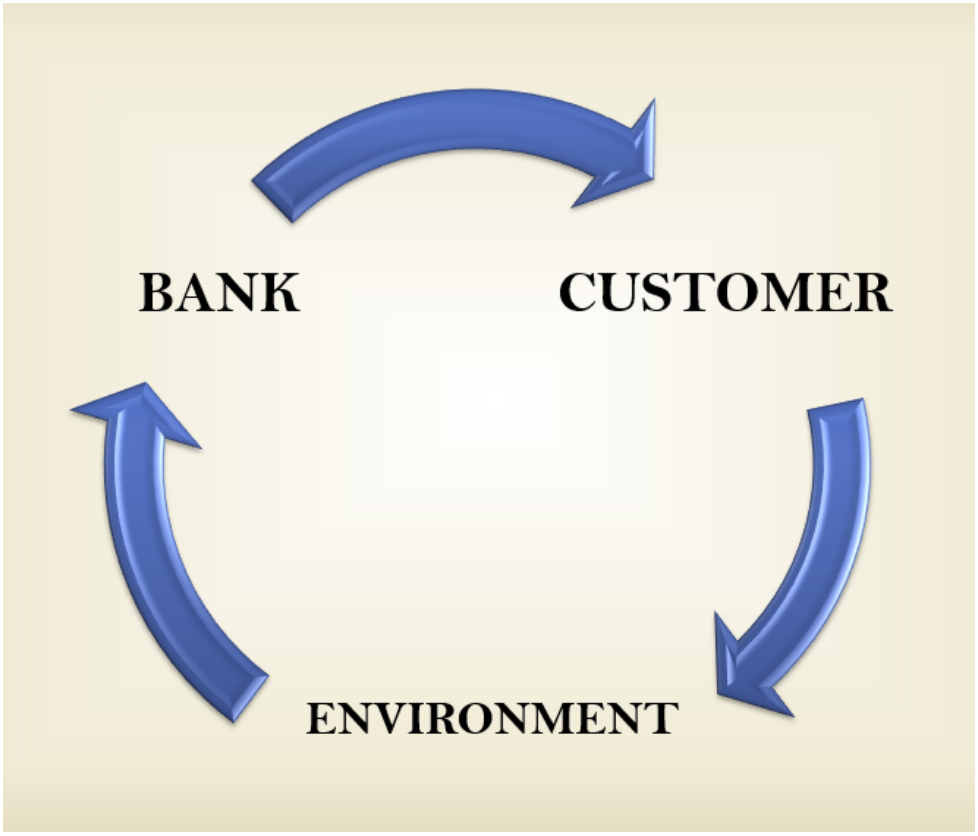
Green Banking Initiatives Abroad and its Implementation in Indian Scenario – A study of possibilities

Abstract

Green banking refers to the banking business managed in such a manner that helps for overall reduction of external carbon emission and internal carbon footprint. The present study attempts to understand the use of Green Banking Products in banking sector and examine the green banking initiatives by top three Public and Private Sector Banks in India. Study concluded that both banks have effectively initiated green banking initiative. Comparatively, Public sector banks have shown better performance in terms of Green banking initiatives. Today's business is all about being green. From Wal -Mart to Apple, everyone is talking about how green their approach, packaging, or methods are. But green business is really in its infancy, and the future of being green will no doubt distill down to some very real and definable goals and practices. Various financial services adopted by green business are banks, credit card companies, insurance companies, consumer finance companies, stock brokerages and investment funds. Banking sector for great banking has its own significance. Green banking means promoting environmental friendly practices and reducing carbon footprint from banking activities. To aid the reduction of external carbon emission, bank should finance green technology and pollution reducing projects. The present paper aims to highlight Indian initiatives by various banks adopting green banking in India. Further, an attempt has been made to enlist certain strategies of adopting green banking. Banking sector is generally considered as environment friendly in terms of emission and pollutions. Internal environmental impact of the banking sector such as use of energy, paper and water are relatively low and clean. This is an effort by the banks to make the industries grow green and in the process restore the natural environment. This concept of Green banking will be mutually beneficial to the Consumers, banks, industries and the economy. For consumers this shift

towards green banking means that more deposit and loan products will be available through online and mobile banking. It also means better deposit rates on CDs, money market accounts and savings accounts. Green banks should also have lower fees and give rate reductions on loans going towards energy-efficient projects. This is banking beyond pure profit. Another important aspect of green banking is the involvement and outreach from the individual banks to their local community. India was far behind from other countries like China and Mexico in introducing and applying the concept of Green Banking. No initiatives were taken by the Indian banks to formulate the green concept in the society. The authors made clear that to attain sustainable development in the country imparting education and creating awareness was necessary. There are only small group of banks in India that lead in environment aspect. Some researchers researched on public as well as private sectors which reveal that public sector banks have taken more initiatives as compare to private sector. Therefore the current research is focused to comparatively analyze of Green Banking in India and Abroad.

KEYWORDS: Resource efficient, green industry, environment friendly, sustainable banking, Banking, Green Banking, Sustainable Banking, Online banking, India, China.



INTRODUCTION

In the process of economic development, it has led undesirable effects on environments and creates the issues of increased carbon emission, global warming, climate change, green house gases, flood, drought, tsunami etc. As a result, the quality of environment damages. Because of this, Sustainable development and preservation of environment have become the prime importance at the global context. At International level initiatives regarding environmental protection are undertaken by United National Environmental Protection Finance initiative (UNEP FI) and Equator Principles (EPs).UNEP FI encourages for better implementation of sustainability principles through the operations of the financial institutions. It works with over 200 members including lead banks, investment funds and insurance companies to develop and promote linkages between sustainability and financial performance. Similarly, 78 financial institutions in 32 countries have officially adopted the EPs, covering over 70 percent of international Project Finance debt in emerging markets. (IDBRT, August

2013)As a part of it, RBI also issued circular for banks to contribute for sustainable development. Green banking is comparatively new development in the financial world. The activities of the banks are associated with environmental protection and sustainable development. As responsible institutes, banks and financial institutions can play an important role for protecting the environmental degradation through financing Environment friendly projects and adopting environment friendly products and services. Basically Green banking refers to the banking business managed in such a manner that helps for overall reduction of external carbon emission and internal carbon footprint. Banks can reduce external carbon emissions through green finance which includes concessional finance for green technologies and pollutant free projects. On the other side bank reduces internal carbon footprint through product innovations. Technology oriented banks help to reduce the usage of natural resources and for environmental protection. It will also ensure to less use of paper, water and energy consumption. Banks are actively engage in green process, strategies, green infrastructure and introducing a variety of green products and services and ensure the environmental protection. The financial institutions influence the economic growth and development of the country both in terms of Quality and Quantity, there by adopting various strategies for economic growth. As environmental issues gain greater attention, pressure is being placed on all industries, including financial institutions to implement Green Initiatives. Banking sector plays a crucial and decisive role in promoting environmentally sustainable and socially responsible investments as it increases the value and lowers loss ratio as higher quality loan portfolio results in higher earnings. Thus, encouraging environmentally responsible investments and prudent lending should be one of the responsibilities of the banking sector. The Green initiatives taken by Banks or a concept of Green banking means using all of the banks resources with responsibility and care, avoiding waste and giving priority to choices that take sustainability into account. It also means promoting environmental-friendly practices and reducing your carbon footprint from your banking activities. The reasons for going green are manifold, and the key among them are: increasing energy consumption and energy prices, growing consumer interest in environmentally-friendly goods and services, higher expectations by the public on Bank's environmental responsibilities and emerging stricter regulatory and compliance requirements. This comes in many forms. Using online banking instead of branch banking. Paying bills online instead of

mailing them. Opening up CDs and money market accounts at online banks, instead of large multi-branch banks. Or finding the local bank in your area that is taking the biggest steps to support local green initiatives. It is an umbrella term referring to practices and guidelines that make banks sustainable in economic, environment, and social dimensions. It aims to make banking processes and the use of IT and physical infrastructure as efficient and effective as possible, with zero or minimal impact on the environment. Green banking refers to how environmentally friendly your bank is, and how committed to green and ethical policies they are. Banking sector is generally considered as environment friendly in terms of emission and pollutions. Internal environmental impact of the banking sector such as use of energy, paper and water are relatively low and clean. This is an effort by the banks to make the industries grow green and in the process restore the natural environment. This concept of Green banking will be mutually beneficial to the Consumers, banks, industries and the economy. For consumers this shift towards green banking means that more deposit and loan products will be available through online and mobile banking. It also means better deposit rates on CDs, money market accounts and savings accounts. Green banks should also have lower fees and give rate reductions on loans going towards energy-efficient projects. This is banking beyond pure profit. Another important aspect of green banking is the involvement and outreach from the individual banks to their local community. India was far behind from other countries like China and Mexico in introducing and applying the concept of Green Banking. No initiatives were taken by the Indian banks to formulate the green concept in the society. The authors made clear that to attain sustainable development in the country imparting education and creating awareness was necessary. There are only small group of banks in India that lead in environment aspect. Some researchers researched on public as well as private sectors which reveal that public sector banks have taken more initiatives as compare to private sector. Therefore the current research is focused to comparatively analyze of Green Banking in India and Abroad.

