International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878 (Online), Volume-8 Issue-4, November 2019

Green Finance: Fostering Sustainable Development in India

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Abstract: ***Green finance plays a pivotal role in achieving inclusive, resilient and cleaner economic growth by creating environmental benefits. It helps in increasing the flow of finance from the public, private and nonprofit sectors to sustainable development priorities. Recognising the significance of green finance, UN Environment has been working in the alignment of the financial system of the countries to channelize the financial flows for attaining 2030 sustainable development goals. To build economic development in a sustainable manner, India also needs a national green finance strategy. It requires green infrastructure funding of about $4.5 trillion by 2040. The contribution made by both public and private sector organisations/banks will play a crucial role in green financing. The present study therefore mainly explores the various green financing initiatives taken by the public and private sector organisations/banks in India. The study showcases the various challenges in the area of green financing in India and also recommends measures to face those challenges. The study is descriptive in nature and is based on secondary data taken from various government reports published by the Government of India and other published reports of public and private sector organisations and banks in India.***

Keywords: Green Finance, Sustainable Development, Green Bonds, Green Initiatives, Green Investments.

I. INTRODUCTION

Sustainable development in alignment with economic growth is becoming a great challenge globally. With the increase in awareness about the environmentalism, it becomes essential for the finance sector to become concern about its role in handling environmental issues. As per IPCC, 2018, investment of USD 1.6-3.8 trillion energy system will be required to keep warming within a 1.5 degree Celsius. In order to reach its 2030 climate targets, European Union will be required to invest additional €180 billion per year in energy efficiency and renewable energy. In order to build sustainable infrastructure, Asia also requires investments of US$1.7tm per year. Therefore, the role of financial sector will become crucial in the sustainable development in the coming years.The concept of Green finance will help in securing balanced and sustainable growth.

Manuscript published on November 30, 2019.
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Green finance basically comprises all forms of financial instruments such as green bonds and instruments along with financial institutions such as green banks and green funds that are involved in the investment of environmentally sustainable products and projects. Green financing or climate- smart financing helps to alleviate carbon emissions and increase environmentally friendly results over the long-term. Market-based innovations are driving the development of green finance. According to the
World Economic Forum investment in green infrastructure is projected to be $5 trillion per year until 2030 and much of which will be in the developing world. India will also require infrastructure funding of about $4.5 trillion by 2040 and this funding is projected to be utilized in national renewable energy targets, electric vehicles and green housing.

II. REVIEW OF LITERATURE

Institutional investors can play an important role in green financing by creating liquidity in the market through mobilizing funds of pension funds, hedge funds, mutual funds etc. as per Climate Bonds Initiative Report (2019). [7] in the study revealed that in Asia (excluding Japan) the proportion of socially responsible investment in relation to total managed assets accounts only 0.8% in the year 2016 which is much lower in comparison to the world regions. The major challenge in the way of sustainable development is the lack of or inadequate disclosure requirements that address environmental or long-term systemic risk factors. [3]in their study conducted in Bangladesh recommended that for promoting sustainable development different environment friendly projects should be financed by banks. Banks should play a pivotal role in initiating new environmental friendly products.

[9] shown that domestic green bonds will help in providing additional finance which in turn will help in fulfilling the demand for green infrastructure investment. With the issuance of sovereign and sub sovereign bonds government is also playing an active role in the issuance of green bonds. UN Environment Report (2016) proposed that for promoting green transformation, the role of financial system and the government will play a crucial role. To uphold green finance, private public partnership is needed. G20 will continue to play a significant role in policy making and designing good practice for green transformation.

[1] in their paper revealed that funds raised through green bonds should be utilized for different environmental related projects in eligible categories instead of utilizing it only in low carbon and climate resilient projects. [2]

shown that demand for Green bonds and green funds will increase because of the increase in concern about the environment sustainability Investment in green projects are increasing leading to increase in demand of green finance. [8] revealed that a mechanism harmonizing the relationship between the ecology and finance to be set up for the efficient green financial system. Green finance if effectively managed will help in the proper allocation of resources thereby minimizing environmental risk. [4]in the study suggested that the role of government will be important in removing the barriers in green finance. The government should focus on funding city wise in energy saving products and it should administer locally.

II. OBJECTIVES OF THE STUDY

1. To understand the various green financing initiatives taken by the public and private sector organisations/banks in India.
2. To analyse the trends in green financing in India.
3. To examine various challenges in the area of green financing in India.

III. RESEARCH METHODOLOGY

The study is descriptive in nature and is based on secondary data taken from various government reports published by the Government of India and other published reports of public and private sector organisations and banks in India.

