GREEN FINANCE: A STEP TOWARDS SUSTAINABLE FINANCIAL SYSTEM

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ABSTRACT

In today’s era of technological advancement the global economy is threatened from three major challenges: climate change, energy constraints and financial crisis. This is because economic development brings along with itself costs to the nations in form of environmental degradation. A green financial system is the remedy for achieving harmony between the economy and the environment. It promotes green investments in renewable energy development projects which help in achieving sustainable economic growth for the nations. The present study primarily aims at exploring existing literature on the Green banking initiatives taken by the top leading public and private sector banks in India. Secondly, to know about the different green products and services available in the Indian financial markets, their challenges and lastly, the future scope of green finance in India.

**Keywords:** Green Finance; Green Banking; Green Investments; Green Bond

INTRODUCTION

The Finance sector of an economy forms the backbone of the country. It has a direct impact on the country’s economic growth and development. However in order to achieve sustainability in economic growth the philosophy of Environmentalism plays a very crucial role. Therefore, with increasing environmental concerns both at national and global level; it has become important for the finance sector to become responsive to these environmental issues. This gave rise to the concept of Green Finance which is an innovation in the field of finance.

Green Finance thus involves making investments in environmentally sustainable products and projects which aims at reducing or avoiding greenhouse gas emissions, controlling industrial pollution, water sanitation, waste management and overall biodiversity protection. It also includes green investments i.e... The stocks, exchange traded funds and mutual funds of the companies whose operations aims at improving the environment.

The existing literature in this area emphasizes upon the role of Green Banking in promoting environmental sustainability through its eco – friendly strategies and practices. But less work has been found on the kinds of green financial products and services in India and the potential growth opportunities existing in the Green Investment avenues.

RESEARCH OBJECTIVES

1. To review the existing literature on Green Banking initiatives taken by the leading public and private sector banks in India and study the recent developments in this area.

2. To study the kind of green financial products and services being offered by Indian markets and their challenges.

3. To understand the future scope of Green finance in India.
RESEARCH METHODOLOGY

The research methodology used in this paper is based on secondary data collected from the secondary sources such as articles, research papers, annual reports, sustainability reports, bank’s websites, etc.

LITERATURE REVIEW

Heim Gal. (2005) found that investors in stock market have become environmentally sensitive and would not favor the industries that do not comply with the pollution norms.

Nanda Sibabrata and Bihari Suresh (2012) studies the empirically the relation between the implementation of green banking with two variables: net income and profitability using data panel regression model. However no significant relation could be concluded between green banking and profitability.

Chandichal Shilpa and Dr. Misra Sheelan (2013) recognized that the banks are realizing the importance becoming responsive to the environmental and social factors to achieve sustainability in banking decisions. It emphasized on quality improvement tools of e – CRM based Website services, Six Sigma, Business Process Re-engineering which would help the banks to implement paperless banking services.

Dr. Jha Nishikant & Bhome Shraddha (2013) conducted an empirical study on steps taken to go green, to check the awareness of bank employees, associates and general public on green banking issues by primary data collection from 12 bank managers, 50 bank employees and 50 general customers. The researchers found that online banking, green loans, power saving equipments, green credit card, use of solar and wind energy and mobile banking were the widely adopted banking strategies.

D. Khandewal (2013) explained the concept and benefits offered by “green bank” in his paper. He also studied the Green banking practices IndusIInd bank, ICICI bank, IDBI bank, HDFC bank, SBI and Yes Bank. It also suggested tips for green banking by way of online banking, waste management, clean and hygienic environment, green banking in rural branches, green credit cards and green loans.

Yadav Rambalak and Pathak Govind (2014) analyzed that Public sector banks have taken greater initiatives in this regard. In private sector banks only ICICI bank has been pro-active in using green data centers, using energy efficient alliances, promoting pollution control measures, giving preferences to evaluation of green financing projects along with the basic practices of paperless banking, recycling etc.

Yadwinder Singh (2015) in the paper titled on “Environment Management through Green banking: A study of Commercial Banks in India” has studied the Green Banking initiatives taken across the globe. World bank gave E&S norms, Carbon Disclosure Projects, Compensation and Liability Act, 1980, etc guidelines on Green Banking. United Nations has launched United Nations Framework Conventions on Climate Change in 1992. Netherlands based ABN – AMRO developed Reputational Risk Management (RRM) policies to minimize risk in its business engagements. ‘Bank Tract’ a global network of NGOs was formed in 2002 to extend sustainable financial help in the commercial sector. An Equator Principles Association formed in 2014 aims at management of environmental risk in project financing. Finally, the researcher indentified organizations in India promoting environmental sustainability namely Centre for Environmental Research and Education (CERE), Centre for Environmental Education (CEE) and Indian Green Banking Council. Moreover, S&P BSE – GREENEX. The researcher also highlighted the strategies of paperless banking and Green street lending for promoting green banking. The paper also categorized the Green marketing initiatives of banks into three phases on basis of their initiatives on going green.

