



Green Finance: A Study about Green Banking in India

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Abstract

The credo “Go Green” has gained currency in today’s eco-friendly society and is now germane to all facets of the business. Any financing that contemplates the environmental effect and intensifies ecological sustainability can be used to depict green finance. Green finance, which is defined as the financial backing provided for projects that deal with environmental protection, vindicating the consequences of climate change, investing in renewable sources of energy, intensifying the green cover, and all other ventures related to sustainable development, is a deft pursuit emerging as a priority for public policy. The banking sector is not considered polluting but impacts the environment by raising energy consumption such as lighting, air conditioning and paper consumption. Sustainable green banking, where decisions about lending and investing are made based on environmental screening and risk assessment to fulfil sustainability criteria and insurance services that cover environmental risk, are significant constituents of green finance. In-house and outdoor carbon footprints can be dwindled by ensuring ecologically friendly procedures and green lending. This study reviews green banking literature and pinpoints application challenges. The research shows that the dearth of knowledge and tutelage is a significant barrier.

Keywords: Financial investments, environment, corporate social responsibility, banking sector

Introduction

Green Finance

Green finance is an adroit activity incipient as a priority for public policy which is expressed as the monetary backing offered for the projects that dispense with environmental protection, vindicating the consequences of climate change, investing in renewable sources of energy, intensifying the green cover, and all other ventures related to sustainable development. Fossil fuels may still predominate in energy investment, despite recent worldwide investment in renewables and energy efficiency declining by 3% and perhaps stalling further. This may jeopardise the expansion of green energy, which the world needs to achieve its climate and clean air goals. Many industrialised and emerging countries continue to support coal energy programs. The extra carbon dioxide produced by new coal-fired power plants might also erase any emission reductions made by other countries. To accomplish the purpose of sustainable development, a new file needs to be opened for green financing.

Green Banking

In 2009, Florida was the first state to adopt green banking. But recently, investors worldwide have started to understand the scope and importance of green financing. Eco-savings accounts, green central banking, green credit cards, green auto

loans, carbon market instruments, energy efficiency mortgages, community-based green funds, alternative energy venture capital, and green mortgages are just a few of the cutting-edge green financial products that are readily available throughout the biosphere. Because of the inherent dangers of these cutting-edge technologies, financial institutions are often more interested in fossil fuel efforts than green ones. A new file for green financing needs to be launched to accomplish sustainable development goals. Unfortunately, there isn’t enough reliable information to compile, examine, and pinpoint green finance for further study and policy development. However masterfully done, the studies carried out by renowned academics and intellectuals demand broader awareness of green banking and funding. Green banking is similar to traditional banking in that it considers all social, environmental, and ecological concerns, focusing on resource conservation and environmental protection. It is also known as a sustainable bank or an ethical bank. Although they are subject to the same rules and regulations, they have an extra agenda focused on protecting the planet’s environment, habitats, and resources. In a world where environmentally friendly policies and accessible finance are hard to come by, a banking project combines the two. A loan for an energy-efficient car, money for energy-saving home improvements, and loans for environmentally conscious businesses are all included in green banking. More

and more financial institutions are noticing and acting on global green efforts. Organisations use several approaches to green banking or sustainable banking.

Sustainable Banking

On the other hand, sustainable banking can be defined as the prudent use of all bank resources, the prevention of waste, and the prioritisation of sustainability decisions. Banks have learned that sustainability and profitability go hand in hand as businesses try to reduce costs, streamline operations, and develop long-term systems. Their corporate clients share this realisation. Green banking will ensure the sector is more environmentally friendly and make it easier to raise banks' asset quality in the future. Financial institutions like the banking industry, multilateral organisations, and multilateral financial and development institutions play a significant role in providing environmentally and socially responsible investment projects, making them one of the critical factors influencing overall industrial activity and economic growth. "Green Banking" is an endeavour by the banks to encourage the development of environment-friendly enterprises while also regenerating the environment. It entails fusing technological advancements with customer behaviour modifications.

Green finance and green banking promote environmental protection and sustainable resource usage. Inexperienced finance can govern the flow of funds, control ecological risk, and allocate environmental and social resources if green finance's market mechanism is logical. Green finance can cut GHG emissions and create returns like traditional instruments. Global Commission on Adaptation (2019) divides adaptation into reduction, preparedness, and restoration. Planning land use, promoting natural alternatives to safeguard people and property, and relocating vulnerable populations lessen and prevent climate change.

