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# A Study on Green Banking Practices on Renewable Resource Energy

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## Abstract

*Today across the globe, people are facing many environmental problems like pollution, global warming, overpopulation, natural resource depletion, climatic conditions etc. The population of the planet is reaching unmanageable level as it faces shortage of resources like water, fuel, and food. Global researchers are making efforts to shift to renewable sources of energy like solar, wind, biogas and geo thermal energy. The cost of R&D, installing the infrastructure and maintaining these renewable sources are expensive. Initiation of such effort at global, country and state level is very complex task.*

*In this regard presently **Green banking** practice is one of the measures on such environmental issues for sustainable development. A conventional bank becomes green bank by directing its operations towards the betterment of environment. This system of banking which is promoting environmental friendly practice is popularly known as **Green Banking**.*

*This paper focuses on studying the role of Green Banking activities of commercial banks on renewable resource energy. Inclusive banking strategies have been recommended in this study for initiation at micro level to ensure sustainable economic development.*

**Key words:** *Green Banking, Environmental Issues, Renewable resource energy.*

## Introduction

The population of the planet is reaching unmanageable level which is leading to the shortage of resources like water, fuel and food etc. Population explosion, in less developed and developing countries is limiting the existing resources. Overpopulation leads to depletion of natural resources, this in turn is another crucial current environmental problem. Many countries including India have made commitments necessary to take up continuous endeavors across the world to measure and mitigate the risk of depletion of existing scarce resources. So, the global researchers are making efforts to shift to renewable sources of energy like solar, wind, biogas and geo thermal energy. But the cost of installing the infrastructure and maintaining these sources are expensive. Initiation of such effort at global, country and state level is very complex task. In this scenario as a part of social responsibility, banks have to play a major role in supplementing government efforts towards the growth of renewable resource energy. One step ahead in this direction is "**Green banking**".

Apart from making profits, banks have considered environmental issues by adopting eco-friendly activities in their internal and external operations. By initiation of Green banking operations a country can be benefited both at micro (Individual households) and macro (corporate houses) levels. Green bank provide solutions by addressing more social and environmental problems by adopting different eco-friendly banking practices for their customers and also financing green and pollution free projects. Eco-friendly practices are made by the banks to reduce the internal carbon footprint and external carbon emission from their regular banking activities. The banking sector is one of the major sources of financing industrial projects, which causes maximum carbon emission. Therefore, the banking sector shall promote environmentally sustainable and socially responsible investment in energy like solar, wind, biogas and geo-thermal.

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This paper attempts to study the green practices adopted by the Indian and foreign banks towards one of the environmental issues like renewable resource energy. The study is divided into two parts; part one studies the environment-friendly practices adopted by the Indian and foreign banks and other part studies the green banking practices towards renewable resource energy financing to meet requirements both at corporate and household levels.

### **Objectives of the Study**

- i) To study the current environmental issues with special reference to the benefits of using renewable sources of energy.
- ii) To discuss the meaning, role and practices of green banking adopted by various institutions in the world and Indian banks towards the environment.
- iii) To study the adoption level of green banking practices with respect to renewable resource energy by various institutions in the world and Indian banks at corporate and individual household levels.
- iv) To create awareness about green banking practices to the general people.

### **Rationale of the Study**

In the age of global environmental issues like over population and depletion of natural resources, there is an urgent need to promote consciousness among the people regarding the environmental impacts of adopting various green banking practices. Apart from delivering usual services for clients, the practice of green banking concept must be done at inclusive level to the target customer or clients for mitigation of Green House Gases globally. There is general lack of adequate awareness regarding the environmental-friendly banking practices adopted by the banks among most of the people. This particular study will facilitate the people to be acquainted with the adoption of these eco-friendly banking practices especially related to renewable resource energy realizing the tremendous benefits of using it.

### **. Methodology of the study**

The study is conducted based on secondary data which is collected from the sources like magazines, different journals & articles, various institutions and bank's websites.

