, energy, and resource use.

Green Finance Initiatives in India:

- **PM Surya Ghar Yojana:**

PM Surya Ghar Yojana was launched in 2024. This scheme provides free electricity to (up to 300 units per month) by installing rooftop solar panels. The target is to reach up to 1 crore household in India. There are various benefits of this schemes like the poor gets free electricity up to 300 units, Govt provide subsidy to install rooftop panels, and this scheme helps in employment generation in the solar panel manufacturing, installation and maintenance. This scheme is economically, environmentally and socially beneficial in short and long term.

(pib.gov.in, n.d.) This scheme till 2025 crossed 10 lakh users. Gujarat State is leading (41%) as far as number of beneficiaries of PM Ghar Yojana followed by Maharashtra with 21%

- **FAME (Faster Adoption & Manufacturing of Hybrid and Electric Vehicle):**

This scheme was launched in 2015 under the National Electricity Mobility Mission Plan. This programme aimed at accelerating the adoption of electric and hybrid vehicles by providing subsidies and supporting the facility of installing and maintaining charging stations. (pib, n.d.) The first phase was between 2015 to 2019, with the total budget of 895 crore. The phase II started from 2019 to 2024, it was extended to 2025, with the budget of 10,000 crore; covering 7000 e-buses, 5 lakh two wheelers, 55,000 e-four wheelers and 10 lakh two e-wheelers.

- **National Green Hydrogen Mission:**

(pib.gov.in, n.d.) The Union Cabinet approved the National Green Hydrogen Mission on 4th January 2023, with an outlay of ₹ 19,744 crore. It is a unique initiative by the Govt to make India a global hub for the manufacturing, use and export of green hydrogen with a target of producing 5 million metric tonnes annually by 2030. The Green Hydrogen production capacity envisaged by 2030 is likely to leverage over ₹8 lakh crore in total investments in the Green Hydrogen industry. This investment is estimated to create 6,00,000 jobs by 2030.

- **Perform, Achieve and Trade Scheme (PAT):**

(BEEI, n.d.) market-based mechanism to improve energy efficiency in energy-intensive industries by setting reduction targets and allowing trading of excess savings. It is launched in 2012 under the National Mission on Enhanced Energy Efficiency (NMEEE).

The implementing Agency of this policy is Bureau of Energy Efficiency (BEE), Ministry of Power. The objective of PAT is to reduce Specific Energy Consumption (SEC) (energy used per unit of production) in designated industries, while creating a market for trading surplus energy savings.

- **Green Bonds and loans:**

(Sustainable Bonds, 2024), Green bonds and loans in India are financial instruments designed to fund environmentally sustainable projects, and the market has grown rapidly—reaching over USD 55.9 billion in cumulative issuance by 2024. Green Bonds: Debt securities issued to raise funds for projects with environmental benefits (renewable energy, clean transport, sustainable water management, etc.). Green Loans: Similar to bonds but structured as loans, often with sustainability-linked terms (e.g., interest rate reductions if environmental targets are met).

Both fall under the umbrella of Green Finance, which supports India's transition to a low-carbon economy.

Green Finance in Rural and Urban India:

(initiative, n.d.) Green finance in India plays a crucial role in supporting sustainable development across both rural and urban areas, but the priorities differ: rural regions focus on renewable energy access and agriculture, while urban areas emphasize clean transport, infrastructure, and energy efficiency.

In Rural area, there are different initiatives taken by the Govt in renewable energy i.e. financing for solar home systems, microgrids, and biogas plants to provide clean electricity in villages. The second area is in the form of Sustainable Agriculture, loans provided for organic farming, drip irrigation, and climate-resilient crops and many more like solar pumps etc.

Water & Waste Management: Investments in rainwater harvesting, wastewater treatment, and rural sanitation projects. Similarly, **Microfinance & Cooperatives** are effective for Green financing, rural banks and cooperatives are increasingly offering green loans for small-scale farmers and entrepreneurs. It will make the marginal farmer to use finance for green small projects.

Similarly in Urban areas the Clean Transport i.e. to finance for electric vehicles, metro rail systems, and sustainable urban mobility. Another way is **Green Buildings:** Loans and bonds for energy-efficient housing, smart grids, and retrofitting old infrastructure. Similarly proper Waste Management & Recycling is needed, it can be done by Urban projects for solid waste segregation, recycling plants, and circular economy initiatives. With this the Industrial Energy Efficiency is also very useful i.e., PAT scheme and green loans for industries to reduce carbon emissions.

Challenges related to Green Finance in India:

Although Green Finance is a very handy tool for the eco-friendly production process and product but it faces many challenges.

In rural areas there is specific challenges in the form of limited awareness, lack of collateral for loans, and difficulty in scaling projects.

In the urban areas there are some challenges of different flavours like Regulatory hurdles, risk of “greenwashing,” i.e fooling the Govt by claiming various products are eco-friendly and high upfront costs for infrastructure.

India needs stronger frameworks to ensure transparency, monitoring, and equitable distribution of green finance. With the will of the Govt and activeness participation of the citizens is needed to make Green Finance more successful.

CONCLUSION

Due to urbanisation and commercial mass production the environment is severely affected. The Government is taking different initiatives for eco-friendly manufacturing process and clean and green energy & clean transportation. However more awareness, Govt action and peoples and banks active participation is needed to make the Green Finance more effective.

Suggestions:

It is true that economic activities, profit making and wealth creation are important but not at the cost of environment depletion. Both development and environment are essential for the society and future generation. Govt has taken many actions for Green Finance. The joint efforts of all the local authorities, State Govt and NGO are needed in this regard. There should be separate strategies should be framed for rural and urban areas. More concessional loans and subsidy should be granted for rain water harvesting, Public Transport companies, plastic substituting products. More aggressive efforts with active participation of people & industries are needed to make Green Financing more effective.

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