Review of Literature

Schlelgelmich and Bohlen *et al.* (2010) say enterprises must segment the market based on green buying behaviour before targeting green customers. The author noted that attitudes are the best predictor of pro-environmental purchasing behaviour, and firms should broaden their growth strategies to increase green product market penetration. Eyraund and Wane *et al.* say renewable green energy is global, and green energy has altered regionally. In 2009 and 2010, China invested more in renewables than Europe. Milan (2012) studied sustainable finances using several methods. First, he reviewed essential material to understand sustainable finances. He determined that they are a dynamic concept, a process rather than a final objective with numerous benefits, and the idea is not yet developed. According to Dubey and Venkatesh *et al.*, green procurement practices increase market share and consumer happiness. Effective purchasing management help customers strengthen the supply chain and improve customer experience, according to green procurement. According to Chowdhury and Datta *et al.*, green architecture conserves energy and the environment.

Personal values and convictions are vital factors for green investors investing, according to Shipochka (2013) [30]. The author says future energy prices won't be reduced because of more extraordinary capital expenses. The author highlighted that green investments are not a bubble because they have long-term sustainability. Keerti (2013) says India's unsustainable economic expansion causes energy shortages and industry cuts. The author said India is using renewable

energy to reduce imports. According to the author, agriculture and rural development, sports like forestry, land use activities like dairy, soil conservation, energy usage practices, renewable energy, etc., all contribute to climate change.

Green finance connects the financial sector, environmental improvement, and economic progress, according to Sudhalakhmi and Chinnadori (2014). According to Nath and Nayak *et al.* (2014) [19], green banks only start in India. They should use environmental data more often in business, lending, and investing, and this will improve their environmental performance and increase company value. Wyk (2014) [37] says sustainability is a superior strategy for building and construction since it prioritises people and institutions, and green buildings combine construction and environmental sustainability.

The author said green building standards are sustainable. Bangladeshi banks' Green Banking Guidelines performance is unsatisfactory, according to Rahman and Barua (2016) [32]. Acheampong (2016) [1] argued that the circular economic system (CE) could transition society from a linear take-make-waste model to a circular reduce-reuse-recycle model. Circular economy groups don't need government funding, and the creator says their long-term prosperity depends on innovation.

Sustainable and conventional funds perform comparably in emerging economies, Christensson and Skagestad (2017) [6] found. Negative screening reduces sustainable funds' market exposure compared to ordinary funds. Welling (2017) [40] concluded that green investments reduce carbon emissions by lowering power delivery, enhancing energy performance, and sequestering carbon. The author also discussed green finance's challenges. Rapid technology growth, government backing, significant uncertainty, and the involvement of many people are all obstacles. Joseph (2017) showcased green finance in India and its value. He emphasised India's green funding. He discussed India's green financing and how it intends to develop. The author says green finance links money, environmental improvement, and economic prosperity. India needs these long-term ties. Cui (2017) [7] said green credit grows faster than total loans. Green credit can minimise credit risk (the bank's NPL ratio). Implementing the Green Credit Policy yields positive effects. When green credit growth rates rise, sustainability performance and credit risk increase. Lemmen (2017) compared previous financial instruments to green bonds and concluded that investors are paying more attention to green bonds and channelling proceeds into environmentally friendly projects. The author noted that green finance's importance is growing; therefore, investing in Green Bonds is a step toward combating climate change.

Sai and Reddy (2018) [26] discuss green finance in India. In India, environmentally responsible finance is in its infancy, he said, and the Indian government has taken steps to promote it, nevertheless. The author discussed the issues green finance faces in India and suggested solutions, such as recommending the government construct a solid policy framework for green finance that supports private sector participation in financing sustainable development programs. China's green credit policies test banks' ability to manage and price environmental and social risks, according to Harper Ho (2018) [12]. He revealed that China's leading banks granted more green loans recently. He also highlighted that China's green finance rules drive leading financial institutions to create environmental and social credit risk monitoring systems. These trends illustrate the necessity of banks as gatekeepers for green

