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RESEARCH ARTICLE

THE TRENDS AND CHALLENGES OF GREEN FINANCE IN INDIA

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ABSTRACT

The term "sustainable finance" refers to the use of financial resources to support socially, economically, and environmentally significant enterprises. This includes "low-carbon finance," "green finance," and "climate finance." The achievement of "low carbon, green growth" depends heavily on green finance. It is essential in establishing connections between the financial sector, environmental enhancement, and economic progress. The Indian economy has traditionally found it difficult to finance such environmentally significant projects, particularly the capital needed to achieve the production of 175 gigawatts of renewable energy by 2024. The funding of renewable energy projects has traditionally been hampered in India by issues including high capital costs, inadequate debt financing, and short loan maturities. The work is broken up into several portions. It first emphasises the significance of green finance. The Indian economy and government's different initiatives in this regard are covered in the second part. Section three further discusses the several issues facing the Indian economy. Concluding observations about the future of India's economy and its green investments are given in the final part.

INTRODUCTION

The environment is greatly threatened by climate change, primarily as a result of the overuse of fossil fuels. Fossil fuel consumption at current rates is expected to raise global temperatures by 4 to 6 degrees Celsius above pre-industrial levels (pre-industrial levels are defined as the years prior to the industrial revolution, roughly equivalent to the 19th century when the first signs of climate change appeared). This will have a negative impact on food production, human health, and possibly even the survival of certain communities and biodiversity as a whole. The Sustainable Development Goals (SDGs) and the Paris Agreement, which was adopted in 2015, both state that global warming should be well below 2 degrees Celsius and that nations should work to keep the increase to 1.5 degrees Celsius relative to pre-industrial levels. As a result, many governments have begun to take this issue more seriously. A significant issue that still exists in the world economy is the low rate of investment. Many high-income countries' economies and central banks attempted to boost income, expenditure, and employment following the 2008 global financial crisis, mostly by decreasing interest rates. To some extent, this tactic worked. However, there is still an issue with the sharp decline in interest rates, namely that investors primarily borrow money at lower interest rates for speculative purposes. This ultimately resulted in a general decline in investment quality.

The growth in long-term investments for environmentally beneficial and green initiatives was and still is necessary. Given the accompanying risks and low rate of return, the private sector has traditionally been reluctant to provide such long-term funding, and in most countries, the public sector has not been able to afford it. In every economy, three main sources are used to finance these kinds of green projects:

- Domestic public finance: Money given out straight by a nation's government.
- International public finance: Money given by global development banks and international organisations.
- Finance from the private sector: Money from both local and foreign business companies.

In contrast to conventional energy sources, where the Central and State governments own two third of the business, India's renewable energy sector is predominantly held by the private sector. Given the uncertainty in the business sector, this makes financing such projects more difficult. Therefore, the definition of "green finance" is "the financial sector's strategic alignment to support projects aimed at achieving low carbon emissions, climate change mitigation, renewable energy advancement, efficient resource use, and ultimately, a greener economy overall."

The financial sector, economic expansion, and environmental enhancement are the three main pillars of green financing. In keeping with the Sustainable Development Goals and the Paris Agreement, such green initiatives can promote energy security and self-sufficiency in addition to lowering carbon emissions.

INDIA'S GREEN FINANCE INITIATIVES

The International Solar Alliance (ISA), which was signed by the governments of France and India on December 1, 2015, was the first significant move in this direction taken by the Indian government. The ISA's goal was to address climate concerns by enlisting the support of other nations in this endeavour. Given the rising energy demand brought on by India's rapid industrialization, urbanization, and high economic growth, financing for green projects becomes increasingly important. To increase the necessary funding for such rising production and consumption, the nation also introduced initiatives like "Make in India" and other Smart City Projects. By 2040, there will be 600 million more energy users in India, which is predicted to result in a significant rise in the country's electricity demand (International Energy Agency, IEA 2015). For the purpose of funding these kinds of green and renewable energy projects, the Indian government currently mostly relies on debt finance. India is expected to need \$4.5 trillion in infrastructure financing by 2040, primarily for electric vehicles, green housing, and meeting national renewable energy targets, according to the report of the "Task Force for Creating National Infrastructure Pipeline."