Dr. Loluru Nagarjuna (2015) in his article on Green Financial management Practices in the Public and Private Sector banks: A case study of SBI and ICICI studied the investment avenues of green finance by way of green stocks and green debt which would add to the goodwill of the companies and increase the market price of the shares thus contributing to the objective of financial management. It also
studied the limitations in calculation of environmental benefits. It suggests that the finance officers of banks must take into consideration the importance of environmental aspects in each of its policies and products due to growing demand for green commodities. This can be done by development of Green Indices.

Sharifi & Hossein (2015) studied the growing importance of green banking in Indian public sector banks of State bank of India (SBI), Punjab National Bank (PNB), Bank of Baroda (BOB) and Canara Bank and conducted a SWOC Analysis. It was found that green banking is a time saving and cost reducing practice. But it faces challenges in form of security issues to the customers, lack of training of bank employees, geographical barriers, etc. However, there exists a increase in scope of green banking practices as more consumers are becoming internet technology friendly. The authors suggested evaluation of green finance projects, LEED certified buildings and training programs for building awareness among the bank employees as measures to improve green banking initiatives.

Raghupati & Sujhatha (2015), discussed the concept and different steps involved in green banking. They also studied the green banking practices of the top four public sector banks: SBI, PNB, BOB and Canara bank and four top four private sector banks: ICICI bank, HDFC bank, Axis bank and Kotak Mahindra Bank on the basis of their net profits.

**Green Banking Practices of Top Leading India Public And Private Sector Banks**

**State Bank Of India (Neetu Sharma, Richa Chaudhary & Dr. Harsh Purohit, 2015)**

- Introduction of Green Channel Counter (GCC) facility at their branches in 2010 to promote paperless banking and expand it to all the branches. (SBI 2014)
- Collaboration with Suzlon Energy Ltd. to employ wind power as an alternative to thermal power in some branches of Gujarat, Tamil Nadu and Maharashtra by setting up of wind mills.
- It became member of Carbon Disclosure Project to undertake environmentally sustainable banking practices (WWF – INDIA 2014)
- Entered into agreement with Export Import Bank of to India (EXIM) to provide long term loans up to 14 years to a Spanish company Astonfield Renewable Resources and Gurpo T-Solar Global SA for building solar plants in India.
- Employed large number of solar ATMs
- Interest charged at concessional rates on green projects to encourage reduction of greenhouse gas emissions.

**Punjab National Bank (Neetu Sharma, Richa Chaudhary & Dr. Harsh Purohit, 2015)**

- The bank has well established active CSR Policy catering to the needs of rural customers and small and micro entrepreneurs. Another major initiative in the area of CSR is ‘PNB Prerna’.
- The bank exercises green building practices like energy efficient lights, immediate repair of any water leakages, printing on both sides of paper, promoting rain water harvesting and extensively using renewable sources of energy for electricity generation.
- It organizes Sapling and Tree Plantation programs during the year.
- It has set up a butterfly park in the compound of Guruvayur temple containing 18 types of medicinal plants under an agreement “Green Pledge” signed with Ministry of New and Renewable energy.
- Granting of loans to projects being approved by the Pollution Control Board ensuring compliance with the social and environmental safeguards including rehabilitation and resettlement of people affected by project.
Designing of a Sustainable Development policy on the guidelines issued under Equator Principles.

**Bank Of Baroda** (Neetu Sharma, Richa Chaudhary & Dr. Harsh Purohit, 2015)
- It gives sanction to those projects which are permitted by the Pollution Control Board and also they are not extending finance to environmental hazardous substances.
- The bank has inculcated the practice of paperless banking through use of internet banking, mobile banking and increased number of ATMs.
- Alterations have been made to desktop virtualization, backup consolidation and server virtualization to improve data centre operational efficiency. This includes energy efficient electrical and HVAC design.
- Honored with “Global Excellence & Leadership Award” in the category of 50 most talented CSR professionals of India by World CSR Congress in Mumbai in 2014.