### **Review of literature**

#### **Renewable resource energy**

There are many valuable things in nature that are necessary for us to live on this Earth. Some of these are air, water, soil, forests, animals, minerals and fuels. They are known as natural resources. We use these natural resources in our daily lives. There are two types of natural resources: renewable and non-renewable. Renewable resources are those that will either never run out or are constantly renewed by natural processes. Animals, crops, forests, water, soil, and sunlight, are renewable resources. Non-renewable resources are those which once used up, are exhausted, and are either non-renewable by nature, or renewed very slowly over millions of years. Examples are fuels like coal and petroleum, and minerals like gold, iron and copper. We shall make best practices for production and consumption of such resources. To make best use and save these minerals we shall depend more on sources of energy that will never get used up, for example **wind energy , solar energy, bio thermal energy and bio gas**. In our country 60% of the population is using fire wood for cooking food in their households. According to a report, if all the Indian families use natural gas for cooking, one third of the pollution can be controlled overnight. In our country maximum of the energy is being produced from coal, is the main cause for environmental pollution. We shall depend more on alternative sources of energy for cooking and Industrial needs. Green banking operations can benefit the environment in reducing the greenhouse gases.

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## Benefits of Renewable Energy

From solar and wind power to geothermal, biomass and hydroelectric energy, here are six benefits of alternative energy sources that we really need to consider.

### 1. Reduced greenhouse gas emissions

A wealth of alternative energy sources, from wind and solar energy to hydroelectricity and biomass fuel offer a way to power homes, vehicles or businesses without using fossil fuels. That means renewable energy sources can help reduce the amount of greenhouse gas emissions we put into the air. Wind power and solar power are fairly self-explanatory; they use the power of the wind or the sun to generate electricity. This electricity is generally stored in batteries and can be distributed like traditional utility electricity.

Hydroelectricity works in much the same way, by using a natural power source to generate power. Geography can be an issue with all three sources, but the payoff is great for areas well suited to wind, solar and hydroelectricity: they produce zero emissions.

### 2. Create jobs

Renewable energy tends to be more labor-intensive than fossil fuel sources of energy, thus it creates more jobs. According to the Union of Concerned Scientists, thousands of people already work for companies connected with renewable energy. This includes people who work for utility companies as well as those who work for companies that produce parts for utilities, like wind turbines or solar panels. The Union of Concerned Scientists conducted an analysis in 2009 centered on an ideal of 25 percent of our energy coming from renewable sources by 2020. A staggering 202,000 new jobs would be needed to support this infrastructure by that time.

### 3. Diversify our energy supply

“Reducing our dependence on foreign oil” is a phrase used by many political candidates on both sides of the fence. Ironically, some of these same politicians don’t see how beneficial renewable energy is in terms of diversifying our supply to reduce our dependence on oil companies. Hydropower, for example, is a great source of domestically-produced power that generates power directly to the grid. The same can be said for solar, wind and geothermal energy sources. In fact, according to *National Geographic*, geothermal energy from “underground reservoirs of steam and hot water can be tapped to generate electricity or to heat and cool buildings directly,” which means geothermal energy can be accessed all year long, making it both renewable and reliable.

### 4. Improve public health

If we use renewable energy more often, then we’ll all reap the health benefits. A study from the Clean Energy and Climate Change Office of the U.S. Environmental Protection Agency found that Americans spend an estimated \$361.7 to \$886.5 billion each year on our health for conditions related to the use of fossil fuels. Such conditions include cancer, neurological problems, heart disease and more.

One renewable resource to consider is biomass. Biomass uses agricultural or restaurant waste like vegetable oil is a great source of biomass energy- as well as corn and soybeans to power vehicles that would otherwise run on fossil fuels. Biomass helps eliminate fossil fuel emissions while cutting down on the waste going to landfills.

### 5. Provide individual energy independence

With climate change, extreme weather has become a fact of life. It’s hotter in the summer and colder in the winter. In reaction, we tend to crank up the heat in the cold months and use air conditioning to keep the temperature way down in the summer. This behavior leads to the necessity of brownouts or rolling blackouts in some areas, leaving houses without much-needed electricity.

Solar energy is a renewable energy source that you can install right on, or beside, your house. When it’s attached to the grid, any power you don’t use goes to the utility company, and they may end up having to pay you for power instead of the other way around. But one of the coolest things about having your own renewable source of energy is that you’re independent of neighbors or the utility company. This means

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everyone else could be experiencing a brownout in the summertime while you're using the power of the sun to keep cool.

