

GREEN FINANCE: RECENT DRIFTS, CONFRONTATION AND PROSPECT OPPORTUNITIES FOR SUSTAINABLE DEVELOPMENT IN INDIA

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ABSTRACT

In recent era our country is more focusing on economic development and GDP without considering the environmental changes and sustainable development. Recently entire world suffering from environmental pollution and climatic changes. It is the late time to focusing on coping with climate changes, reduce the environmental pollution and creating pleasant coexistence between people and nature to have a sustainable development of the global economy and society. The term green finance consist of two words “green “and “finance” both of which are controversial issues. Green finance is the innovative financial pattern adopted by the country to integrate environmental protection with economic development and profit. In this study the researcher’s focusing on the recent trends, opportunities, challenges, various investment avenues of Green Finance in India and to analyze in the path of green finance and to know the target achieved till date from the initiative taken by the Indian government of India. From the analysis it is clear that India has to focus more on to green finance and have to contribute more to infrastructure funding to attain the sustainable development goal.

Keywords: Green finance, Sustainable development, Economic profit

INTRODUCTION

Economic growth of any country depends upon the economic condition prevails which includes declination of poverty , generate employment opportunities which give a direct stead line for economic growth, Above all, traditional method have exploited the natural environment and faced a drastic climate change which reduced the ability of curtailing the future generation needs. So, growth with sustainability has become significant to meet the sustainability a huge

amount is required to implement policies of climate change. India acceptance towards sustainable development goals by developing 17 goals and submitted the intended nationally determined contribution (INDC) in Paris agreement. In order to achieve this goal India require a huge contribution of USD 2.5 Million minimum to curtail India's climate change actions by 2030. For this contribution from public sector is not sufficient for Investment. A collaboration of private sector investment in large ratio we needed to attain 2030 target and 17 sustainable development goals. Green finance is the recent medium through which government from various countries adopt for sustainability as it includes both public and private finance .Green finance is the investment initiative in environment friendly Projects. This instrument are designed with motive to skyrocket the opportunity on eligible projects for revenue generation and capital structure on the most adequate source of Debt and equity. Green finance is a market based investing initiative to optimise the usage of environmental programmes in order to drive business policies and decisions. In next 20 years, government initiative requires a huge Investment wherein the contribution of private sector demand is much higher basically in the current government intervention in finance

Hence green economy, with the new driving force of “Green” for overall growth in the economy by reducing environment pollution initiating green technology and enhancing awareness among the investors to promote green investment towards economic sustainability and growth.

Meaning of Green Finance

Green finance is the initiative basically directs towards the investment policy in eco-friendly instruments aiming to reduce greenhouse gas emission, renewable energy, controlling pollution, waste energy management and ultimately aiming for overall protection and development of biodiversity and sustainable development of Nation. Green finance refers to any financial instrument or investment including equity, debt, grant, purchase and sale of green products which make a combined investment policy firm both public and private finance.

Why Green Finance?

India in its ‘Intended Nationally Determined contribution’ for the time period 2021-2030 has set the following targets:

- India is running as one of the largest renewable energy target initiated in the world .In 2019 UN Climate summit, India announced it will be doubling the target of producing renewable energy from 175 GW by 2020 to 450GW.
- India has targeted to produce 100 GW solar power, 60GW wind power, 10 GW of bio mass and 5 GW of hydro power by 2022
- Electrical power targets include achieving 227 GW of energy from renewable energy by 2020.
- Asian Development Bank have assessed the cost intake for climate change adaption in southern Asian countries and indicates that approximately India's cost of acquisition in energy sector alone comes around USD 7.7 billion in 2030.
- Estimate by National Institution for Transforming India (NITI) Aayog announced the reduction activities for decreasing low carbon initiative would cost around USD 834 billion till 2030.

REVIEW OF LITERATURE

Ms. Neetu Sharma (2015) in this research article the researcher tried to access the awareness level of the customers about Green finance and Green Finance products. Also this study concentrated on the green finance initiatives taken by the private sector banks. As per this study the researcher fund out that customers are aware about green finance initiative program.