Needs for Green Banking

- *The concern for environmental sustainability by the banks has given rise to concept of Green Banking.*

- *Conventional banking systems are energy consuming and cause a severe toll on environment*
- *Green bank by directing its core operations towards the betterment of the environment.*
- *It means developing inclusive banking strategies which will ensure substantial economic development and promoting environmental-friendly practices as well.*
- *Green Banking both country and nation gets environmental benefits, the concept of "Green Banking" will be mutually beneficial to the banks, industries and the economy.*

REVIEW OF LITERATURE

According to RBI (IRDBT, 2014), green banking is to make internal bank processes, physical infrastructure and IT infrastructure as effective and efficient as possible, with zero or minimal impact on the environment. They had introduced green rating standards for Indian banks, which are termed as 'Green Coin Ratings'. Under this rating system, banks are judged on the basis of carbon emissions from their operations and on the amount of recycling, refurbishment and reuse material being used in their building furnishings and in the systems used by them like servers, computers, printers, networks, etc.They are also being judged on

the amount of green projects finance by them and rewards or recognitions given to borrowers for turning their businesses greener.

Green banking services helps the banks towards the sustainable developments of the banks. In this context many authors expressed their opinions on the previous and recent developments and trends in the banking sector relating to the green banking.

Jeucken (2001) highlighted important differences between regions, countries and banks with regard to sustainable banking. Jeucken identified four stages: defensive, preventive, offensive and sustainable banking.

Chowdari Prasad (2002) has studied the Impact of Economic Reforms on Indian Banking and suggested how banking sector will face the changes and challenges.

Hopwood, 2005, highlighted the need for change it would be agreed that transformation in the usual model for the sustainable development is essential in order to understand the evolution of the banking sector towards sustainability.

McKinsey & Co. (2007) On the top of all these, there is certainly the aspect of profitability and productivity for all these banks to achieve.

Douglas (2008) found four key findings: (a) banks are increasingly discussing climate change business opportunities in their annual reports, (b) twenty eight of the forty banks have calculated and disclosed their greenhouse gas emissions from operations, (c) growing demand for climate friendly financial products and services is leading banks into new markets, and (d) investment banks have taken a leading role in supporting emissions trading mechanisms and introducing new risk management products.

Sudip Kar Purkayastha (2010) Such measures also yield the banks in offering top class service to attain Customer Satisfaction, particularly at a time there is stiff competition amongst the different types of banks, i.e., Public, Private, Foreign and others.

Mohmed Aminul Islam (2010) Green Banking is also gaining importance in recent times. While the banking industry is undergoing computerization, networking and offering of on-line banking is

naturally gaining momentum.

Ela Sen (2010)Besides several benefits of computerization like speed, accuracy, ambience, efficient handling of sizeable business, etc., there is a factor like paper-less business resulting in waste management, eco-friendliness and pollution control.

Goyal KA and Vijay Joshi (2011) One side bankers are expecting more business through customer satisfaction but on the other side, the technology effect makes the customers not coming to the bank but bank is going to the doorstep of the customers

Nigamanda Biwas (2011) interpreted Green Baking as combining operational improvements, technology and changing client habits in market place. Adoption of greener banking practices will not only be useful for environment but also benefit in greater operational efficiencies, a lower vulnerability to manual errors and fraud and cost reductions in banking activities. He stated that the concept of green baking will be mutually beneficial to the banks, industries and economy. Not only green banking will ensure the greening of the industries but it will also facilitate in improving the asset quality of the bank in future. He has listed several benefits of green banking.

Alice Mani (2011) indicated that as Socially Responsible Corporate Citizens (SRCC), banks have a major role and responsibility in supplementing governmental efforts towards substantial reduction in carbon emission. Bank's participation in sustainable development takes the form of Green Baking.The author examined and compared the green lending policies of banks in India in the light of their compliance and commitment to environment protection and environment friendly projects. It was opined that Banks in India can implement green lending.

(UNEP) Green Finance or Green Banking refers to diverse financial services and products provided by financial institutions for sustainable development (UNEP FI, 2007).

Green finance was firstly raised at the beginning of 1990's, when the United Nations Environment Program (UNEP) worked with industry to develop environmental management strategies that they were convinced that the financial industry maintaining their businesses might have a significant influence to the environment (UNEP FI, 2010). In fact, this concept has

been mentioned for several years. But to date, it has not yet been normatively defined by any international bodies, as it depends on specific financial entity allocating capital to specific purpose with integrating environmental and sustainability factors. There are some major concerns about environmental issues. Therefore, organization needs to pay attention to their outputs whether they are violating environmental issues or not. At SBI Bank, it is believed that profit should not be earned at the expense of the world's most pressing environmental problems.

That is why they finance organizations from organic food and farming businesses and pioneering renewable energy enterprises, to recycling companies and nature conservation projects.Citizens Bank of Canada has lowered its interest rate on loans for carbon emission cars. These kinds of efforts will surely motivate other banks to promote green banking and consequently in long run environmental issues can be resolved.

Jha & Bhome (2013) did the empirical study on the steps that can be taken for going green in the banking sector and to check the awareness among bank employees, associates and the general public about green banking concept. They did this study by collecting data from 12 bank managers, 50 bank employees and

50 general customers. The authors were of the opinion that online banking, green loans, power saving equipments, green credit card, use of solar and wind energy and mobile banking were some of the strategies that should be followed for going green. The results of the study were, banks should adopt environmental standards of lending, which results in improving the asset quality of banks. The rate of interest on loans given for green projects should comparatively less than the normal rate of interest. Companies can increase their profitability by reducing or recycling of waste generated and also by adopting sustainable measures to go green.

Dharwal & Agarwal (2013) studied that green banking is a key in mitigating the credit risk, legal risk and reputation risk. The author had suggested some green banking strategies like carbon credit business, green financial products, green mortgages, carbon footprint

reduction (paperless banking, energy consciousness, mass transportation system, green building), and social responsibility services towards the society.

Malu, Agrawal, & Jajoo (2014) studied that banks can play an important role in reducing the carbon footprint in the society. Earlier economic development means reducing poverty, inequality and unemployment in the society, but the concept of Economic development had changed to Sustainable development which means "development that meets the needs of the present without compromising the ability of future generation to meet their own needs (World Commission Environment and Development 1987).

The study suggested that sustainability in the banking sector can take two forms-

1. *Banks can change their routine operations through recycling programs, paperless banking, using energy efficient resources, and support for community events for reducing pollution and so on.*

2. *They can adopt lending and investment strategies to promote environmentally responsible projects and can also develop green products to ensure the sustainability in their core business.*

Vikas Nathi, Nitin Nayak & Ankit Goel (2014) concluded that India is running behind their counterparts from developed economies. They have started adopting green practices, but still their impact on the environment is increasing. Green banks are at start up mode in India. They should expand the use of environmental information in their business operations, credit extension and investment decisions. The endeavor will help them proactively improve their environmental performance and creating long term values for their business.

T.Rajesh and A.S. Dileep (2014) concluded that Green Banking is an umbrella term referring to practices and guidelines that make banks sustainable in economic, environment, and social dimensions. Green banking can be an avenue to reduce pollution and save the environment aiding sustainable economic growth. Before making the decision to finance a project, banks must see its environmental risks and ensure the project players have environmental safety measures in their plans, including recycling facilities or smoke and gas arresting units. A framework of incentives for

responsible banks and disincentives for pollutants is an essential element for the development of green banking.