## 6. Save money

Once the initial cost of construction and setup of a renewable power source is covered, it can quite quickly begin to pay for itself. Some sources allow you to save money quicker than others. Solar, for example, requires a large investment up front, so the payoff is delayed when compared to other sources. However, proper storage decisions, such as the amount and quality of batteries used, can help reduce costs on a grand scale.

It's high time we look at some of the benefits of renewable energy for what they are: ways to help us all live better, healthier lives. If we can save a little money and enjoy some independence in the process, that's even better.

## Introduction to the concept of Green Banking

Green banking refers to those practices and guidelines that make banks environmentally, economically and socially responsible. Green banking refers to the banking business conducted in such areas and in such a manner that helps the overall reduction of external carbon emission and internal carbon footprint. To aid the reduction of external carbon emission, banks should finance green technology and pollution free projects. Although, banking is never considered a polluting industry, the present scale of banking operations have considerably increased the carbon footprint of banks due to their massive use of energy ( e.g., lightning, air conditioning, electronic/electrical equipment's, IT, etc.), high paper wastage, lack of green buildings etc. Therefore, banks should adopt such technologies, processes and products which result in substantial reduction of their carbon footprint as well as develop a sustainable business.

It means that banking business should be conducted in such areas and in such a manner which would help in promoting environmental-friendly practices and reducing carbon footprint from banking activities. Green banking is like a normal bank, which considers all the social and environmental/ ecological factors with an aim to protect the environment and conserve natural resources. It is also called as an ethical bank or a sustainable bank. They are controlled by the same authorities but with an additional agenda toward taking care of the Earth's environment/ habitats/ resources.

A **green bank** is green investment bank, clean energy finance authority, or clean energy Finance Corporation is a financial institution typically public or quasi-public that uses innovative financing techniques and market development tools in partnership with the private sector to accelerate deployment of clean energy technologies. Green banks use public funds to leverage private investment in clean energy technologies that, despite being commercially viable, have struggled to establish a widespread presence in consumer markets. Green banks seek to reduce energy costs for ratepayers, stimulate private sector investment and economic activity, and expedite the transition to a low-carbon economy.

In the United States, green banks have been created at the state and local levels. The United Kingdom, Australia, Japan, and Malaysia have all created national banks dedicated to leveraging private investment in clean energy technologies. Together, green banks around the world have driven approximately \$20 billion of clean energy investment.

## Strategies for Green Banking Approach

The recent developments in Indian banking technology have transformed banking from the traditional system to more inclusive one incorporating the interests of customers, businesses and the environment. Nowadays, banking operations can be carried out through various banking channels such as ATM, Internet banking, mobile banking, green channel counters, kiosk banking, credit card, debit card, etc. The incorporation of social and environmental strategies into the development goals of the banks can help them in arriving to an effective environmental management system.

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### **Following are some of the steps that can be taken for going green in banking**

**A. Going Online:** - Online banking is a new and fast developing concept in India. It helps in conservation of energy and natural resources. Online Banking incorporates: 1. Paying bills online, 2. Remote deposit, 3. Online fund transfers and 4. Online statements. Online savings account and mobile banking is the easiest way to do your bit to bank green and help the environment. Customers can save money by avoiding late payment of fees and save time by avoiding standing in queues and paying the bill from home online. These are also highly effective ways to keep track of your finances and to avoid late payment of fees. Telephone bills, cable bills, utility bills, credit card payments and mortgage payments can all be paid electronically.

**B. Using Green Checking Accounts:** - Customers can check their accounts on ATM or special touch screens in the banks. Using a green checking account helps the environment by utilizing more online banking services including online bill payment, debit cards, and online statements.

**C. Green Loans for Home Improvements:** - The Ministry of Renewable Resource in association with some nationalized and scheduled banks undertook an initiative to go green by paying low interest loans to those customers interested in buying solar equipment and to construct bio-gas plant. For example, the new Green Home Loan Scheme from SBI will support environment-friendly residential projects and offer various concessions.