Keerthi B.S (2013) in this article the researcher reflect the recent trend and future opportunities in green finance in emerging market in India. Also this paper deal with some of the green projects and the importance of green finance implementation in India.

Priyanka Goel (2016) in this paper the researcher studied the green finance initiatives taken by the top leading public and private sector in India and also discussed the green products and services available in India. The researcher found out that the commercial banks in India offering various green financial products to customers like Green Home Bank loan scheme at low interest rates to encourage the customers to opt for Green housing, Vehicle finance which aims at reducing the interest rate by 50% on the loans taken by the consumers on purchase of cars employing renewable sources of energy and Union Bank of India offers schemes extending loans to farmers for purchase of solar water heaters, solar water pumps and installing of solar home lighting system.

Alapati Sai Bharath Reddy (2018) in this paper researcher discussed the needs, importance and requirement of green finance in India. Also this paper concentrated on the impact of green finance in Indian economy and government initiatives towards green finance.

Gopal K. Sarangi (2018) In this paper the researcher studies the Green finance challenges to achieve 175GW of renewable target by 2022 focusing mainly on the renewable energy in India, how this can make an impact on the green growth of the Indian economy by analysing various Energy mix installed capacities and compound Average annual growth rate of Power generation capacity in India. Also, Researcher focused on the financing and Lending agencies such as National Clean energy & environment Fund , Soft Loans from IREDA, Green banks, Green bonds, Infrastructural Debt Fund , Researcher also studies how institutional and policy level complications uncertainties affect the renewable energy target and also explains the most expensive destination for investment in renewable energy

Parvadavardini & Nagarajan (2014) In this article the researcher tries to access the feasibility of Indian Industries to contribute in green finance and studies the relationship between green growth and green financing with difference green finance products prevail in Indian economy and also studies the positive and negative aspects of green finance , Also researcher focuses on the public financing, Public loans, grants or funds along with the initiative launch by Bank of Baroda scheme for financing the SMES and State Bank of India MOU with Clean Development Mechanism.

Babita Jha, Priti Bakhshi (2019) In this paper researcher tries to access the importance of green finance in economic growth which directs in the flow of finance from the public, private and Non Profitable sector. This researcher explored the various green financing channels for contributions in India and recommended several measures to face these hindrances for financing in the green products in the market.

Md. Sabuj Hoshen (2017) In this paper the researcher studied the allocation of green finance in various green projects in Banks and Non-Banking sector in Bangladesh. The study analyzed the ongoing green finance initiatives and their disbursement of Direct and Indirect fund in green finance, also researcher explored Bangladesh Bank Refinance Scheme for green product.

IMPORTANCE

Increasing environmental concerns both at countrywide and international level; it has become significant for the finance sector to become reactive to these environmental issues. Green finance means investing in projects that protect our natural environment from further degradation. It is mandatory for the sectors like waste management, water conservation, renewable energy, public transport and biodiversity as environment-friendly. For that they have to come up with the concept of green finance. Water, air and soil are the valuable resources that we need to save for our future generations.

Sustainable development is very important as it fulfill the need of the society and protect the natural resources leads to the moral coordination between humanity and the natural resources. Green finance is one of the emerging financial investment pattern that giving priority for the environment as well as society. Hence it is important to know how far investors are aware about new financing pattern that is “green finance” and how it is impacting our sustainable development of our country. This paper tried to access the recent trends and future scope of Green Finance in India.

METHODOLOGY

In this research paper purely based on the secondary data and the data has been collected from secondary source like Published articles, websites, government report etc. Researcher has reviewed various literature and published government reports to reach the findings and conclusion.