Year	Author	Key Observations
		INDIAN REVIEW'S OBSERVATIONS
2008	Sahoo and Nayak	• Researcher revealed that there have not been many initiatives taken by Indian bank towards Green Banking. • Study also stated that none of the Indian banks have adopted equator principle.
2012	Bahl	• Bahl highlighted the importance of creating awareness towards Green Banking to ensure sustainable growth. • The author suggested that to attain sustainable growth imparting education through publications, newsletters and media are important.
2013	Jha and Bhome	• The researchers stated certain steps needed in green banking. • Online banking, Green checking accounts, Green Credit Cards were few steps suggested by them.
2013	Rajput, Kaur et al.	• The authors explained that there are only small group of banks in India that go ahead and takes initiatives in environmental aspect.
2013	Yadav and Pathak	• The authors research's stated the initiatives taken by private and public bank for environment sustainability. • The results revealed that public sector banks have taken more initiatives as compare to private sector.
2013	Rambalak & Phatak Swroop	• The researchers made clear that the industries and firms are vulnerable to severe policies, severe laws of the country which affect the banks and financial institutions.
2013	Singhal, Singhal & Arya	The authors enlightened that Green banking saves the environment and helps to 2conserve the energy. They explained that bank should think far more than ATM, Green credit cards, green CDs.
2014	Khedekar	• According to the study of researcher the bank should provide internet banking such as Demat holding, investment to facilitate the public. • Also to educate the public, seminar and conference must be conducted.
2014	Sreeshach	• The researchers study revealed that public sector banks are more interested in green banking as compared to private sector banks. • The author suggested that to balance the situation imparting knowledge is important.
2014	Sahitya & Lalwani	• The authors disclosed the awareness of banks towards Green banking. • Public and private sector banks made it possible through the use
		of ATM and internet banking.
2014	Sharma, Gopal et al.	• The research unveiled that three fourth out of total public who make use of online facilities are unaware of the term Green Banking. • The major hindrance in India regarding Green Banking is the technical issues involved followed by lack of education.

2014	*Nath, Nayak et al.*	• *The detailed study of these authors consist of green rating standards i.e. green rating points according to which the banks are appraised.* • *World Bank's norms guide the banks to adopt sustainable technology.*
2014	*Sudhalakshmi and Chinnadorai*	• *The researchers revealed that no efforts were made by the Indian banks towards Green Banking.* • *Indian banks were required to take in the green aspect in their lending rules.*
2014	*Karunakaran.R*	• *The author highlighted that if Indian banks want to enter the global economy, then they should be aware of their responsibilities as a global corporate citizen.* • *Use of renewable resources and paperless banking are some strategies to improve the situation.*
2015	*Ragupathi. M and Sujatha .S*	• *. According to the researchers prior bank was not aware about the concept green banking but now banks are conscious towards environment sustainability.*
2015	*Rambalak Yadav and Govind Swroop Phatak*	• *The researchers revealed that at present the banks are aware of Green Banking and has realized the importance of bank towards its environment.*
INTERNATIONAL REVIEW'S OBSERVATIONS		
2009	*Chris Van Hollen (USA)*	• *He introduced the concept of Green Banking where his main motive was to reduce the use of paper work.*
2011	*BANGLADESH*	• *It is the one and only central bank having the proper knowledge towards Green Banking.* • *The country also offered climate-friendly lending.*
2004-2015	*BRAZIL*	• *Brazil banks were among the earliest banks to sign up to the Equator Principles.* • *Brazilian bank association guided the banks to adopt Green Protocol.* • *Many rules and parameters were issued to safeguard the environment which was duly followed by the country.*
2006-2015	*CHINA*	• *In China, Green Credit Policy was introduced which kept in mind the environment while exercising the lending policies.* • *Public awareness was initiated and many projects related to Green Banking were launched.*
2014	*INDONESIA*	• *In Indonesia huge amount of capital was required to carry out sustainable development which hindered the process but the financial market of the respected country always promoted Green Banking.* • *Due to the financial sector the authority launched a Sustainable Finance Roadmap which contributed to the national growth.*
2016	*MEXICO*	• *A "Sustainability Protocol" was officially signed by Mexican banks for the development of Green Banking in the country.* • *The Protocol provides direction to sustainable lending, together with a plan to implement further actions.*
2014	*TURKEY*	• *Turkish banks had followed national goals as well as international principles for sustainable banking and it was duly practiced by the country.* • *Turkey bank also introduced sustainability guidelines for banking sector which showed a pleasant growth in Green Banking.*

Market barriers

For consumers, high upfront costs often make clean energy technology unattractive to adopt despite declines in clean energy technology costs. Historically, the clean energy sector has depended on taxpayer-funded grants, rebates, tax credits, and other subsidies to drive market development.

Ideally, private lenders would provide financing to building-owners to cover upfront cost of clean energy adoption (beyond what is covered by rebates). However, there are capital market inefficiencies and inherent challenges to financing clean energy that have resulted in inadequate investment by private lenders. Some private lenders do offer for clean energy projects, but typically charge interest rates that are relatively high and loan tenors that are short. Such terms make financing a clean energy project unattractive from the end-user's perspective. To be attractive from the end-user's perspective, financing terms would be such that the monthly cash flow from clean energy projects would be greater than the monthly payments for the cost of financing. This kind of cash flow structure is only possible with loan terms that match the expected lifetime of the projects savings, and with rates that are commensurate with the risk. Therefore, private capital offered at unfavorable terms (if it is available at all) undercuts the economic attractiveness of the project potential customers or project developers. A shortfall of private financing exists for several reasons. One reason is that there is a relatively short track record for clean energy financing, and therefore there is little data for lenders to rely on. Without data, and observable pipeline of similar projects, banks are left with high levels of uncertainty over how well different types of projects perform and how often borrowers repay their loans. This uncertainty leads to either hesitation to enter the market, high due diligence costs and/or unfavorable lending terms. Another reason for the financing gap is that many clean energy projects are small and distributed. Building efficiency upgrades and rooftop solar projects are inherently small investments that are geographically dispersed, with varying credit among counter parties. Heterogeneity in clean energy projects is more expensive for a private lender to underwriteat scale, making loans for clean energy projects potentially uneconomical from the perspective of the lender. A third reason for the financing gap is the lack of capital market liquidity and maturity. If a commercial bank provides an energy efficiency loan, it is unknown to the bank if it will be able to sell that loan to another lender or if it will have to hold that

SCOPE OF GREEN BANKING IN INDIA

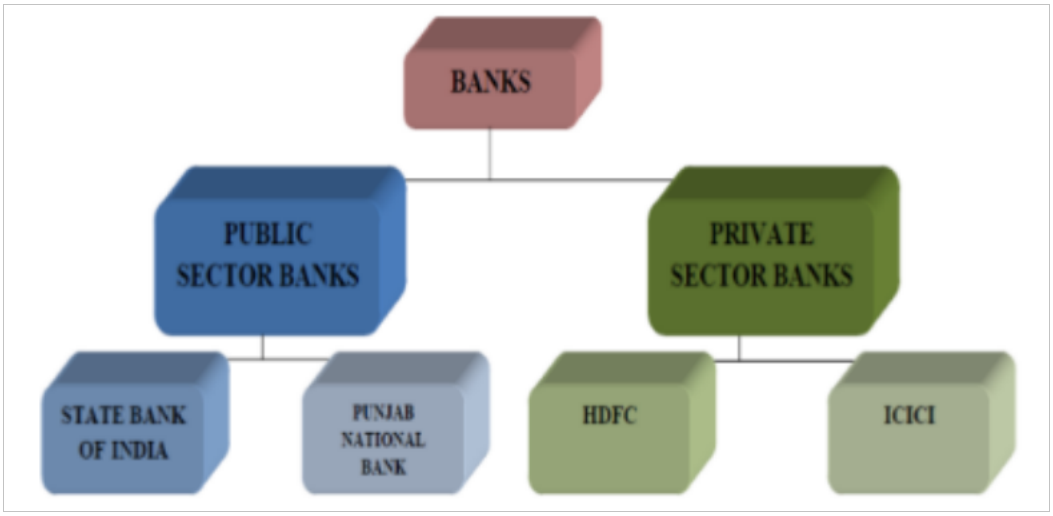
There has been a remarkable improvement in the working of banks in terms of cutting costs, increasing productivity, improving the profitability, controlling and management of the Non-Performing Assets (NPAs), face the risks, carry out the Asset Liability Management, manage the changes in interest rates, handle the foreign exchange rate fluctuations, comply with the regulator's requirements and finally improve the customer service to their best satisfaction. Green banking avoids as much paper work as possible and rely on online/ electronic transactions for processing so that we get green credit cards and green mortgages. Less paperwork means less cutting of trees. It also involves creating awareness to banking business people about environmental and social responsibility enabling them to do an environmental friendly business practice.