**D. Power Saving Equipment:** - Banks can 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 office premises and residential areas. Banks can also make a feasibility study to make rain water harvesting mandatory in all the Bank's owned premises.

**E. Saving Paper:** - Bank should purchase recycled paper products with the highest post-consumer waste content possible. This includes monthly statements, brochures, ATM receipts, annual reports, newsletters, copy paper, envelopes etc. Whenever available, vegetable-based inks are used instead of oil-based inks.

**F. Green Credit Cards:** - Some of the banks introduced Green Credit Card. The benefit of using a green credit card is that banks will donate funds to an environment-friendly non-profit organization from every rupee you spend on your credit card to a worthwhile cause of environment protection.

**G. Use of Solar and Wind Energy:** - Using solar and wind energy is one of the noble cause for going green.

**H. Mobile Banking:** - It saves time and energy of the customers. It also reduces the use of energy and paper of the bank. This helps to check balance, transfer funds or pay bills from mobile.

### **Green Banking Products**

- Green Loans: means giving loans to a project or business that is considered environmentally sustainable.
- Green Mortgages: refers to type of mortgage that provides you a money-saving discount or a bigger loan than normally permitted as a reward for making energy efficient improvements or for buying a home that meets particular energy efficiency standards.
- Green Credit Cards: Be it in form of environmentally friendly rewards or using bio-degradable credit card materials or promoting paperless banking, credit cards are going green.
- Green Saving Accounts: In case of Green Saving Accounts, banks make donations on the basis of savings done by customers. The more they save, the more the environment benefits in form of contributions or donations done by banks.
- Mobile banking and online banking: These are new age banking forms include less paperwork, less mail, and less travel to branch offices by bank customers, all of which has a positive impact on the environment.
- Go Online Use Green Checking/ Savings Accounts Use Green Loans Green Mortgages
- Use Green Credit Cards Green money market accounts Remote deposit (RDC) Online And Mobile Banking

### **Green Banking Initiatives in India**

The Government of India has issued guidelines / instructions to banks on Green Initiatives. In order to implement the green initiatives of the government, all public sector banks and all regional rural were asked to:

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- I. Increase use of Electronic Payment. II. Increase use of Core Banking Solution (CBS).  
III. Increase use of Video Conferencing. IV. Offer centralized payment system

### Steps taken by Banks

- **State Bank of India** launched its ‘Green Channel Counter’ facility at 57 selected branches as a step towards paperless ‘Green Banking’ for deposit, withdrawal and remittance transactions. With this facility the customers need not fill up any pay-in slips or draw cheques for depositing or withdrawing money from their accounts. At the Green Channel counter, there is a Point of Sale Machine (POS), on which the customer swipes his card. He is then asked by the machine to select the type of transaction, viz. (0) Cash Deposit, (1) Cash Withdrawal and (2) Funds Transfer. And thus the transaction is completed without paper usage. **SBI became 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, it installed 10 windmills with an aggregate capacity of 15 MW in the states of Tamil Nadu, Maharashtra and Gujarat.
- **IndusInd Bank Ltd** Under its campaign ‘Hum aur Hariyali’, it has inaugurated Mumbai’s **first solar-powered ATM to save on 1980 Kwh of energy annually.** It is also supporting various environment friendly finance programs and projects.
- **IDBI** has been actively complementing Government of India’s policies, initiatives and set targets for sustainable economic development and environment protection.
- **ICICI Bank’s** Green initiatives range from **Green offerings/ incentives, Green engagement to Green communication to their customers.** Paperless initiatives like **e-statements and e-greetings helped ICICI Bank save 30,000 trees from being felled in 2009-10, besides cutting down spending on stationery by Rs 7.36 crore.**
- The recycling initiative of **Axis bank** under the Green Banking banner has helped the bank use around 21,572 kilograms of dry waste productively.
- **Punjab National Bank** launched green e-vigilance for the bank which involves **paperless dealings in complaint and vigilance procedures through e- network which drastically cuts down cost and time.**

### The Most Environmentally Ethical ‘Green Home Scheme’ by SBI

One of the most important green initiatives the bank has introduced is ‘Green Home Scheme’ through which we can save 20%-30% energy and 30%-50% water. Under Green Home Scheme the bank offers subsidy and interest rates reduction to supports environment friendly housing projects. The SBI is the first bank in India to offer Green Home Loan. Now any green citizen who would like to construct a new green home, and also to buy green energy products like Solar water heater, Solar home lighting system, Solar power pack etc., he can get capital as well as interest subsidy from the same bank (SBI Circular, 2008-09). By launching this product, the bank wants to support an environment friendly residential project, which has been rated by the Indian Green Building Council (IGBC).