**Canara Bank** (Raghupati & Sujhatha, 2015)
- It has set up e – lounges for high – tech banking facilities like internet banking, pass book printing kiosk, ATM, online trading, mobile banking and telebanking.
- The bank has implemented E – HRM policies and procedures in the system.
- It extends loans to projects which values the use of wind energy and solar energy to earn carbon credits.
- At the time of appraisal of projects the bank makes it mandatory for the manufacturing units emitting toxic effluents to install the water treatment plants and also obtain approval of the central or state Pollution Control Board.

**Kotak Mahindra Bank** (Raghupati & Sujhatha, 2015)
As a part of its “Think Green Initiatives” the bank has adopted following measures:
- Partnered with Grow – trees.Com to plant one sapling for every e – statement on behalf of its e – statement.
- It has set up ‘Social Environmental Management System Plan’ formed on the basis of an IFC based sustainable framework and performance standards for evaluating social and environmental risk.
- According to the guidelines of Ministry of Corporate Affairs, the bank issues e – copies of annual reports to its customers.
- The data centers have been consolidated into single facility to improve efficiency in 2009.
- Installation of rain water harvesting tank in the premises.

**ICICI Bank** (Neetu Sharma, Richa Chaudhary & Dr. Harsh Purohit, 2015)
As a part of its “Go Green” initiatives following activities are performed:
- Offering green products and services of Insta banking and concessional auto loans to the customers purchasing cars using alternative sources of energy.
- Green engagements in form of partnership with Green theme – CNBC overdrive auto awards, celebration of World Environment Day on June 5 by organizing trees and sapling plantation program and celebrating earth hour every year by switching off the lights in its premises from 8:30 pm to 9:30 pm. They are also partners with Green Governance Awards set up by BHNS.
Green Communications includes promoting paperless banking through encouraging online fund transferring, filing of e-returns, making of e-FDs, online bill payments, demat trading etc.

Other initiatives includes organizing Webinars, use of CFL bulbs, carpools and public transportation, developing eco friendly air conditioners etc.

**HDFC Bank** (Neetu Sharma, Richa Chaudhary & Dr. Harsh Purohit, 2015)

- It has taken steps in the area of waste management and energy efficiencies by increasing awareness among the employees to prevent wastage of resources and emission of greenhouse gases, encouraging the customers to deal through e-transactions and tying up with vendors for recycling of paper and plastic.
- Setting up of 20 solar ATMs and replacing the batteries in ATM with Lithium – ion batteries.
- The bank is accepting the projects which are rated by Energy stars and have a prior approval of Central pollution Board.
- Conservation of electricity by using CFL bulbs, switching off lights in all branches after 11 pm and establishing green data centers.
- Formation of Green clubs within banks of all regions with Environment Managers at every branch.

**IndusInd Bank** (D Kandavel, 2013)

- It had started its Green Office project under a campaign titled under “Hum aur Haryali.”
- It had installed first solar power ATM in Mumbai and replaced diesel generators with solar panels. This would lead to savings of Rs.20,000 p.a. to the bank.

**IDBI Bank** (D Kandavel, 2013)

- Designed a separate team on clean development mechanism advisory services.
- Implemented a refinance scheme for small, medium and micro enterprises energy saving projects.

**Axis Bank** (Neetu Sharma, Richa Chaudhary & Dr. Harsh Purohit, 2015)

- The bank collected the dry waste generated from its head office and 34 branches in Mumbai and recycled it to notepads, notebooks and envelopes. More than 1,00,000 kg of waste has been converted into 12,000 notebooks, notepads and envelopes.
- The head office at Mumbai has been converted into platinum LEED certified Green Building.
- Car pooling introduced as a measure to reduce carbon footprints.
- Communications with customers done in electronic form like use of e-statements, mailing the annual reports, internet and mobile banking.
- Ten solar based ATMs installed in Coimbatore under Independent ATM Deployment (IAD) Model.

**Idfc Bank**

The bank as a part of its “Go Green Initiatives” has undertaken following steps:

- It sends annual reports to its shareholders through mail to save paper.
- It has constituted Environment Risk Group (ERG) whose operations are headed by a Chief Risk Officer.
It has a well developed Environmental and Social Policy Statement and publishes annual report in accordance with guidelines issued under Equator principles.

It aims at reducing its carbon footprint by computing ratios (t CO₂e/operating income and t CO₂e/Profit after Tax) to measure the incremental emissions for every rupee of revenue and profits generated respectively.

Some other initiatives on part of banking sector include Yes bank’s “Yes Community” initiatives which include measures on energy efficiency, workplace health and safety and local disaster plans. Moreover, the foreign banks of ABN AMRO and Royal Bank of Scotland constructed a Sustainable Development Fund as a response to socially active investor groups.