OBJECTIVES OF THE STUDY

1. *To evaluate the use of Green Banking Products in banking sector.*
2. *To examine and compare the green banking initiatives by Public and Private Sector Banks.*
3. *To review the status of green banking in India.*
4. *To comparatively study the green banking initiatives in India and Abroad.*
5. *To study the importance and concept of „Green Banking".*
6. *To identify the various initiatives taken by the select banks in India.*
7. *To identify Green Banking strategies.*
8. *To suggest the measures to be adopted by the select banks to ensure Green Banking.*

RESEARCH METHODOLOGY

The present study is based on secondary data which is collected from annual reports of the respective banks, reports of the RBI, time to time news published in various newspapers, web sites of the banks and research articles published in the relevant field



The study is confined to only three public sector banks (State Bank India, Bank of Baroda and Punjab National Bank) and three private sector banks (Industrial Credit and Investment Corporation Bank of India (ICICI), Housing Development Finance Corporation Bank (HDFC) and Axis bank). These are the top three public and private sector banks based on their net profit. For gathering information about the green banking activities undertaken by the banks that is mainly based on the annual reports of the selected banks from 2010 to 2015, Banks Business Responsibly Reports, official websites of the respective banks etc. The study is mainly based on the secondary source in form of various research papers, websites and eBooks. The researchers have placed their own observations regarding the same. Research-based case studies were created and provided by Coalition members and other

industry stakeholders.

USE OF GREEN BANKING PRODUCTS IN BANKING SECTOR

Go Online: Online banking includes internet banking, mobile banking, tab banking, phone banking, RTGS and NEFT transactions etc. The functions involved are pay bills online, online deposits, fund transfer, account statements etc. Through these banking activities banks are ultimately consume less paper, less energy and less expenditure on natural resources. Card based transactions: Banks have introduced a variety of card based transactions by launching green channel counters (GCC). GCC promotes card based transactions to their customers not only to reduce the consumption of paper and energy but also to save the time of customers. A variety of cards such as ATM, Credit and Debit cards, green remit cards, Foreign Travel Card, eZ Pay Card, Gift Card, Smart Payout Card etc. are available for customers.

Green Finance: Bank should finance environment friendly projects and environment friendly products such as solar equipments, recycled furniture, vehicle finance for low carbon emissions vehicles, home finance for green buildings etc. with giving some concessions in processing fee and concessional rate of interest. Green Infrastructure: Green infrastructure includes IT infrastructure (Data Centers), green buildings with sufficient natural lightening and air, generate electricity for their own use and waste recycling plants for recycle their own waste. Green infrastructure may also be considered Self Service Passbook Printers, Kiosks (Multi Function Kiosks and Self Service Kiosks), Cash Deposit Machines and Contact Centre etc. It facilitates to reduce banks internal carbon footprint. Use of power saving equipments: Use of solar powered UPS, GSL/LED bulbs, rain water harvesting by banks, establishing solar powered ATMs etc.

Sources of Capital

Green banks are usually seeded with public capital, and that capital can come from a wide variety of channels. The green bank finance model preserves limited supplies of public capital, allowing each dollar to be recycled continuously and utilized for multiple clean energy projects.

- ***Ratepayer surcharge***

A state or local government may place a small surcharge on energy bills within its jurisdiction, and may require that the funds raised by this charge be disbursed to a green bank. Or the government may repurpose an existing surcharge and direct the revenue to a green bank. The surcharge can provide green banks with a yearly influx of capital. The Connecticut Green Bank and New York Green Bank are capitalized in part by a systems benefit charge.

- ***Bond issuance***

Green banks can also issue bonds to obtain capital. Public sector bonds have the benefit of being tax exempt, allowing governments and other public authorities to pay relatively low interest rates to bond owners. A green bank's bonding authority allows debt investors to secure a steady stream of payments from an institution with a low risk of default. In exchange, the green bank receives capital that it can immediately invest in clean energy deployment.

- ***Types of bond's***

- *Green banks can be capitalized by bond issuances that are backed by state in which the green bank exists.*
- *Green banks can also be capitalized by issuing bonds that are backed by the green bank itself.*
- *Green banks can raise capital by issuing project bonds that are backed by the revenue-generating potential of the projects they will fund. Revenue Bonds from a Dedicated Cash Stream*
- *Other bonds backed by a dedicated cash stream (such as ratepayer fees, or by auctions of emissions allowances) can be issued to generate capital for a green bank.*
- *If a green bank is short on capital, it can securitize loans it has issued (assets) and, through a secondary market, sell them to another investor as a bond. For example, the Connecticut Green Bank sold $30 million in bonds backed by commercial efficiency loans to Clean Fund.*

- *Industrial revenue bonds and private activity bonds can be issued for certain green bank activities.*

➢ ***Revenue from carbon pricing***

Green banks can also be partially capitalized by the revenue raised from various carbon pricing policies such as carbon taxes, fees, and cap-and-trade systems. For example, both the NYGB and the CGB are capitalized in part by the revenue each state raises through the Regional Greenhouse Gas Initiative (RGGI).

➢ ***Direct budget appropriation***

A government can allocate dollars to a green bank as a part of its regular budget and appropriations process.

➢ ***Re-allocation of existing funds***

Sometimes an existing investment fund will be underused or completely unused. It may be possible to re-allocate some such funds and put the dollars to work in a green bank.

➢ ***Pension funds***

Pension funds can invest in deals or portfolios of deals generated by green banks.

➢ ***Foundations***

Foundations can make grants to green banks to fund startup costs, or they can make program-related investments in green banks and earn a return on their money in a way that is aligned with their mission.

➢ ***Community development financial institutions***

Community development financial institutions (CDFIs) can co-invest or provide startup capital for green banks. CDFIs can also provide important technical expertise in certain areas of green bank activity.

➢ ***Federal sources in the US***

- *The USDA and its Rural Utilities Service (RUS) program provide funding for infrastructure projects, including energy-related infrastructure, to rural communities. The RUS has funding available that*

could be used by green banks to finance projects in rural areas.

- *The United States Department of Energy (DOE) has programs, notably the Loan Program Office (LPO), which provides federal dollars for innovative clean energy companies and project portfolios. A green bank could take advantage of DOE money by building portfolios of projects designed to meet the standard set out by the LPO.*

- *The United States Environmental Protection Agency (EPA) has a Clean Water State Revolving Fund (CWSRF) which makes low-cost financing available for various water and energy infrastructure projects.[32] Green banks can apply for access to these funds.*

GREEN BANKING INITIATIVES BY INDIAN BANKS

I) Public Sector Banks

A) State Bank of India

1. SBI has launched Green Chanel Counter from 1st July, 2010 as an initiative and innovative step of green banking. GCC is available in 7052 branches and average number of daily transactions through it, is more than 100000. SBI collaborated with Suzlon Energy Limited and generate green power by installing 10 windmills with 15 MW aggregate capacities in the states of Nadu, Maharashtra and Gujarat.SBI is the first bank in the country for generating Tamil green power.Bank encourages shareholders to receive annual reports of the bank in electronic form and contribute nominal sum to a charitable. The acceptance of electronic annual report (eAR) by shareholders, bank has contributed Rs. 3.09 cr. (Rs.100/- for each eAR) to the SBI children‟s Welfare Fund in the financial year 2014. The SBI has installed Solar. It is the largest deployer of solar ATMs and saving more than 2000 tons of CO2 per year ATMs. Bank has undertaken tree plantation during monsoons and Bank has planted more than 450000 trees during last three years. Rainwater Harvesting Projects are also implemented in number of bank building. Bank has also involved in other initiatives such as construction of green building, waste water treatment plants, programs to sensitize staff on energy saving etc. Bank installed solar lamps in rural areas not having dependable electricity supply. Bank gives project loans at

concessional rate of interest to encourage reduction of green house gases by adopting efficient manufacturing practices. The bank has initiated a pilot project to determine its carbon footprint levels which is helpful to determine banks resource consumption pattern and able to take cost effective steps. Best IT Implementation Awards 2010 by PC Quest: SBI"s Project „Green IT @ SBI" was rated as the Best Green IT Project for its GREEN ATM installation. Bank has a signatory investor to the Carbon Disclosure Project and undertakes various environmentally and socially sustainable initiatives through its branches spread across the country.(WWF-INDIA, 2015)