funding, especially in debt-heavy countries like China. Stojanovic and Illic (2018) ^[33] focused on market mechanisms and policy formation for long-term green finance. According to Bielinski and Mosionek *et al.* (2019), despite the European Union's leadership in the global movement toward a more sustainable economy, more investment is needed in building renovation and energy efficiency, renewable energy generation and transmission, and low-carbon transportation. They added that the business sector might finance pre-environmental activities. Pereira and Pereira (2019) ^[24] found that carbon tax-funded tariffs had negative macroeconomic and regressive distributional consequences. Using the carbon tax income to support a feed-in surcharge is an improvement over a basic carbon tax with all critical policy dimensions. The feed-in tariff method still results in a better environment. Shrimali (2019) ^[31] discussed clean energy listed stock as a separate asset class in existing portfolios. The author focused on listed renewable energy equity in a static portfolio optimisation problem. This study found that designating renewable power-listed stocks as a separate asset class didn't increase the value of an investor's portfolio. Researchers concluded this. The magnificence of assets may indicate the need for cutting-edge approaches to illustrate their importance. Tuminen and Reda (2019) ^[36] suggested the CEA technique for appraising energy-efficient buildings. Low-investment energy savings cost 0.26 USD/KWH, compared to 0.60 USD/KWH under high-investment. The author said a rigorous study of the cost-effectiveness of different energy conservation projects would find the most efficient in terms of energy saved relative to money invested. Novkovska (2019) ^[23] contributed to hidden and green economies. Compared to the mainstream economy, the hidden economy's efficiency swings wildly. This suggests substantial economic differences. The author found that the hidden economy is linked to low energy efficiency. This research proposed concerted actions to eliminate the hidden economy and boost energy efficiency. The author identified a link between the hidden economy and low energy efficiency. Stojanovic and Djukic (2019) ^[13] investigated the sustainability of green economy funding to determine how and to what extent the green economy is financed in Serbia and ASEAN countries and the financial mechanisms for achieving the green boom. Green bonds and modern securities are evaluated for their impact on worldwide renewable energy projects. Su and Liao (2019) ^[34] used ten years of stock return data from energy-efficient enterprises and a high-dimensional time series model to determine that the typical components of stock return have three change points while the idiosyncratic component does not. Macroeconomic news can have a varying effect on energy stocks. Yoram Krozer (2019) ^[16] says public savings can be leveraged to increase renewable energy and energy efficiency initiatives fivefold. This will allow a low-carbon economic transition. It will help transition to a low-carbon economy if favourable conditions are developed, these savings are activated sufficiently, and it pays off in cost-reducing technological progress. Kling *et al.* (2021) claim that climate vulnerability limits enterprises' access to credit and raises financing costs, and MSMEs might struggle to get funding and financial services. Public and private sector policies and initiatives include climate change adaptation.

Evil Effects of Degradation of the Environment

Although all of humanity is impacted by climate change, those at the bottom of the economic pyramid are predicted to

suffer the most. This is accurate both on a national level and internationally. Because of geography, demographic pressures, and a lack of resources to engage in adaptation and mitigation measures, emerging markets and developing economies are more susceptible to climate change than established countries. The Asian Development Bank noted that climate change is exacerbating existing risks and vulnerabilities, such as those related to ecosystem goods and services, water scarcity, agricultural and food security, forced migration, conflicts, and involuntary displacement, as early as 2003. Unequal exposure to environmental dangers risks igniting a vicious cycle in which social injustices are further exacerbated as vulnerable populations bear a disproportionate burden of the adverse effects of climate change. This cycle has the potential to make existing social injustices even more severe. Even though the connections between climate change and poverty are complicated, multifaceted, context-specific, and challenging to quantify, researchers generally agree that climate change has a regressive influence on economies, hurting low-income households more than it hurts wealthy households. In addition to injuring individuals, climate change has a detrimental impact on businesses, tiny firms, emerging markets, and companies in evolving economies. Inequalities exist within each nation, which is a reflection of differences in the vulnerability of each country to the effects of climate change. As a result of the fact that many low-income households are situated in low-elevation coastal regions and unfavourable agricultural regions, they are in increased danger of the effects that climate change will have. Flooding, droughts, natural disasters, and other tragedies related to climate change are more likely to afflict lower-income households than they are to affect those with higher incomes. The households in the bottom tier also have fewer resources available, making it more difficult for them to protect themselves from adverse shocks. People and nations living in poverty are more likely to be affected by a variety of climate-related surprises, including but not limited to natural disasters that destroy assets and livelihoods; waterborne diseases and pests that become more prevalent during heat waves, floods, or droughts; crop failure due to reduced rainfall; and price spikes for food that follow extreme weather events. When, for instance, a flood destroys a micro business, a drought decimates a herd, or contaminated water makes a child sick, climate-related shocks not only hurt individuals who are already poor but also harm those who are not poor but are prone to becoming poor and can push them into poverty.

What can the Government do?