Since its formation in 2006, the Ministry of New and Renewable Energy (MNRE) has been in charge of projects including intellectual property protection, research and development, and the coordination and promotion of renewable energy sources. In the Indian context of financing renewable energy, there are three main incentive schemes: generation-based incentive (GBI), viability gap finance (VGF), and accelerated depreciation (AD). For the project developers, accelerated depreciation provides a tax-based benefit. It was first introduced in 2009, primarily for wind projects, and was stopped in 2012. It was then brought back in 2014, primarily for solar power projects, and it is still driving investment fervour today. A one-time grant known as "viability gap funding" is given to infrastructure projects that are both economically and financially justifiable. These projects are essential to the growth of the economy as a whole (a bus route, for instance, must be established in a place without access to road transport), but they may not be profitable in the traditional sense. That is, the revenue generated by the project—in this case, the sale of tickets—may actually fall short of the costs associated with One prominent example of this incentive's application is the Solar Energy Corporation of India (SECI), which uses it to generate solar energy.

A generation-based incentive does not just concentrate on project setup; it also concentrates on the actual production of solar and wind energy. For every kWh of solar power generated, it offers an incentive of INR 2.00, and for every kWh of wind power generated, it offers an incentive of INR 0.50. Apart from these financial incentives, several other endeavours have been undertaken to create novel processes and establishments to expedite the production of clean and green energy in India.

Recognition of Priority Sector Lending (PSL): In April 2015, the Reserve Bank of India (RBI) designated the renewable energy and green finance sectors as 'Priority sectors'. The purpose of the action was to increase employability and the competitiveness of the Indian economy. According to the recommendations, banks were to set aside forty percent of their net credit or the amount equal to off-balance sheet exposure, whichever was higher, for the priority sectors, which included micro-hydel plants, street lighting systems, wind mills, solar power producers, and the like. Approximately in 2019, a favourable trend started to emerge in this direction. Prior to this year, the banks were not providing the necessary funding to this important industry. This was mostly brought about by the phrase "energy" being used to include "renewable energy," which led to a significant amount of funding going to the non-renewable energy sector. However, as of late, nationalised banks like as Bank of Baroda, Canara Bank, Central Bank of India, Punjab National Bank, and others have boosted their lending to housing, renewable energy, and education as priority sectors.

Green Banks: The Indian Renewable Energy Development Agency (IREDA), a Non-Banking Financial Company (NBFC), became a green bank in 2016, marking the first-ever step towards the establishment of a green bank in India. A "green bank" is an organisation that uses banking operations to support eco-friendly initiatives and lower carbon emissions. IREDA was founded to promote clean and green energy and to raise private sector funding for these kinds of initiatives. As a result, a number of other banks, including Union Bank and State Bank of India, have transformed into green banks. In order to support environmentally friendly projects, SBI gives long-term loans at discounted interest rates. Additionally, the company has introduced the "Green Home Loan Scheme," which offers loans at discounted rates for environmentally friendly residential developments. A initiative has been launched by Bank of Baroda to aid small and medium-sized firms (SMEs) in obtaining the equipment and techniques needed to improve energy conservation. Similarly, ICICI Bank has been able to supply the funding required for initiatives pertaining to clean technology, energy efficiency, and greenhouse gas emission reduction.

Green Bonds: Green bonds are fixed-income instruments that are issued with the intention of using the revenues to fund ecologically responsible projects. These bonds, like all other bonds, must obtain the necessary credit rating from rating organisations in order to be deemed financially feasible. In 2015, YES Bank introduced the country's first green bond. Then, in 2017, IREDA introduced its own 5-year green bonds, known as "Green Masala bonds." The International Securities Market (ISM) identified these bonds as the first ever. In September 2021, IndiaCorpLaw published a report stating that Indian corporations have raised around \$4.96 billion with these green bonds. In 2021, Ghaziabad Nagar Nigam emerged as the pioneer issuer of Green Municipal Bonds. According to the research, India has surpassed China as the second-largest emerging issuer of green bonds. Investor perception of risk is a key factor in the acceptability of such green bonds. In the Indian economy, more is needed in this area, including heightened investor knowledge, a standardised procedure, and profitable incentives for both issuers and investors.

Soft loans from IREDA: For a number of initiatives that prioritise the environment, IREDA provides loans at

discounted rates. It is financed by foreign banks as well as other organisations. The World Bank extended \$100 million to IREDA for the development and building of solar parks, while the European Investment Bank (EIB) approved a long-term loan of Euro 150 million for the purpose of financing renewable energy projects. Apart from offering soft loans, IREDA also performs an agency function by offering credit enhancement services, reducing energy expenses, and other similar activities. To promote green finance in our economy, IREDA has recently introduced a number of new policies and schemes, including "IREDA scheme for discounting of energy bills," "Loan against securitization of future cash flow of renewable energy projects," and "Bridge loan against generation-based incentive (GBI) scheme claims payable to renewable energy developers under Ministry of New and Renewable Energy (MNRE) scheme for GBI grid interactive wind and solar power projects." IREDA has effectively approved loans totaling INR 11,000 crore and issued loans totaling INR 8800 crores as of the financial year 2020–2021. (IREDA 2021)