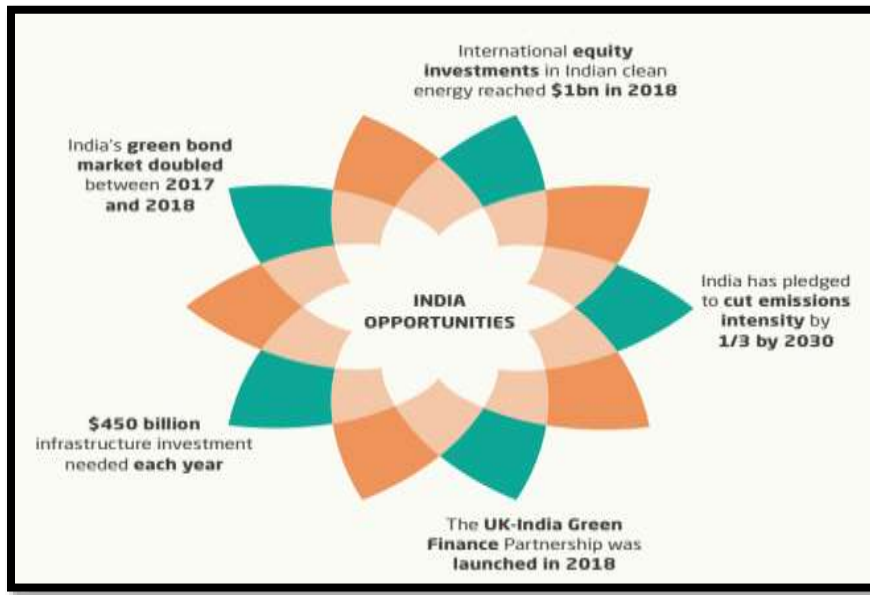
OBJECTIVES

- To analyse in the path of green finance and to know the target achieved till date from the initiative taken by the Indian government of India
- To study the recent trends and future scopes in Green finance in India
- To analyze the challenges and opportunities of Green Finance in India
- To study the various investment avenues in Green Finance in India
- To analyze the various products and services are available under Green Finance

FUTURE SCOPE OF GREEN FINANCE IN INDIA

Environment sustainability being a key issue on worldwide level has increased the scope for investment in green projects utilizing renewable energy resources. Due to this reason most of

the banks and financial institutions giving more priority for Green Finance. There will be an increase in demand for Green bonds and Green funds in India.



Source: <https://www.cityoflondon.gov.uk/business/asia-programme/india/Documents/green-finance-india.pdf>

Determined emission reduction plan

To run into its National Determined Contribution (NDC), India has assured to decrease the intensity of emission of Gross domestic product (GDP) by 35% in the year 2030 compared to 2005 level, and also India has decided to increase the share of non-fossil fuel source to forty percentage by 2030.

To attain this goal India has to invest enormous amount in green infrastructure to sustain high growth rates and meet the aspirations of its citizens. As per the recent estimate India requirements to invest around 4.5 trillion dollar over the next ten years to meet goals for renewable energy and urban sustainability.

At present, commercial banks and NBFS's funded most of the projects through company's balance sheet. Commercial banks contributed 62% and NBFC's contributed around 36% of debt capital flow in to wind and solar projects. Still India required more investment to meet the required target

Climate change goals

As per the recent economic survey India has to double the investment in renewable energy to reach the target. 10 billion dollar is the average financial flows into the renewal energy sector in the year 2013-18 and India has to invest around 25 billion dollar in changing infrastructure alone.

Increased pressure on the banking and shadow banking sectors, and limited fiscal space for the government to expand investment, creates opportunities for green finance.

There is a huge scope for Green Finance due to the current funding challenge. Green bond will play higher role in liquidity and tradability. Domestic and international level investment in green bonds helping India transition to a low carbon economy. Also India planning to implement new policies and regulations to support Green Finance in India and remove the regulatory barriers.

EDHEC Survey

A Singapore based EDHEC survey reported, The India green finance market in primary phase development and offer various openings for growth in the future. Also India to be the top emerging market that focusing on infrastructure development. As of now India is the second largest green bond market and has issued 7.2 billion green bond to the market to the date 2017.