In a circumstance like this, it is essential to have social safety nets provided by the state and comprehensive social services in health and education. The affected economic agents can rebuild and restore their livelihoods with the assistance of private sector solutions such as insurance and risk finance tools, ideally in a manner that has a smaller carbon footprint and is more resistant to environmental shocks. Traditional financial services have often not been able to meet these requirements. Researchers in the behavioural economics tradition have demonstrated a direct connection between financial inclusion and poverty alleviation by establishing that impoverished individuals experience the "triple whammy" of low income, unstable income sources, and a lack of adequate financial tools to manage them. This link demonstrated that poor individuals experience all three issues simultaneously. Due to automation, the prices of financial services

transactions have dropped substantially. It allows enterprises to take advantage of economies of scale, transforming financial inclusion from a legal obligation into a worthwhile and desirable endeavour. Interestingly, non-banking enterprises have contributed significantly more to financial inclusion over the past ten years than traditional financial service providers have.

Global Commission on Adaptation (2019)

The Global Commission on Adaptation (2019) organises the many components of adaptation based on the three facets of reduction, preparation, and restoration. As part of efforts to mitigate and prevent the adverse effects of climate change, actions such as planning for land use, supporting naturally occurring safeguards for people and property, and managing the permanent relocation of vulnerable population segments are all critical components. The development of hardier crops, agricultural techniques that are more adaptable, and structures and infrastructure that are resistant to the outcomes of climate change can help to reduce vulnerability to the impacts of climate change. Public agencies can improve their degree of preparedness for the effects of climate change by establishing early warning systems, taking part in the planning process, and increasing the size of first responder and evacuation teams. Last but not least, once natural disasters have caused havoc on the economy, efforts geared toward restoration and recovery are necessary.

Green Banking Products

Green Loans: Giving what are known as “green loans” to businesses or projects that are regarded to be environmentally beneficial is what this term refers to.

Green Mortgages: Mortgages that comply with environmental standards are called “green mortgages.”

Green Credit Cards: Green Credit cards promote paperless banking

Mobile and Online Banking are Modern Methods Requiring Less Paperwork, Postage, and Travel

Green Saving Accounts: In the case of Green Saving Accounts, banks make donations based on savings made by customers.

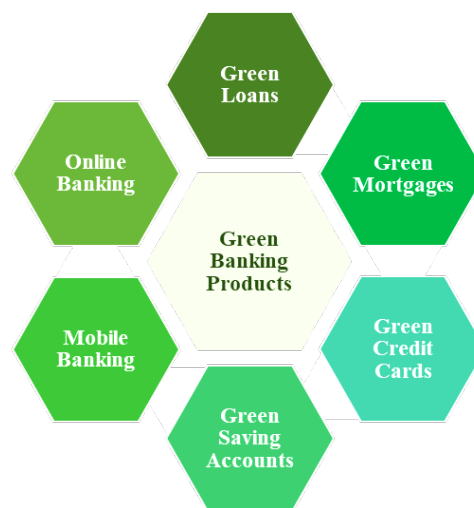


Fig 1: Green Banking Products

Steps in Green Banking

- The use of online banking, such as bill payment, remote deposit, and online financial transfers, reduces the use of paper, energy, and natural resources.
- Utilisation of green checking account information on bank ATMs
- Providing low-interest financing to customers looking to purchase solar equipment
- Directly combating climate change and launching a drive to replace every GSL bulb in every owned building, including homes and offices.
- Using green credit cards instead of cash to protect the environment
- Using renewable energy sources like solar and wind
- Mobile banking helps banks use less energy and paper while saving clients' time and energy.
- The provision of green banking financial instruments, such as the “Green Fund,” allows clients concerned about the environment to invest in green projects.
- The creation of green mortgages and bank loans that offer financial incentives for ecologically friendly projects and goods

The study conducted on the selected banks of India gave the following results about various products, services and steps taken for going green.

Table 1: Table showing green initiatives taken by various banks

No	Bank	The Bank Takes Initiatives
1.	SBI	<ul style="list-style-type: none"> ☞ First bank in India to venture into generating green power by installing windmills for captive use. ☞ In 2010, they launched Green Channel Counter (GCC) facility at their branches ☞ Signatory to the Carbon Disclosure Project undertaking various environmentally sustainable initiatives through its branches
2.	Punjab National Bank	<ul style="list-style-type: none"> ☞ Punjab National Bank started conducting Electrical audits of offices as an energy conservation initiative ☞ Maintained a separate audit sheet for assessing the impact of green initiatives taken by them ☞ Organised more than 290 Tree Plantation Drives
3.	Bank of Baroda	<ul style="list-style-type: none"> ☞ Gives preference to environmentally friendly initiatives like windmills, biomass, and solar power projects which help in earning carbon credits ☞ Compulsory filing of No Objection Certificate from Pollution Control Board for obtaining loans for industrial purpose
4.	Canara Bank	<ul style="list-style-type: none"> ☞ Adopted environmentally friendly measures like mobile banking, internet banking, telebanking, solar-powered biometric operations ☞ Set up e-lounges for high-tech banking facilities like internet banking, passbook printing kiosk, ATMs, online trading and cash/cheque acceptors ☞ Due preference for projects which earn carbon credits like solar energy projects, windmills etc