**Special feature of the scheme:** Customers going for the green projects will enjoy 5% discount on the margin money, 0.25% concession on interest rate and waiver of processing fees. The bank provides the loans in two categories fixed and floating. For loans above 75 Lakh the interest rate will be only floating rate based on State Bank Advance Rate (SBAR).

### Green Bank Global Network

The Green Bank Network was formed in 2015 by the Australian Clean Energy Finance Corporation, the Japan Green Fund, Malaysia Green Technology Corporation the Connecticut Green Bank, NY Green Bank, and Green Investment Group (formerly named UK Green Investment Bank). These banks are working with two non-profit organizations, the Natural Resource Defense Council (NRDC) and the Coalition for Green Capital (CGC), to build the network, with funding from Climate Works for 2016.

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The Green Bank Network is an international membership organization focusing on solutions to clean energy finance. Members of the Green Bank Network are investing in areas such as renewable energy, energy efficiency, LED lighting, energy storage, wind and solar farms, and more. For example, UK Green Investment Bank invested \$4.5 billion in 100 UK green infrastructure projects. Malaysia's Green Technology Corporation has worked with 28 financial institutions to make green investments, and projects supported have led to the creation of over 4,600 jobs. Since its formation five years ago, the Connecticut Green Bank has closed transactions totaling \$175 million of its capital for a total investment of \$1.1 billion in total project costs. These projects are reducing the energy burden of nearly 25,000 families and businesses and reducing 3.7 million tons of carbon dioxide emissions.

The Green Bank Network says it has closed transactions that are expected to mobilize more than \$29 billion in public and private capital for clean energy projects around the globe. The International Energy Agency estimates that in order to deliver on the climate pledges made by world leaders to the UN, \$13.5 trillion must be invested in energy efficiency and low-carbon technologies between 2015 and 2030, or \$840 billion annually.

### **Connecticut Green Bank (CGB)**

The Connecticut Green Bank (CGB) was established in 2011 and was the first green bank in the United States. As the nation's first full-scale green bank, the Connecticut Green Bank leverages public and private funds to drive investment and scale up clean energy deployment across the state. They offer incentives and innovative low-cost financing to encourage home owners, companies, municipalities, and other institutions to support clean energy investment.

In its first four years of existence, the CGB has stimulated \$663.2 million of investment in clean energy projects, three-fourths of which came from the private sector. The increase in clean energy investment coincided with a huge decline in the number of taxpayer-funded clean energy grants. In effect, the CGB increased clean energy investment while reducing taxpayers' financial burden.

### **New York Green Bank (NYGB)**

NY Green Bank is a State-sponsored, specialized financial entity working with the private sector to increase investments into New York's clean energy markets, creating a more efficient, reliable and sustainable energy system. NYGB is a cost-effective and complementary component of New York State's portfolio of clean energy programs. They work with clients and counterparties to address and alleviate specific gaps and barriers in current clean energy capital markets through a variety of approaches and transaction structures. Since inception, NYGB has utilized innovative approaches to financing structures to mobilize clean energy activity and private capital in New York State, reducing the need for further ratepayer funding.

### **California CLEEN Center**

The California Lending for Energy and Environmental Needs (CLEEN) Center operates as the state's green bank. One of its major initiatives is to finance energy efficiency projects and upgrades for municipalities, universities, schools, and hospitals. It exclusively facilitates commercial projects and upgrades. Interested parties propose a project and apply for financial assistance with the CLEEN Center. CLEEN projects receive funding ranging from \$500,000 to \$30 million.