B) Bank of Baroda

Bank has undertaken energy efficiency measures like up-gradation of AC, real time monitoring of temperature and pressure, energy efficient IT equipment selection, energy efficient CFL and LED lighting and solar powered UPS etc. Bank requested to shareholders those having shares in physical form to register their e-mail ids for further communication such as to serve any document, notice and annual report. Shareholder holding shares in Demat form are also requested to register their e-mail ids with respective depository for further communication purpose.According to banks domestic loan policy borrower should obtain NOC from pollution control board and produce it to bank. Bank do not extend any finance to the environmental hazardous industries such as Chlorofluoro carbon (CFC-11,12,113) & Halons-1211,1301,2402 being used in Foam Products, Refrigerators & Air-conditioners, Aerosol products, Solvents in cleaning applications, fire etc. On other hand in case of any manufacturing unit emit pollution bank insist to them for installation of water treatment plant for processing of such pollutants. The Bank gives preferential treatment for eco-friendly green projects such as Wind Mills/Solar Power projects and earns carbon credits. Bank has undertaken tree plantation program on the occasion of Foundation Day.To create awareness with respect to environmental issues bank has undertaken debates, essay competitions, painting competitions etc. for bank staff, staff children, and various school children. Moreover bank also supports for clean environmental activities of NGOs. Bank also promoted "Swatchh Bharat" campaign. While financing to real estate projects, bank observes the guidelines of National Building Code 2005 and promotes for harvest rain water, harnessing solar energy. The bank has implemented Lending Automation Processing System (LAPS)

system for appraisal of Retail & SME loans, reducing the paper consumption. As a part of green initiatives, bank has undertaken optimum technology utilization such as windows server virtualization, desktop virtualization and backup consolidation, improve data centre operational efficiency, application virtualization, Automatic Storage Management (ASM) & Real Application Clusters (RAC) Implementation, Bandwidth up-gradation, provision of backup link and use of new technology based on MPLS (Multi Protocol Label Switching). Bank has constructed buildings at Varanasi and Jaipur as per the standards of Indian Green Building Council (IGBC) and installed 5 KW Solar panel for external lighting, staircase lighting and basement lighting. Bank has implemented Solar Power Generation System (SPGS) in 19 branches it will provide alternative source of energy through UPS at branches. Baroda NonStop lobbies (eLobbies) comprise of Five Self Service machines viz. Cash Recycler, ATM, Multi Function Kiosk, Passbook Printer and Digital Signage System are providing 24x7 routine banking services. The numbers of eLobbies are 45 and 151 in 2014 and 2015 respectively.

C) Punjab National Bank

Bank has undertaken diverse activities under green initiatives such as using of solar powered ATM, PUM and CDM/Cheque Deposit Machines, using CFL Lamps instead of incandescent lamps, rain water harvesting, printing on both sides of paper, immediate repair of any water leakage, purchase multiple functioning composite fax machines, use of master sensor / master switches for lights, fans etc In credit appraisal bank has given preference to environment friendly projects wind mills and solar power projects. 3. As per bank lending policy bank always lend to those borrower who have NOC from pollution control board. Similarly bank insists to manufacturing unit to install effluent treatment project for processing of pollutants. Bank has untaken several environmental protection activities through CSR initiatives. The activities consist of Van Mahotsav, bank organized more than 249 Tree Plantation Drives, plantation along road sides, greening of traffic circles in different cities and maintenance of parks in residential areas etc. Bank conducted energy audit of all offices as energy conservation initiative and maintain electricity audit. Bank has installed Solar UPS at selected ATM sites in Bihar and U.P. where the power cut is high. Sapling of 3345 plants was executed in the 33 Tree Plantation Camps organized during the year 2014. Bank has set up green lobby at bank branch at

Bhikhaiji Cama Place, New Delhi. The Cash Deposit Machine, Passbook Updation Machine and Cheque Deposit Machine installed in the lobby and all are powered by solar energy. Bank has signed "Green Pledge" of the Ministry of New and Renewable Energy. Bank has set up a butterfly park in the compound of the Guruvayur temple which houses 18 types of medicinal plants. Bank has considered steps for promotion of sustainable development with particular reference to IFC Principles (The Equator Principles) on Project Finance. For promotions of wind energy bank has envisaged providing 1 percent of its total advances to it. Bank sanctioned nine wind energy projects with aggregate limit of Rs.185.81 cr. during the financial year 2010-11. Moreover banks awarded second prize for the "Best Wind Power Project Financer" by Wind Power India 2011. Bank also participated in Clean Delhi Drive to aware general masses to keep the city and the surroundings clean.

II) Private Sector Banks

A) ICICI Bank

*1. **Green Products & Services***

1. Instabanking - Bank has provided a variety of services under one umbrella and gives customers to convenience banking anytime anywhere through Internet banking, Mobile banking, Tab banking and Interactive Voice Response (IVR) banking. This reduces the carbon footprint of the customers because they do not have physical statements or travel to their branches.

2. Electronic Branches- Bank has set up fully electronic branches where the customers can

conduct all their banking transactions.

3. E- Drive-Bank has sent nearly 200 thousand annual reports in electronic form and bank have saved more than 60 tonnes of paper in the last quarter by sending e-statements to over 6.5 million bank accounts and 300 thousand credit card customers.

4. Vehicle Finance - Bank encourage to customers to use environment friendly vehicles by offering 50 percent waiver on processing fee for those car models which uses alternate 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.(IBN Live, 2015)

5. Home Finance – The bank has reduced the processing fee for purchasing homes in Leadership in Energy & Environmental Design (LEED) certified buildings.(IBN Live, 2015)

*2. **Green Engagements***

1. World Environment Day'- Bank has celebrated World Environment Day every year on 5th June. On the occasion, bank has undertaken sapling plantation drive, along with PUC drive where employees were encouraged to get their vehicle's PUC checked and vendors were set up at select towers for the same.

2. 'Go Social' campaign was launched for employees where every individual could post pictures of their green initiative on facebook and twitter, and spread the word to families and friends to join in the journey to Go Green.

3. 'World Environment Week' - continued from June 09 to 13 with each day of the week representing a different green theme: No plastic day, Reuse paper day, Carpool day, Duplex printing day and Save energy day.

4. 'Solar Branches'- Solar power is a source of renewable and non-polluting clean energy. Under the Bank"s Go Green initiative, about 294 rural low cost branches have been fitted with solar panels. As a result, bank has generated 1440 units of solar energy per branch annually which led to the energy consumption cost has reduced considerably.

*3. **Green Communication***

ICICI Bank has extensively capitalized the existing internal media and always insist to customers about Online Bill pay, Online Funds Transfer and Subscribing to e-statements for „paperless" and „commute-free" mode of conducting banking transactions.

B) HDFC Bank

To reduce environmental footprint bank has continuously undertaken green procurement, efficient lighting solutions, optimized travel planning, reducing paper consumption etc. Bank has send PIN unique code number of debit card through SMS rather than send it by post.(The Hindu, 2015) Bank has made multiple banking channel for customers such as internet banking, mobile banking, ATM etc. which helps for paperless banking.Bank installed solar ATMs and these ATMs use rechargeable Lithium Ion batteries for uninterrupted power supply. Bank has introduced server and desktop virtualization for reducing power consumption. Bank has initiated Energy Management Kits in branches such as use of star-rated and energy efficient air-conditioners, switching off the branch signage after 11 pm, replacing inefficient lighting with LED lights etc.(BRR, 2013-14). Banks are engaged in electronic media rather than print communication, establishment of multiple alternate service points paperless transactions, encouraging retail customers to subscribe to e-statement, employee awareness campaigns to promote environment friendly practices, deploying motion sensors to switch off lights in an empty room in select locations etc.(BRR, 2013-14). Bank managed their waste by tying up with vendors for recycling of paper and plastic in addition to that, they used reusable cups and plates.