V. DATA ANALYSIS
GREEN FINANCE AND INDIA

In order to achieve its Nationally Determined Contributions goals, India pledges to diminish its emissions intensity by 33-35 percent by 2030 below 2005 levels and to increase the use of renewable energy (RE) by 40 percent of installed electric power capacity by 2030. It is estimated by the government of India that around US$ 4.50 trillion (US$ 450 million per year) will be required over the next ten years to meet the targets for renewable energy and urban sustainability. The Government of India in the 2015 Union budget has declared the target of achieving 175 GW of RE by 2022. For financing green initiatives different private and public banks and non-banking financial institutions have committed funds of about $2570million. Figure I reveals the funds committed by different financial institutions.

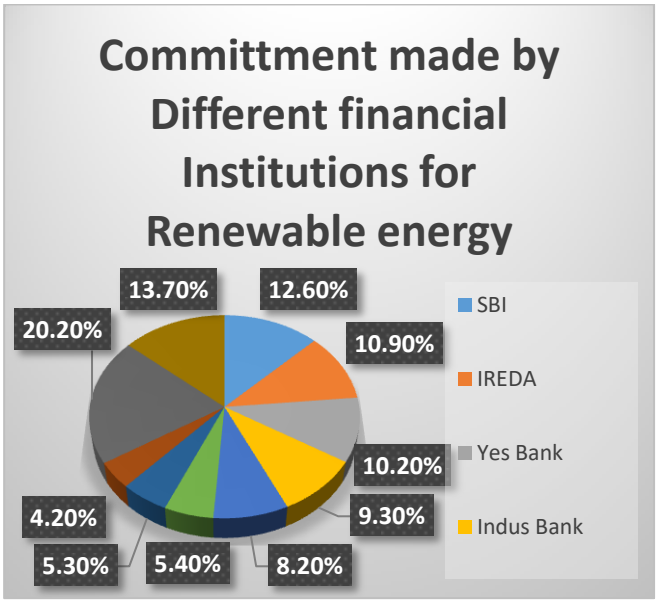


Figure I. Funds Committed by Different Financial Institutions

Source: [6] ADBI Working Paper Series, 2018

To meet the requirements of financing this renewable energy the government of India is majorly relying on Debts Funds. Table I depicts the major loans disbursed to the RE sector in India in 2017–2018.

Table I: Major Loans from Financial Institutions to the RE Sector in 2017-18

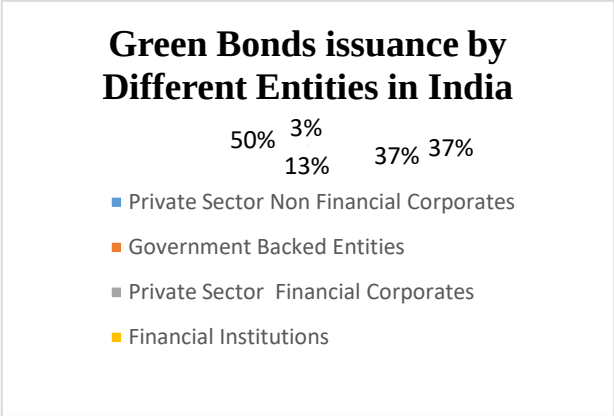
Lender	Beneficiary	Loan Amount (Rs million)	Purpose
Solar Pack	An Indian Financial Institutions	4430.00	To finance 6 solar projects with total capacity of 104 MW in Telangana.
Orb Energy	Overseas Private Investment Corporation	636.00	To develop its in-house finance facility for rooftop solar projects and to meet requirements for small and medium sized enterprises in India and Kenya.
Mahindra Renewables	Yes Bank	7500.00	To finance solar Photovoltaic projects in India

Source: [10] WISE Analysis, 2018, based on data from MERCOM reports.

To extend debts to renewable projects senior notes, nonconvertible debentures and flexi line of credit is also used. Among the capital market instruments, green bonds offer an opportunity for tapping the domestic capital market.

Green bonds are fixed income securities whose proceeds is allotted to green initiatives. The Indian green bond market is still in nascent stage and till now only 20 green issuances has taken place. In India, the cumulative issuance of green bonds stands at USD 7.15 Billion between 2015 to 2018 November (Care ratings report, 2018). Figure II reveals green bonds issuance by different entities in India in the year 2018.

Figure II: Green Bonds Issuance by Different Entities in India in the Year 2018.



Source: CARE Ratings Report, 2018

Green bonds proceeds are used in renewable energy projects,
low carbon buildings, industry and energy intensive commercial, waste and pollution control and sustainable transportation projects. Figure 3 shows use of proceeds of green bonds in India.