Crowd funding: Crowd funding, which is essentially a group of individuals pooling their resources to participate in a particular project, has proven effective in raising the necessary capital from private investors in Western Europe and North America. Because more people are becoming aware of and using information and communication technology, it is also becoming quite popular in India (ICT). "Bettervest" and "SunFunder" have successfully raised the necessary funds for green initiatives in India. Bettervest is a community funding website situated in Germany. It has contributed to initiatives like "Boond Engineering" and "MeraGao Power" to boost the production and use of renewable energy in India's rural areas. Kenya-based SunFunder established the \$47 million "Beyond the Grid" (BTG) fund in 2017, with an emphasis on Sub-Saharan Africa, India, and the Pacific. This fund's objectives are to close the gap between the supply and demand for dependable energy and to give off-grid solar enterprises debt capital funding.

IMPLICATIONS ON THE INDIAN ECONOMY

The high cost of debt has always been a significant issue for the Indian economy. This reduces the profitability of investing in green projects for investors, especially when combined with the short loan terms. The disclosure requirement for the issuing of green bonds is a second ongoing problem. The Securities and Exchange Board of India (SEBI) does not specify anything specifically while listing the disclosure requirements for offer documents. It only specifies that "a brief description of such project(s) and/or asset(s) disbursed" must be included in the yearly reports (SEBI, 2017, p3). In order to be viable in the long run, these initiatives need a lot of money from many sources, thus a well-thought-out report is needed rather than a one-dimensional synopsis. Furthermore, without establishing any specific criteria for the same, SEBI has required the issuers to estimate "qualitative performance indicators and, where feasible, quantitative performance measures" (SEBI, 2017, p. 3). Because of this, there is an issue that makes it impossible to compare various projects due to the lack of standardisation and the use of a wide variety of indicators. One of the main issues facing our nation is the absence of an appropriate framework and policies that complement one another. The nation has enumerated several policies, agendas, and circulars pertaining to sustainability, renewable energy, and the environment, but

they are unrelated to one another. The Government of India (2012) on page 35 states that the main indicators of the 12th Five Year Plan for India "reflect the vision of rapid, sustainable and more inclusive growth." However, according to the environmental aims, India intends to cut emissions by 20 to 25 percent, expand its forest area by 1 million hectares year, and enhance its capacity for renewable energy by 30,000 Megawatts (Government of India, 2012, p35-36). However, the aforementioned environmental objectives do not define and include these quantitative requirements. As a result, this barrier has consistently prevented India's green finance industry from reaching its full potential. To operate as guidelines for the bond issuers, the Global Business Practices (GBP) outline the four primary elements of green financing: the process for project appraisal and selection, the use of revenues, the management of proceeds, and reporting. They require a proper and comprehensive legal definition of the entire procedure. Investors are led to question the legitimacy of green initiatives in our nation by SEBI, which only requires issuers to briefly describe the method in which funds are utilised. The problem of "greenwashing," which refers to the practice of making false claims about ecologically friendly projects and then profiting from them and similar environmentally beneficial items, is another important problem that still exists. Such operations have engaged several Indian government bodies and enterprises. When HCL said that it will stop using harmful poly vinyl chloride and brominated flame in the production of its computers as soon as it could get any commercially viable substitutes, the company was found guilty. Greenpeace, however, condemned the business for evading its obligations and responsibilities by making exaggerated claims and assurances, with no definitive plan in place for the use of environmentally friendly products (Insight, 2009).

CONCLUSION

It is imperative that emerging economies like India have access to green funding given the country's expanding population, rising energy consumption, rising pollution levels, and other environmental issues. The government must have a strategic perspective on green financing in India and concentrate on the long term. When compared to conventional energy sources, green bonds and other green financing instruments are less competitive in our nation due to perceived investment risks, technological risks, high debt costs, low operating costs, a lack of awareness, an inadequate regulatory framework, and short loan terms. To encourage both domestic and foreign investors to provide the necessary money, a more open and supportive governmental environment is required. Because it hasn't been able to reach and utilise its full potential, India's green finance sector has managed to escape any significant controversies or discoveries thus far. India still has a long way to go before developing a robust and self-sufficient green economy. India's economy will benefit greatly from a healthy and balanced mix of issuers, investors, and green investment projects, which will provide it the competitive advantage it needs for a sustainable and environmentally friendly future.

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