C) Axis Bank

The annual GHG emissions have reduced through use of renewable energy during the year is 2443 tonnesCO2e.(BRR, 2014-15). Axis bank launched tree plantation program and planted 1 lakh sapling on 1st and 2nd august over thousand locations of the country. In August 2011, under the green banking activities with the theme of „Reduce, Reuse and Recycle" bank has processed all the dry waste recycle it into notebooks, notepads and envelopes. The program has helped to recycle around 87,206 kg.(Axis media center, 2015). Bank encouraged to their customers to use of e-statements and electronic

communications to reduce paper consumption. In the financial year 2014 banks 61% of shareholders have received their annual reports via e-mail.(Axis My Idea, 2015). As a part of green initiative banks corporate office „Axis House" at Mumbai which is designed and constructed as a Platinum LEED-Certified Green Building. (Axis My Idea, 2015)Axis House has received the „Platinum" rating awarded by the US Green Building Council for its environment friendly facilities and reduction of carbon emissions.(Axis Bank Customer Care, 2015). In November 2012, bank organized 'SPLASH' an all India painting competition for 7-12 age group children at all its 1741 branches to spread awareness about environmental issues. The themes of the competition are go green, save water, save life and one-earth and one family. (Axis SPLASH, 2015). Bank has adopted sustainable lending practices and without producing clearance from pollution control authorities" bank does not finance to pollutant industries and insist to install effluent treatment plant. (BRR, 2014-15). Under green banking initiatives, banks 29 percent of statements are issued electronically, 83 percent of Demat accounts e-statements issued through electronic medium, 92 percent of Demat welcome kits sent as e-welcome kit and 71 percent of shareholders registered for eAR.(BRR, 2014-15). Bank uses renewable energy for street lighting, collected water from rainwater harvesting system and sewage treatment plant, furniture used by bank which is made out of recycled materials etc. (greencleanguide.com, 2015). Axis bank initiated solar-based UPS for ATMs under its Independent ATM Deployment (IAD) model. (greencleanguide.com, 2015). To provide quicker services to the customers" bank has undertaken several initiatives such as instant PIN generation (Green PIN), e-welcome kits, service request through SMS etc.(BRR, 2014-15) Both public and private sector banks have effectively initiated Go Green Initiative. The common activities of green practices of the banks are Green Channel Counter, introduced a multiplicity of card based transactions, encouragement for eAR, e-statement, use of energy conservation devices, installation of solar ATMs, finance for eco-friendly projects, tree plantation and conducting awareness campaign about environmental issues etc. Based on above mentioned points it is clears that, public sector banks have shown better performance in terms of green banking activities than private sector bank.

SBI adapted Green Banking Stratergies to Home Loans Plan: The Result

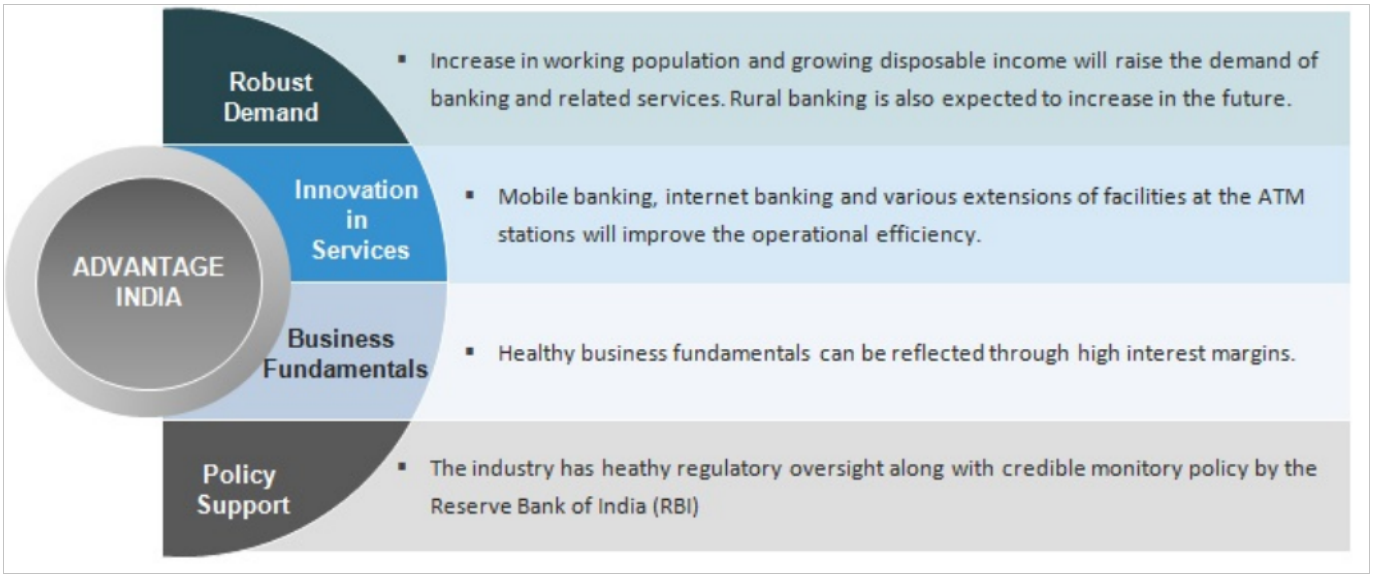
Table 1. SBI goes "GREEN" with home loans.

	Mar '14	Mar '13	Mar '12	Mar '11	Mar '10
Income					
Interest earned	136,350.80	119,657.10	106,521.45	81,394.36	70,993.92
Other income	18,552.92	16,034.84	14,351.45	14,930.42	14,968.15
Total income	154,903.72	135,691.94	120,872.90	96,324.78	85,962.07
Expenditure					
Interest expended	87,068.63	75,325.80	63,230.37	48,867.96	47,322.48
Employee cost	22,504.28	18,380.90	16,974.04	15,211.62	12,754.65
Selling and admin expenses	0	0	0	0	7,898.23
Depreciation	1,333.94	1,139.61	1,007.17	990.5	932.66
Miscellaneous expenses	33,105.70	26,740.65	27,954.03	23,884.37	7,888.00
Preoperative ExpCapitalised	0	0	0	0	0
Operating expenses	35,725.85	29,284.42	26,068.99	23,015.44	24,941.01
Provisions and contingencies	21,218.07	16,976.74	19,866.25	17,071.05	4,532.53
Total expenses	144,012.55	121,586.96	109,165.61	88,954.45	76,796.02
Mar '14	Mar '13	Mar '12	Mar '11	Mar '10	
Net profit for the year	10,891.17	14,104.98	11,707.29	7,370.35	9,166.05
Extra-ordinary items	0	0	0	0	0
Profit brought forward	0.34	0.34	6.05	0.34	0.34
Total	10,891.51	14,105.32	11,713.34	7,370.69	9,166.39
Preference dividend	0	0	0	0	0
Equity dividend	2,239.71	2,838.74	2,348.66	1,905.00	1,904.65
Corporate dividend tax	298.45	375.95	296.49	246.52	236.76
Per share data (annualized)					
Earnings per share (Rs)	145.88	206.2	174.46	116.07	144.37
Equity dividend (%)	300	415	350	300	300
Book value (Rs)	1,584.34	1,445.60	1,251.05	1,023.40	1,038.76
Appropriations					
Transfer to statutory reserves	8,353.03	10,890.29	9,067.85	5,218.83	6,495.14
Transfer to other reserves	0	0	0	0	529.5
Proposed dividend/transfer to Govt	2,538.16	3,214.69	2,645.15	2,151.52	2,141.41
Balance c/f to balance sheet	0.32	0.34	0.34	0.34	0.34
Total	10,891.51	14,105.32	11,713.34	7,370.69	9,166.39

ICICI Bank Record Of Profit And Loss after Implementing Green Banking

Table 4. Profit and loss account of ICICI Bank.

	Mar '14	Mar '13	Mar '12	Mar '11	Mar '10
	12 mths	12 mths	12 mths	12 mths	12 mths
Income					
Interest Earned	44,178.15	40,075.60	33,542.65	25,974.05	25,706.93
Other Income	10,427.87	8,345.70	7,502.76	6,647.89	7,292.43
Total Income	54,606.02	48,421.30	41,045.41	32,621.94	32,999.36
Expenditure					
Interest expended	27,702.59	26,209.18	22,808.50	16,957.15	17,592.57
Employee Cost	4,220.11	3,893.29	3,515.28	2,816.93	1,925.79
Selling and Admin Expenses	0	0	0	0	6,056.48
Depreciation	575.97	490.16	42.26	483.52	619.5
Miscellaneous Expenses	12,296.88	9,503.20	8,214.12	7,212.96	2,780.03
Preoperative ExpCapitalised	0	0	0	0	0
Operating Expenses	10,308.86	9,012.89	7,850.44	6,617.24	10,221.99
Provisions & Contingencies	6,784.10	4,873.76	3,921.22	3,896.17	1,159.81
Total Expenses	44,795.55	40,095.83	34,580.16	27,470.56	28,974.37
Net Profit for the Year	9,810.48	8,325.47	6,465.26	5,151.38	4,024.98
Extraordinary Items	0	0	0	0	-0.09
Profit brought forward	9,902.29	7,054.23	5,018.18	3,464.38	2,809.65
Total	19,712.77	15,379.70	11,483.44	8,615.76	6,834.54
Preference Dividend	0	0	0	0	0
Equity Dividend	2,656.28	2,307.23	1,902.04	1,612.58	1,337.86
Corporate Dividend Tax	231.25	292.16	220.35	202.28	164.04
Per share data (annualized)					
Earning Per Share (Rs)	84.95	72.22	56.09	44.73	36.1
Equity Dividend (%)	230	200	165	140	120
Book Value (Rs)	633.92	578.65	524.01	478.31	463.01
Appropriations					
Transfer to Statutory Reserves	3,506.65	2,878.03	2,306.49	1,782.45	1,867.22
Transfer to Other Reserves	0	0	0.33	0.26	1.04
Proposed Dividend/Transfer to Govt	2,887.53	2,599.39	2,122.39	1,814.86	1,501.90
Balance c/f to Balance Sheet	13,318.59	9,902.29	7,054.23	5,018.18	3,464.38
Total	19,712.77	15,379.71	11,483.44	8,615.75	6,834.54