		☞ Not extending any finance to units producing ozone depletion substances like chlorofluorocarbon, carbon tetrachloride, aerosol products, solvents etc.
5.	ICICI	☞ Adopted 'Go Green Initiative' which involves activities like green products, green offerings, green engagement and green communication with customers ☞ Conducting environmental awareness programs for the employees and customers
6.	HDFC	☞ Encourages the employees to prevent wasteful use of natural resources and emission of greenhouse gases ☞ Reducing the use of paper through e-transaction advice and electronic media communication
7.	AXIS bank	☞ Initiated the process of collecting all the dry waste generated from the corporate office and branches and recycled notebooks, notepads and envelopes ☞ Carpooling has been initiated to reduce the carbon footprint
8.	Kotak Mahindra	☞ 'Think Green Initiative' like reducing paper consumption by using e-statements ☞ Partners with Grow-Trees.com for planting one sapling for every e-statement on behalf of its customers.
9.	IndusInd	☞ Initiated the Green Office Project and installed solar-powered ATMs reducing CO ₂ emissions
10.	YES Bank	☞ Project Portfolios in the areas of alternative energy and clean technologies
11.	HSBC	☞ Separate targets for Data Centres, paper consumption and business air travel
12.	IDBI	☞ Clean Development Mechanism (CDM) services to clients

Results and Discussion

According to a survey of several Indian banks, even if the government and bank authorities have several green banking initiatives, their implementation is challenging since some clients hesitate to do their financial activities online. Based on data collected from a survey conducted on various respondents who are directly related to banks, like bank staff, investors, borrowers etc., it was found that about 80% of the people surveyed gave their opinion that they are aware of green banking and 70% of the people are involved in various green practices like the use of ATMs, online banking which avoids the usage of paper waste, green loans, green investments etc. At the same time, most of them use air conditioning equipment and more paperwork; both are harmful to the environment. The reason may be a lack of awareness that the more paperwork a person does, the more trees will be destroyed. The use of air conditioning equipment and refrigeration is harmful to the environment. But, due to the selfish desire of man, they are harming the environment while speaking in public for environmental protection. About 80% of the people surveyed supported online transactions. In comparison, 70% of them endorsed work at home, which may reduce transportation from home to the office and back, which may reduce pollution from vehicles. 60% of the respondents had either green investments or green loans.

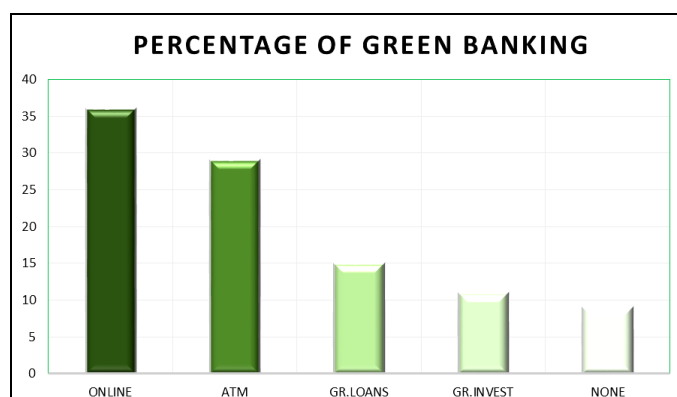


Fig 2: Usage of green banking avenues

Conclusion

The study aimed to determine how much importance the scheduled banks had given green banking. The study shed light on the systems maintained by various banks. New

financial instruments such as green bonds, carbon market instruments such as carbon taxes, and new financial institutions such as green banks and green funds are being established to meet the financial needs of these types of projects. It is necessary to create an appropriate incentive structure to increase the allocation of funds toward establishing or adopting environmentally sustainable projects. Once funds are diverted from traditional industries and directed toward green and ecologically friendly sectors, other resources such as land and labour may follow. This eventually leads to an optimal allocation of resources that supports long-term sustainable growth. To achieve these goals, targeted green finance policies have been developed in significant countries, involving all economic growth stakeholders, including corporations, governments, and central banks. This study reviews green banking literature and pinpoints application challenges. Lack of information and guidance is a significant obstacle to green finance applications. In future, more activities should be done to create awareness among customers about the rewards of green banking.

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