Recent Developments in Green Banking Initiatives

- State bank of India launched Green Pin facility in Mumbai in February 2016 under which the Pin can be generated through ATM, internet banking, IVR and SMS. This would save the customers efforts and time for visiting the branches and help the bank in saving the costs on courier and stationary.

- In 2016 Punjab National Bank launched the Green pin facility under which pin can be generated through SMS request. It launched mobile apps which serve as PNB ATM locator, helps in instant lodging of issues on operational aspects and understanding basic banking. Moreover, the bank provided SMS based facility to block and unblock internet banking and mobile banking.

- Axis Bank started using water from rain water harvesting and water treatment plants, made furniture from the recycled materials. Apart from this it implemented Remote Management Service Program to regulate the energy usage in the offices and development of green data centers. Under its “Root For Planet” initiative it has been presented the certificate by Limca Book of Records for accomplishing a national record of planting 24 varieties of 1,27,199 saplings in a day across 24 centers involving 7000 volunteers in 687 branches.

Green Financial Products And Services In India

Green Bonds: Green bond is a debt instrument which has characteristics similar to that of a standard coupon bond but the difference is only that the issuer of this bond utilizes the proceeds from this bond in energy efficient projects relating to renewable energy, emission reduction, reforestation, etc.

In India, Indian Renewable Energy Development Agency (IRDA) issued a tax free Green Bond in February 2014 for Rs.1,000 each. It issued bonds with 10 year, 15 year and 20 year terms carrying interest rates at 8.16%, 8.55% and 8.55% p.a. respectively. CARE and Brick Works gave it AAA rating.

Yes Bank has issued a 10 year Green Infrastructure bond in February 2015 raising an amount of Rs.1,000 crores. The amount raised by the bank would be diverted towards the financing of the Green Infrastructure projects such as solar power, biomass, wind power and small hydel projects. It has tied up with KPMG India to provide Assurance services annually in accordance with the green bond principles.

Hindustan Power Project entered the green bond market with an issue of bonds fully underwritten by Yes Bank.

In 2016 Yes Bank issued another green bond as a private placement with International Finance Corporation (IFC) as a sole investor for INR 3.15 billion. The bond has been rated as AA+ by ICRA and CARE.
EXIM Bank of India issued a five year $500 million green bond in March 2015. It is the India’s first dollar denominated green bond. The bank would utilize the proceeds in funding the green projects in India, Bangladesh and Sri Lanka.

NTPC Ltd. had planned to raise $ 500 million by way of green bond issue. The proceeds from this issue will be used for setting up 10 GW solar power capacities. The state governments of Andhra Pradesh, Telangana, Madhya Pradesh and Rajasthan have asked the company set up large scale solar power projects for which it has issued tenders worth 1.25 GW solar PV power capacity.

Re New Power Ventures issued green bonds for raising $68 million backed by Goldman Sachs.

Greenko, a clean energy player issued a $550 million high yield corporate bond to re-finance its wind and hydro power projects carrying a interest rate of 8% p.a. It was rated B by Fitch.

CLP India Ltd. issued Green bonds to raise Rs. 600 crore offering a coupon rate of 9.15 % p.a. in three series of equal amounts and its maturity would take place every year in April 2018, 2019 and 2020.

IDBI Bank Ltd. raised US $350 million by issuing a five year Green Bond priced at Treasuries plus 255 bp, which was oversubscribed by three times i.e., US $1 billion.

**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, thereby fostering good corporate behavior.

In India at present HSBC collaborated with Allianz to provide its customers with green reinvestment insurance. It provides cover to buildings obtaining certification from international environmental standards such as US Leadership in Energy and Environmental Design (LEED) and Building Research Establishment Environmental Assessment Methodology (BREEAM). This cover provides an additional 5% over and above the normal insured loss amount with a only minor increase in premium. This would encourage the builders to create more energy efficient buildings.

**Green Loan Schemes:** Green loan schemes are the financing schemes offered by commercial banks and financial institutions at concessional interest rates directed towards providing support to investment in energy efficient projects.

State Bank of India (SBI) had launched a Green Home Bank loan scheme at low interest rates to encourage the customers to opt for 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.

ICICI Bank has launched a scheme of 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 like the Civic Hybrid of Honda, Tata Indica CNG, Reva electric cars, Mahindra Logan CNG versions, Maruti’s LPG version of Maruti 800, Omni and Versa and Hyundai’s Santro Eco. Under its Home finance schemes the bank attempts to reduce the processing fees of customers purchasing homes in LEED certified buildings. (Raghupati&Sujhatha, 2015)

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.