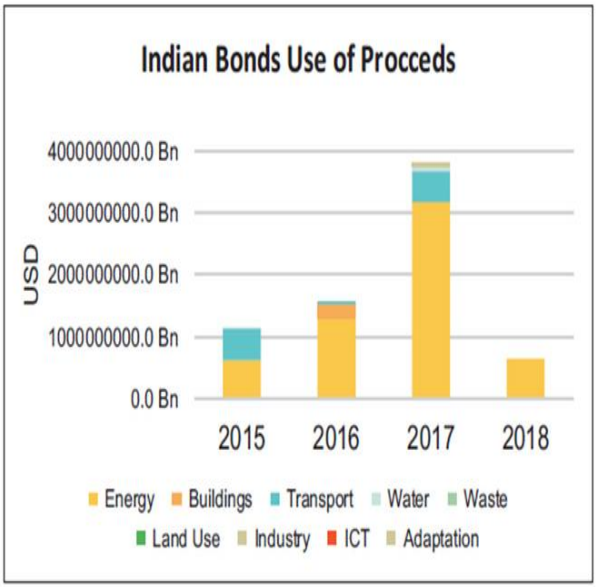


Figure III: Use of Proceeds of Green Bonds in India 2015-Q3 2018

Source: [5] ORF Special Report No. 85, April 2019

Though debt financing mainly through debt instruments remains the major source of green financing in India, but several other initiatives are also being taken by the government, institutions and the other investors.

- Equity investors mainly through private equity and venture capital are participating in green financing.
- In April 2015, RBI included drinking water facilities and small renewables energy projects in priority sector lending targets and it necessitates banks to allocate 40% of lending to key sectors.
- For boosting clean energy and its financing the idea of establishment of Green Banks was explored in India and the first step towards it was the formation of the first green bank 'Indian Renewable Energy Development Agency (IREDA)' in the year 2016. Similarly, several other banks like SBI, Union Bank of India etc. are also taking initiative to convert themselves in green banks.
- Crowd funding is also emerging as a new source of financing in India wherein large number of investors invest in a particular project through a pooled fund. 'Sun Funders' and 'Bettervest' are playing a great role in financing green projects.
- Green finance is also being deployed by the International and multilateral organisations. The UNDP has recently supported India by approving funds of $43 million for boosting climate resilience along its coast by funding.

VI. CHALLENGES IN GREEN FINANCING IN INDIA

- Indian green bond market is at an emerging stage and it has not been able to attract ample number of investors. Investors have a tendency to invest in highly rated bonds or low risk investment options. The bond market requires proper framework for making these bonds attractive to the investors.
- Due to high cost of debt capital the investment in green projects becomes very expensive. High cost of debt is attributed to the factors like high rate of interest, short maturity period and non-existence of non-recourse debt.
- The current market practices, regulations monitoring the market and financial incentives are becoming a great hurdle in the success of financial instruments.
- Several risks associated with the green finance in the form of technology related risk, currency risk, off taker risk becomes hurdle in the availability of financial resources.
- Lack of awareness amongst the investors about the innovative financial instruments also creates hurdle in green financing.
- Lack of efficient framework for project evaluation of a sustainable project mainly in case form early stage innovation becomes a challenge for channelizing funds towards green projects.

VIII. CONCLUSION

Considering the alarming increase in pollution level in India, it becomes imperative to tap the untapped potential of green Finance to finance green projects or investments. There is a need for blended finance which can reduce the overall cost of capital of private capital investors. The government of India should frame a clear green investment strategy focusing on long term, economy wide view.

The regulatory policy should be transparent and more conducive so that it can create trust and confidence amongst investors. India should focus not only on domestic investors but also on foreign investors. The green finance instruments should be designed in such a manner that it should attract both local and international investors.

REFERENCES:

1. 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.
2. Goel, P. (2016). Green Finance: A Step towards Sustainable Financial System. Abhinav International Monthly Refereed Journal of Research in Management & Technology, Vol(5) No(5), pp.22-31
3. Hoshen, S., Hasan, N., Hossain, S., Mamun, A.A., Mannan, A., Mamun, A.A.(2017). Green Financing: An Emerging Form of Sustainable Development in Bangladesh. IOSR Journal of Business and Management, Vol (19) No (12), pp 24-30
4. Keerthi, B.S. (2013). A Study on Emerging Green Finance in India: Its Challenges and Opportunities. International Journal of Management and Social Sciences Research (IJMSSR), Vol(2) No(2), Pp.49-53
5. Kumar, N., Vaze, P., Kidney, S. (2019). Moving from Growth to Development: Financing Green Investment in India. ORF Special Report, No (85), Observer Research Foundation.
6. Sarangi, K.G. (2018). Green Energy Finance in India: Challenges and Solutions. ADBI Working Paper Series, No (863).
7. Volz, U. (2018). Fostering Green Finance for Sustainable Development in Asia. ADBI Working Paper 814.
8. Yao, W., & Zhi, Q. (2016). The role of green finance in environmental protection: Two aspects of market mechanism and policies. Energy Procedia, Vol (104), pp 311 – 316
9. UNEP Inquiry. (2017). GREEN FINANCE PROGRESS REPORT. UNEP Inquiry. Retrieved from http://unepinquiry.org/wp-content/uploads/2017/07/Green_Finance_Progress_Report_2017.pdf
10. WISE. (2018). Status of RE Development in India, 2017-18. Renewables India 2018: Accelerating Market Development. Retrieved from https://shaktifoundation.in/wp-content/uploads/2019/02/RENEWABLES-INDIA-2018.pdf

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