Steps in green banking

- ***Go online***

Online banking is the thriving concept in young and corporate India. Online banking helps in additional conservation of energy and natural resources. Online banking includes:

a. Paying bills online,

b. Remote deposit,

c. online fund transfers

It helps in savings paper, energy, and expenditure of natural resources due to banking activities. Customers can save money by avoiding late payments of fees and save time by avoiding standing into queues and paying the bill. Use green checking accounts Customers can check their account details through ATM machines provided in bank kiosks or special touch screens in the branches of different banks. This can be called green checking of account. Often usage of online banking services like online bill payment, using debit cards for payments against payments, and online statements help the environment against detritions. Banks should promote green checking by giving some incentives to customers by giving higher rate of interests, waiver or discount in fees etc. Use green loans for home improvements. The Ministry of Non-renewable Resource in association with some nationalized

and scheduled commercial banks in India undertook an initiative to go green by allowing low interest loans to the customers who would like to buy solar equipment; the rate of interest is as low as 4% p.a. The new Green Home Loan Scheme from SBI, for instance, supports environmental friendly residential projects and offers various concessions. These loans are sanctioned for projects rated by the Indian Green Building Council (IGBC) and offer several financial benefits –5 percent concessions in margin, 0.25 percent concession in interest rate and processing fee waiver.

- ***Power savings equipment***

Banks directly contribute to controlling climate change and as an initial step they intend to start a campaign to replace all fused GSL bulbs, in all owned premises offices and residential. Banks have also initiated a feasibility study to make rain water harvesting mandatory in all the Bank's owned premises. In December 2009 Indusind Bank inaugurated Mumbai's first solar-powered ATM as part of its 'Green Office Project' campaign titled 'Hum aurHariyali'.

- ***Use green credit cards***

Banks are promoting different schemes of using plastic money rather than currency notes in order to save environment.

- ***Use of solar and wind energy***

Using solar and wind energy is one of the noble causes for going green. State Bank of India (SBI) has become the first bank in the country to venture into generation of green power by installing windmills for captive use. As part of its green banking initiative, SBI has installed 10 windmills with an aggregate capacity of 15 MW in the states of Tamil Nadu, Maharashtra and Gujarat.

- ***Mobile banking***

Mobile banking saves time and energy of the customers. It also helps in reducing use of energy and paper of the bank. Most of the Indian banks have introduced this paper-less facility.in order to be eco-friendly.

The traditional account opening process consists of following steps:

SUGGESTIONS

- ✓ *Set up separate green banking department in bank for effective implementation of green initiative.*
- ✓ *To give concessions for online banking and mobile banking users, card based payments.*
- ✓ *To conduct training program for customers to use online banking and mobile banking users. This will build confidence among them.*
- ✓ *To create awareness among businessman about environmental issues and encourage them for undertaking eco-friendly practices.*
- ✓ *Reduce cyber-crimes and ensure the customers regarding safe online banking and card based transaction.*
- ✓ *Make customers more and more aware about green banking through their website .*
- ✓ *Promoting different forms of electronic banking .*
- ✓ *Creating customer's awareness through the media.*
- ✓ *Carbon footprint reduction by saving energy and paper.*
- ✓ *Providing environment friendly rewards to customers.*
- ✓ *By financing more and more environment-friendly projects.*

- ✓ *Social Responsibility services done by banks.*
- ✓ *Converting to an online savings account and mobile banking is the easiest way to go green and help the environment. Green banking includes setting up direct deposit to receive your paychecks, receiving electronic statements from banks and by paying bills online.*

A SWOC Analysis: Green Banking

a) Strengths

1. Green Banking practice saves the time of customer as well as the bank.

2. It reduces the cost of bank operation and cost to the customer too.

3. The transaction can be done at any time and any place.

4. By financing in solar energy and wind energy program, the bank is reducing the carbon footprint.

b) Weaknesses

1. Lack of knowledge among the employees has been noticed.

2. There are some geographical barriers for the implementation of Green Banking practices.

3. All banks are not coming equally for the practice of Green Banking.

4. Problem of security is always with Green Banking practices

c) Opportunities

1. People are becoming more computer literate, so it is easy to start Green Banking practices and grasp the customer toward the activities.

2. Most of the customers are using ATM card only. So it is a time to start all the initiatives for Green Banking practices.

3. Mobile banking and Internet banking is increasing day by day, so it is a time to spread Green Banking practices.

d) Challenges

1. Startup face: Since it is a new concept, so the customer will take the time to adopt this.

2. Higher operating cost: Green Banking requires talented, experience staffs to provide proper services to customers and technology which costs highly. It requires renewable and recycling techniques, which is again costly. 3. Diversification problems: Green banks restrict their business transactions to those business entities who qualify screening process done by green banks. With a limited number of customers, they will have a smaller base to support them.

Realizing the difficulties faced by SSIs in maintaining environmental standards and its huge impact on economy and society, different state governments provide schemes to encourage small scale industries to adopt better environmental management practices such as:

- *In order to improve the quality of raw materials and also finished products, the SSI units are allowed for testing facilities for products / raw materials and also to obtain the BIS*

Certificate etc.

- *Grants and subsidies are given to an extent of 50% of the total for obtaining the ISO 9000*

Series (equivalent Indian Standard IS 14000 Series) in many states.

SCOPE OF GREEN BANKING IN INDIA

There has been a remarkable improvement in the working of banks in terms of cutting costs, increasing productivity, improving the profitability, controlling and management of the Non-Performing Assets (NPAs), face the risks, carry out the Asset Liability Management, manage the changes in interest rates, handle the foreign exchange rate fluctuations, comply with the regulator's requirements and finally improve the customer service to their best satisfaction. Green banking avoids as much paper work as possible and rely on online/ electronic transactions for processing so that we get green credit cards and green mortgages. Less paperwork means less cutting of trees. It also involves creating awareness to banking business people about environmental and social responsibility enabling them to do an environmental friendly business practice.

Benefits towards the banks: Green banking is very important in mitigating the following risks involving the banking sector:

a) Credit Risk: Due to climate change and global warming, there have been direct as well as indirect costs to banks. It has been observed that due to global warming, there have been extreme weather conditions which affect the economic assets financed by the banks, thus leading to high incidence of credit default. Credit risk can also arise indirectly when banks lead to companies whose businesses are adversely affected due to changes in environmental regulation.

b) Legal risk: Banks, like other business entities, face legal risk if they do not comply with relevant environmental regulation. They may also face risk of direct lender liability for cleanup costs or claims for damages in case they actually take possession of pollution causing assets.

c) Reputation Risk: Due to increasing environmental awareness, banks are more prone to reputation risk, if their direct or indirect actions are viewed as socially and environmentally damaging. Reputation risks emerge from the financing of environmentally objectionable projects.

OBJECTIVES OF THE STUDY

1. To evaluate the use of Green Banking Products in banking sector.2. To examine and compare the green banking initiatives by Public and Private Sector Banks.