CHALLENGES TO GREEN FINANCE

Structural barriers

Managing foreign exchange risk in an effective way is the one of the primary barriers of Green Finance. Also challenges associated with small projects size contains the capital green or not.

Supporting infrastructure Facilities

For the successful implementation of green finance should require supporting infrastructure for green finance needs to be strengthened to enable the market to take-off. There is a absence of comparability, transparency and reflectiveness of green projects.

Policies and regulations

There is no proper clarity in the green finance policies and regulations. Due to this most of the investors are hesitate to invest in green finance avenues. Hence it is important to frame proper policies and regulations to attract the investors and smooth functioning of the scheme.

Blockades of green finance and policy measures	
Blockades	Measures
Absent of strong green definition	Development and establishment of green principles and indicators
Lack of transparency and information asymmetry	Disclosure guidelines for environmental and financial risks and knowledge sharing in this field
Inadequate analytical capacity	Training, risk modelling, ratings, indices
Maturity mismatches	Development of markets for green bonds or securitized products
Macroeconomic financial barriers	Developing local capital markets
Lack of strategic policy signals	Countries should deliver strategic policy signals and frameworks
Political country risks	Address at country level
Regulatory risks	Development of sufficient regulatory frameworks for green finance

Source: Based on Berensmann / Lindenberg 2017, GFSG 2016, Glemarec et al., 2015

Green Financial Products and Services in India

Green Bond: green bond is a debt instrument similar to other bonds only the difference in the amount received from this bond should be used for energy efficient projects relating to renewable energy, emission reduction, reforestation, etc. in the year 2014 IRDA (Indian Renewable Energy Development Agency) has issues a tax free bond for Rs. 1000 each. This green bond has been issued for the period of 10, 15 and 20 years and terms carrying interest rates at 8.16%, 8.55% and 8.55% p.a. respectively. CARE and Brick Works gave it AAA rating for this bond. Also Yes bank issues 10 years green infrastructure bond in the year 2015 to raising an amount of rupees 1000 crores.

Green Insurance: Green insurance schemes are those schemes which provide risk cover at a low premium and enhanced coverage for green products to minimize the impact of climate change, by this means promoting good corporate activities. In India at currently HSBC cooperated with Allianz to offer its customers with green reinvestment insurance. It provides cover to buildings obtaining certification from international environmental standards such as US LEED (Leadership in Energy and Environmental Design) and BREEAM.

Green Loan Schemes: Commercial banks are issuing Green Loans financing scheme to the public at concessional interest rates to promote and support investment in energy efficient projects. Green Home Bank loan scheme has been initiated by State Bank of India at low interest rate to encourage the customers to opt Green housing i.e. the buildings that are 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.

Vehicle finance scheme has initiated by ICICI which aims at decrease the interest rate by 50 percentage on the loans taken by the public on buying of cars employing renewable sources of energy.

Union Bank of India offers schemes extending loans to farmers for purchase of solar water heaters, solar water pumps and installing of solar home lighting system.

FINANCIAL PRODUCTS-ENVIRONMENTAL BASIS

'Green' Savings Products	Loans for conversion of vehicles to cleaner fuels.
Energy efficient mortgages	Offer Larger mortgages to individuals who have low energy costs.
Alternative Fuel Conversion	Loans for conversion of vehicles to cleaner fuels
Environmental Technology Leasing	Provide business leases for green technology
Home Office Conversion Loans	Loans for seeking to start home working
Community Housing Loans	Loans for Communal housing/facilities.
Environmentally Sound Construction	Provide lending at favourable terms for such activities
Energy Efficiency Loans	Loans for energy efficient improvements.
Private Transport Finance Packages	Loans for combined transport services, equivalent to but cheaper than a private car
'Green' Investment Products	'Green' saving Accounts for children.
'Green' Children Accounts	Saving products where the money is invested in 'Green' projects.