Punjab National Bank offers medium term loan schemes to farmers for construction of green houses, setting up of biogas plants with sanitary latrines and has a scheme of PNB’s Saur UrjaYojna for small farmers to finance the purchase of solar home lighting and water heaters.

India being a developing country has a bond market operating in the nascent stage. Therefore, there are certain challenges which confront India for issuance of green bonds in International markets which are as follows:

- High currency hedging costs.
Poor sovereign ratings (currently at BBB)
Low tenure (currently concentrated between 3 to 10 years)

There are some recommended policy measures which the government can take to overcome the challenges faced by green bonds:

- Development of an exchange risk liquidity facility through foreign reserves to the participants of green bonds for specified period.
- Complying with the guidelines of Green Climate Fund (GCF) to provide risk mitigation products such as partial credit guarantees, risk guarantees or hedging product, etc.
- One of the policy measures to reduce hedging risks can be indexing electricity tariff to inflation.

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. Therefore, many banks and financial institutions would look forward at tapping this growing sector. Thus, there will be increase in demand for Green bonds and structured green funds. Moreover, investors would get the benefit of diversification from investment in such bonds.

This is true in context of India also as a study of Mc Kinsey & co. found that a probable increase in carbon emissions to 5 – 6.5 million MT in India could be lowered by 30% to 50% by 2030 by investing in energy efficient technologies in building infrastructure and for this purpose there would be need for an additional 600 – 750 billion Euros even after accounting for steep decline in cost of renewable energy technologies. International Finance Corporation (IFC) has taken a step in this regard. It has decided to invest $75 million in green bonds issued by Punjab National Bank Housing Finance Ltd. in 2015. These are secured non – convertible debentures whose proceeds will be directed towards the construction of Green residential buildings certified by World Bank’s EDGE.

In India a Council on Climate change under the supervision of Prime Minister was constituted in 2007 and reconstituted in 2014 for adaptation and mitigation of climate change. It has launched various programs like National Action Plan on Climate change, Jawahar Lal Nehru National Solar Mission, National water Mission, National Mission for Enhanced Energy Efficiency, National Mission on Strategic Knowledge for Climate Change, National Clean Energy fund. Other programs like Auto Fuel vision and Policy 2025, Expert groups on Low Carbon Strategies, etc. In 2015 the Green Climate Fund set up under the framework of the United Nations Framework Convention on Climate Change (UNFCCC) has accredited NABARD as National Implementing Entity (NIE) to finance clean energy projects in India.

The recent government policies and initiatives which have increased the scope of Green financial products in India are as follows:

- India’s National Action Plan on Climate Change recommended that country should generate 10% of its power from renewable energy resources by 2015 and 15% by 2020. Of India’s installed power generation capacity of 2, 55,012.79 megawatt (MW), renewable power has a share of 12.42% or 31,692.14 MW which shows that there exists a huge scope for investment in this sector.

- The Ministry of New and Renewable Energy (MNRE) has revised its targets for energy capacity to 1, 75,000 MW till 2022, comprising 1, 00,000 MW solar, 60,000 MW wind, 10,000 MW biomass and 5,000 MW small hydro. These revised targets demand a huge investment. Since, the sanctioned budget would not suffice so MNRE has asked the public and private sector financial institutions such as Power Finance Corporation (PFC), Rural
Electrification Corporation (REC), Indian Renewable Energy Development Agency (IREDA), IFCI Ltd, SBI Capital Markets Ltd and ICICI Bank Ltd to raise funds.

- The finance ministry has increased the clean energy cess on coal by Rs.100 per metric tonne to fund clean environment initiatives. The scope of National Clean Energy fund (NCEF) has been expanded to include financing and promoting clean environment initiatives and fund researches towards that end.

- The government has also proposed the use of renewable energy resources in railways sector. It includes use of CNG in train operations, setting up of water recycling plants, use of solar energy to illuminate coaches, station buildings and platforms. There is also a proposal to change the design of locomotive cabin to reduce the noise level.

- Other initiatives on part of government includes its plans for creating a solar army, providing venture capital to ambitious solar power generation projects and setting up of solar parks totaling 20,000 MW over a period of five years.

- Indian Innovation Lab, a new initiative of MNRE aims at bringing the public and private leaders on common platform to develop innovative instruments that would mitigate risks and direct more investment for green growth in India. It has launched four winning ideas: Loans for SME, Rooftop Solar Private Sector Financing Facility, P 50 Risk solutions and Renewable Energy Integrated Hedging, Equity and Debt fund.

CONCLUSION

Thus, it can be concluded that India has a great potential to create a green infrastructure needed for green finance by overcoming the barriers and creating awareness among the corporate citizens.

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