3. To review the status of green banking in India.

4. To comparatively study the green banking initiatives in India and Abroad.

5. To study the importance and concept of "Green Banking".

6. To identify the various initiatives taken by the select banks in India.

7. To identify Green Banking strategies.

8. To suggest the measures to be adopted by the select banks to ensure Green Banking.

9. To identify the factors motivating for using green banking services.

GREEN BANKING IN THE UNITED KINGDOM	*GREEN BANKING AND INDIA*
Green banking usually refers to the fact that the bank in question performs its daily activities in an environmentally friendly way.	*The State Bank of India introduced green measures in several branches.*
It can use recycled paper or takes advantage of reusable energy along with supporting paperless statements; or they are planting trees in order to reduce the carbon footprint of the company.	*These include paperless statements that also results in faster praocesses for the customers.*
If a bank goes green, besides the facts that it protects the environment, it can also cut some of the costs.	*The deposits and the withdrawals will be made in a green way that now is available in **26 of the branches** of the bank.*
If you are thinking about which bank to have an account at, you should think about whether you are more concerned about your financial well-being or about the well-being of the planet.	*Although at the moment it is not known how many of the branches will have this possibility in the second phase, the bank is planning on introducing it in other branches as well.*
---NA---	*This is a win-win situation because the customers don't have any paperwork to fill out, while the bank can cut some costs.*

CHALLENGES

Key challenges faced by banks while implementing green banking strategies. Following are the challenges: a) Confronting Challenges to Going Green: Green banks support wonderful causes; they do face a lot of challenges as for-profit entities. Just like those socially conscious and environmental mutual funds, they are expected to encounter more obstacles than typical run-of-the-mill bank. b) Diversification matters: Green banks will be screening their customers and naturally, they'll be limiting and restricting their business to those entities that qualify. With a smaller pool of customers, they'll automatically have a smaller profit base to support them. If they focus their loans on certain industries, they open themselves up to being much more vulnerable to economic shifts. c) These banks are still startups: Apparently, it takes 3 to 4 years for a typical bank to start making money. Many green banks in business today are very new and are still in startup mode. It doesn't help that these banks are trying to get their footing during a recession. d) Banks are "specialized": Again, while the main goal of a green bank is to do good by supporting those who are taking care of the environment, the question here is — just how much money is there in these businesses and in the eco-friendly industry? Saving the environment does not necessarily equate to "making a profit". Hopefully though, this premise is proven wrong in this case and that green banks prove that they can survive, even as they face restrictive requirements for doing business.

Operating expenses and costs are higher: Green banks require specialized talent, skills and expertise as well, due to the kind of customers they are servicing. Employees, such as loan officers, need to have additional background and experience in dealing with green businesses and consumers. Plus, giving breaks to such clients via discounted loan rates can eat at their profit margins.

Reputation Risk: In all likelihood, due to growing awareness about environment safety, banking institutions are more prone to loose their reputations if they are involved in big projects, which are viewed as socially and environmentally damaging. There are also few cases where environmental management system has resulted in cost savings, increase in bond value etc.(Heim, G et al, 2005). In few cases the environmental management system resulted in lower risk, greater environmental

stewardship and increase in operating profit. Reputation risks involved in the financing of ecologically and ethically questionable projects.

Proper legislation is not yet framed: Government must design proper legislation of environmental rules for banks and ensure enforcement. The problems in India are the legislation is not yet framed and in few cases, things are not strictly enforced, but things can change overnight resulting in major compliance problems for the companies concerned and increased risk for the banks that have lent to them. There should be continuous dialogue relating to environmental matters with relevant audiences, including stakeholders, employees, customers, governments and the public.

Lack of environmental audits: Lack of environmental audits are required to determine the environmental status of a facility, property, and operation and to identify regulatory compliance status, past present problems and potential environmental risks and liabilities associated with the project. These should be done by an independent body or by any environment investigation team.

Less attention on environmental risk management: Less attention is given for the environmental risk management after the post transaction period.

Non automation of business process: Mostly banks are not adopting automation process Banks should conduct energy audits in all their offices for effective energy management using compact fluorescent lighting (CFL) can help banks save on energy consumption considerably.

Lack of clear policies: Clear policies are required to altering the present management systems to incorporate sustainability issues.

Unavailability of skilled employees: Skilled employees are required to implement the strategies properly.

CONCLUSION

Public and private sector banks are actively undertaken a multiplicity of green banking practices. Primarily, banks are creating awareness about environmental issues through green banking among bank staff, customer and mass people. Gradually, bank"s green banking activities have shifted from encouraging and implementing of e-banking to the recycle of the wastes, water treatment plants, rain water harvesting, using solar based equipments, constructing green building etc. in more effective manner.

India was far behind from other countries like China and Mexico in introducing and applying the concept of Green Banking. No initiatives were taken by the Indian banks to formulate the green concept in the society. The authors made clear that to attain sustainable development in the country imparting education and creating awareness was necessary. There are only small group of banks in India that lead in environment aspect. Some researchers researched on public as well as private sectors which reveal that public sector banks have taken more initiatives as compare to private sector. The studies also state the initiatives taken by Indian banks in respect of environment sustainability. Although not much initiatives has been taken by the banks other than SBI and ICICI. In various researches it was highlighted about the awareness of the employees and the public regarding the Green banking. Out of total people who were using online facilities nearly three fourth of them were unaware of the term Green Banking. The researchers affirm that the main obstacle in Green Banking was lack of education among the public. Imparting knowledge and

promoting day to day use of electronic payments can support the country to be environment friendly. Many guidelines as well as principles were issued by the government towards Green Banking but their implementation was sluggish in India.

On contrary other countries were quick enough to spread the concept of Green Banking. Several principles and regulations were issued by the banks towards sustainable environment which were implemented properly. Bangladesh, Brazil, China, Mexico and Turkey were some of the countries where Green Banking stretched rapidly. Bangladesh Bank was the World's first central bank, which had proper knowledge on Green banking. All respected banks in Bangladesh made their own set of rules and regulations to protect environment pollution and to lend money to those industries linked with renewable resources. Customers were provided with online-banking facilities covering money transfer and bills payment. Even the farmers were secured against any natural calamities. Green Banking in Bangladesh reduced the use of paper and promoted eco-friendly practices like solar energy etc. Secondly, Brazil banks were among the earliest banks to sign up to the Equator Principles. They used voluntary banking standards distribution of funds for environment issues represent a social consideration into bank lending. According to the studies more than 11% banks want to lend the money to the "new energy". Thirdly, in China the central government had created a national policy framework encouraging the adoption and expansion of green credit, a concept which encourages Chinese banks to consider environmental aspects like pollution, heath, safety of people into their lending practices. China's effort to green its financial sector has already produced some of the most innovative green finance policies in the world in comparatively short amount of time.

Other countries like Indonesia and Turkey did lot of investment to implement the Green Banking concept. Their green growth efforts were motivated by the government's dedication. In conclusion all international countries are attempting to design a green financial system to ensure the long-term sustainability of the country's economic development.

Green Banking has been boosting to improve the environment and promoting economic growth. Until a few years ago, most traditional banks did not practice green banking or actively seek investment opportunities in environmentally-friendly sectors or businesses. Indian banks are far

behind their counterparts from developed countries. If Indian banks desire to enter global markets, it is important that they recognize their environmental and social responsibilities. Only recently have these strategies become more prevalent, not only among smaller alternative and cooperative banks, but also among diversified financial service providers, asset management firms and insurance companies.

Further, those industries which have already become green and those, which are making serious attempts to grow green, should be accorded priority to lending by the banks. This concept of "Green Banking" will be mutually beneficial to the banks, industries and the economy. Not only "Green Banking" will ensure the greening of the industries but it will also facilitate in improving the asset quality of the banks in future. There are lot of opportunities and challenges for Indian banks in adopting 'Green Banking' as profitable business.

Indian Banks		
Public Sector Banks	**Private Sector Banks**	Foreign Banks
State Bank of India	ICICI Bank	AB Bank Ltd
Punjab National Bank	HDFC Bank	Bank of Bahrain & Kuwait B.S.C.
Bank of India	Kotak Mahindra Bank	Barclays Bank
Bank of Baroda	Yes Bank Ltd	BNP Paribus
Bank of Maharashtra	Axis Banks Ltd	CITI Bank N A

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Best green Bank Awards: A Healthy Implemenation toward Nature

Sustainable Banking Award- 2006

Sustainable Bank of the Year	Emerging Markets Sustainable Bank of the Year	Sustainable Bankers of the Year	Sustainable Deal of the Year	Sustainable Energy Finance Deal of the Year
ABN Amro, Netherlands	Banco ABN Amro Real, Brazil	ABN Amro, Netherlands	ABN Amro, Netherlands	Banco ABN Amro Real/Banco do Brasil
Bank Sarasin, Switzerland	Banco Itau, Brazil	Calyon, France	Banco ABN Amro Real, Brazil	Barclays Bank, UK
HSBC, UK	Nedbank, South Africa	Citigroup, US	Citigroup, US/Financiera Compartamos, Mexico	Calyon, France
WestLB, Germany	Standard Chartered, UK	Mizuho, Japan	Deutsche Bank, Germany	Credit Suisse, Switzerland
Westpac, Australia	Yes Bank, India	WestLB, Germany	HSBC, UK	WestLB, Germany

Source: Willem van Gelder, Profundo May 2006, BankTracK.

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