Source: International Journal of Management and Social Sciences Research (IJMSSR)
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Installed Grid Interactive Renewable Power Capacity (excluding large hypower) in India
 as April 30 2019 (RESMNRE)

Source	Total Installed Capacity (MW)	2022 target (MW)
Wind power	36,368	60,000
Solar Power	29,549	100,000
Biomass Power(Biomass & Gasification and Bagasse Cogeneration)	9,806	10,000
Waste- to – Power	138	
Small hydropower	4604	5000
TOTAL	80,467	175000

Source: <https://mnre.gov.in//physical-progress-achievement>

Year wise Renewable Energy Generation (GWH)

Number	Source	2014-15	2015-16	2016-17	2017-18	2018-19
1	Large Hydro	129,244	121,377	122,313	126,134	135,040
2	Small Hydro	8,060	8,355	7,673	5,056	8,703
3	Solar	4,600	7,450	12,086	25,871	39,268
4	Wind	28,214	28,604	46,011	52,666	62,036
5	Bio mass	14,944	16,681	14,159	15,252	16,325
6	Other	414	269	213	358	425
	Total	191,025	187,158	204,182	227,973	261,797
	Total utility power	1,105,446	1,168,359	1,236,392	1,302,904	1,371,517
	% Renewable power	17.28%	16.02%	16.52%	17.50%	19.1%

Source: “Summary of All India Provision Renewable Energy Generation”

The above figure Depicts the amount of funds required to achieve that target set in INDC under Paris agreement of climate change and renewable power capacity targets of 17500 MW by 2022. As on April 30 2019, India has installed 80,467 MW out of 175000 MW. In the given data Wind power is more than halfway towards its goal, solar power is below 13% towards target. Bio energy and Small hydro power are above 80% & 85 % of the way to meet target. Overall India was at 33 % towards meeting its 2022 renewable installed

power capacity target by 175 GW. Wherein, Public finance contribution is the most required source of finance for this sustainable development activities but Indian Government is facing a huge financial deficit in the financial year due to which the difficulty for achieving this target declines. There was a huge fall in GDP in 2019 which will be a huge barrier for International Financial Institutions to invest in Indian economy. Therefore for the green finance growth private sector finance is much importance to enhance sustainability in renewable energy for Nations growth.

FINDINGS

- As per the analysis there is an enormous scope for Green finance in India. Determined emission reduction plans, Climate change goals, increased pressure on the banking and shadow banking sectors, and limited fiscal space for the government to expand investment, creates opportunities for green finance.
- For the successful implementation of Green finance, our country have to take several remedial actions to avoid Blockades of green finance and should build strong policy measures. As of now Green Finance facing certain barriers like Structural barriers, supporting infrastructure Facilities and no proper clarity in Policies and regulations.
- In India we have various avenues for Green Finance. Green Bonds, Green Insurance and other green finance investment are the some of the products of green finance. In the year 2014 IRDA (Indian Renewable Energy Development Agency) has issues a tax free bond for Rs. 1000 each. Also Yes bank issues 10 years green infrastructure bond in the year 2015 to raising an amount of rupees 1000 Cr.
- Green insurance schemes are those schemes which provide risk cover at a low premium and enhanced coverage for green products to minimize the impact of climate change, by this means promoting good corporate activities. In India at currently HSBC cooperated with Allianz to offer its customers with green reinvestment insurance. It provides cover to buildings obtaining certification from international environmental standards such as US LEED (Leadership in Energy and Environmental Design) and BREEAM.
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financial deficit in the financial year due to which the difficulty for achieving this target declines.

CONCLUSION

To shape economic development in sustainable manner, India needs to come up with green finance strategies and products. India needs around \$4.5 trillion infrastructure funding by 2040 to build our economy in sustainable manner. India already started to invest in green finance products and services with the help of public sector, private sector as well as government. Whatever investment we have in green finance as of now is not enough to reach the sustainable development goal. The government of India should setting a clear green investment strategy focusing on long term, economy wide view. Also green finance policies and regulations should be transparent and clear, so that it may lead to attract the investors. Green finance concept have to implement in such a way that it needs to attract both local and international investors.

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