### **Hawaii Green Infrastructure Authority**

The Hawaii Green Infrastructure Authority was created in 2014 to finance clean energy development in Hawaii. The first program to be adopted was the Green Energy Market Securitization (GEMS) program, an effort to provide the low-to-moderate income market with solar lease financing. For geographical reasons, electricity is more expensive in Hawaii than anywhere else in the United States. The advent of solar leasing has allowed many Hawaiian home owners to install solar panels, but solar market penetration has hardly

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reached low-credit households. The cash flow positive financing generated by GEMS is designed to help low-to-moderate income Hawaiians enter a market from which they have historically been excluded.

### **Rhode Island**

In 2015, state legislators converted the Rhode Island Clean Water Finance Agency (RICWFA) into the Rhode Island Infrastructure Bank (RIIB). The RIIB offers both residential and commercial PACE programs designed to reduce energy costs for consumers. The RIIB also created the Efficient Buildings Fund, a program used to provide low-cost financing for energy efficiency and renewable energy projects in public buildings.

### **Montgomery County, MD**

Montgomery County, Maryland is the only county in the U.S. that has created a local green bank. The Montgomery County Green Bank (MCGB) was capitalized with \$20 million from the settlement that accompanied the merger of utilities Pepco and Exelon.

### **Malaysia**

Malaysia's Green Technology Financing Corporation was launched in 2010 as a component of the government's National Green Technology Policy. Through the Green Technology Financing Scheme, the corporation offers companies a 2% interest rate buy down and 60% guaranteed financing for green technology projects.

### **United Kingdom**

In 2012, the UK government created the UK Green Investment Bank (GIB) to attract private funds for the financing of the private sector's investments related to environmental preservation and improvement. It is structured as a public limited company and is owned by the Department for Business, Innovation and Skills (BIS). Its headquarters are in Edinburgh, where it is also registered, and it has a secondary office in London. The GIB works with a variety of technologies including energy efficiency, waste and bioenergy, offshore wind, and onshore renewables. UK's GIB has committed £2.6 billion to 76 domestic infrastructure projects, mobilizing over £10 billion of private investment.

### **Australia**

Australia's Clean Energy Finance Corporation (CEFC) was founded in 2012 with the purpose of mobilizing investment in renewable energy, energy efficiency, and low emissions technologies. At the beginning of fiscal year 2016, the CEFC had invested \$1.4 billion of its own capital and attracted \$2.2 billion in private sector investment.

### **Findings & Suggestions**

- ) Global Green banking network activities have made considerable effort on maximum of the environmental issues towards overall reduction of external carbon emission, and internal carbon footprint by extending credit finances for eco-friendly projects. In foreign countries all necessary steps were taken by the related authorities, and institutions in promoting credit finance for corporate and individual houses.
- ) It is observed that green banking is still at infant stage in India. All banks have initiated green banking activities in controlling internal carbon foot print and external carbon emission, by extending credit finance for environment friendly projects for corporate houses only.
- ) SBI succeeded in few areas in providing finance through 'Green home scheme' for individual households, but still it has to extend the same activities all over the country.



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- ) Since our country is concentrating more on inclusive growth, the services of green banking can be expanded by **the conventional banks by promoting credit finance** for individual houses both at rural and urban areas to a greater extent.
  - ) Considerable efforts and measures must be taken up by the Government, local authorities and banks in financing renewable resource energy plants for households at rural and urban areas.
  - ) Make customers/people aware of green banking practices by providing environment friendly financing for installation and maintenance of solar power projects and bio gas plants.

### Conclusion

Green banking success would be more if the world governments start to revise their economic paradigms from being 'monetary economics' to 'ecological economics', and begin to transform their accounting principles from purely being financial to ecological/operational energy. This requires passionate involvement, dedication and commitment from all the stake holders like Government, Financial institutions, banks, regulators, corporates and community at large. Every small 'GREEN' step taken today would go a long way in building a greener future. 'Go Green' is an organization wide initiative to create an awareness and consciousness about environment. All over the world, banks and financial institutions are concerned about the overall impact of depletion of environment. Currently, in India, the concept of green banking is catching up and banks are actively looking for ways to portray themselves as a Green Bank. Implementing environmental standards for lending, this is really a proactive idea that would enable eco-friendly business practices which would benefit our future generations.

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