**Project Paper**

**On**

 **Contribution of Banks and Financial Institutions for a Green Economy – Study on Bangladesh Perspective**

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**National University, Bangladesh**

**Date of Submission: 09th January, 2017**

**Letter of Transmittal**

Date:

Aminul Haque Russel

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Subject: submission of project paper

Dear Sir,

This is my pleasure to submit the study report on Contribution of Banks and Financial Institutions for a Green Economy – Study on Bangladesh Perspectivewhich I was assigned. This is a great chance for me to acquire knowledge and experience in respect of performing this report.

This is assigned to me as partial requirement for the competition of BBA program. Throughout the study I have tried with the best of my capacity to accommodate as much information and relevant issues as possible and tried to follow the instructions you have suggested. I tried my best to make this report as much informative as possible. I sincerely believe that it will satisfy your requirements. However sincerely I believe that this report will serve the purpose of my project submission program.

I gave my best efforts to achieve the objectives of this report and hope that my endeavor will serve the purpose. Besides, I have followed your remarks and instructions very carefully while preparing this report. I tried the best to maintain your schedule, format and discipline.

Thank you for your kind consideration.

Sincerely yours

Md. Sahidur Rahman

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 **Supervisors Declaration**

This is to certify that, Md. Sahidur Rahman, student of Bachelor of business administration (BBA), major in Finance of Daffodil Institute of IT (DIIT) has completed this project paper on **Analysis of Green Financial activities for Green economy**. He has completed this project satisfactorily under my supervision as he partial fulfillment for the award of BBA degree.

He has done his job according to my supervision and guidance. He has tried his best to do this successfully. I think his study will help him in future to up build his career.

I wish him every success in life.

…………………….

Aminul Haque Russel

Lecturer

Department of business administration

Daffodil Institute of IT (DIIT)

**Students Declaration**

I hereby declare that the project paper on **Analysis of green financial activities for green economy** includes the result of my own works, pursued under the supervision of Aminul Haque Russel, Lecturer of Department of Business Administration, Daffodil Institute of IT (DIIT).

I also like to declare that this report paper is my original work and is prepared for academic purpose which is a part of BBA program.

………………………………

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**Acknowledgement**

At first I would like to thank almighty ALLAH who gave me to prepare this term paper. This report has created a deal of interest to me.

Preparing this report was exciting and hard work at the same. It is for the first time that I have been able to gather real life experience working on a report.

I would like to give my heartiest gratitude to Aminul Haque Russel, Lecturer BBA program, Daffodil Institute of IT (DIIT), my internship supervisor, for his kind concern, valuable time, advice, endless endeavor and guidance throughout the period and making of the report. I also like to thank my honorable teacher Mohammad Shakhawat Hossain, Principal of Daffodil Institute of IT. Their contribution to me just can be acknowledged but never be compensated.

I would like to thank the authority to the Daffodil Institute of IT (DIIT) for allowing me to do my report here.

**Executive Summary**

Green financing can play a significant role in implementing the broader concept of sustainable economic development. It can be expressed differently depending on the participant, and it may be led by financial incentives, a desire to preserve the planet, or a combination of both. In addition to demonstrating proactive, environmentally friendly behavior, such as promoting mass transit or the recycling of used goods, green finance is about avoiding the promotion of any business or activity that could be damaging to the environment now or for future generations. The financing is the investment area of banks from which the operational profit is generated. The only ethical investment includes agriculture and green financing. Green financing can be direct and indirect from the perspective of banks.

It shall attempt to establish a relationship between green finance and the sustainable economy. As defined in this paper, green finance encompasses a broad spectrum of funding mechanisms and sources for environment-oriented technologies, projects, industries or businesses as well as financial products and services like green loans, bonds, insurances, etc.

I have presented this study report on the basis of working knowledge. Chapter one provide the complete overview of this report. Thus includes objectives, methodology and limitations of the report, in second chapter discussed about green bank and green banking. After that I’ve discussed about green financing, its direct green finance and indirect green finance. In forth chapter I’ve included the analysis of green finance. In last chapter there are some findings, recommendations or suggestions and conclusion of the report. I have finished my project paper work mainly on fifth chapters.

Finally, green banking are trying to help making environment-friendly banking to stop environment degradation to make this planet more habitable for developing the green economy and green finance is a phenomenon that combines the world of finance and business with environmentally friendly behavior.

Green Banking activities in Bangladesh are improving day by day. There were no investment in Renewable energy, recycling and Recyclable products, energy efficiency, solid waste management, liquid waste management, alternative energy, fire burnt brick, non-fire block brick, and green industry till 2014. From 2015 most of banks and financial institutions focus on these sectors. So, we can say that the practices of green banking develop day by day.

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**Acronyms**

|  |  |
| --- | --- |
| **Abbreviation**  |  **Explanation**  |
| BB | Bangladesh Bank |
| CSR  | Corporate Social Responsibility  |
| ETP  | Effluent Treatment Plant  |
| GBU  | Green Banking Units  |
| **GIS** | Green Investment Schemes  |
| **HHK** | Hybrid Hoffman Kiln |
| **LAN** | Local Area Network |
| **WAN** | Wide Area Network |
| **SOCBs** | State Owned Commercial Banks |
| **SDBs** | Specialized Development Banks |
| **PCBs** | Private Commercial Banks  |
| **FCBs** | Foreign Commercial Banks  |
| **FIs**  | Financial Institutions  |
| **SEF**  | Sustainable Energy Finance  |
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Chapter 1

Introductory Part

**1.1. Introduction**

In the 21st century green financing becomes essential part not only in business but also in environment science. All the nations, developed and developing should take the attempts for green financing. It is estimated that global green financing in green infrastructure will reach to $40 trillion between 2012 and 2030.

Green finance is the principle of green credit. It refers to a series of administrative means requiring that commercial banks and other financial institutions carry on researches and developments to produce pollution treatment facilities, be engaged in the ecological agricultural production, provide loans to support relevant enterprises and institutions and implement concessionary low interest rates, but restrict new project investment of polluting enterprises accompanied with some punishable interest rates (Xu 2013).

Green financing can play a significant role in implementing the broader concept of sustainable economic development. Financing obstacle in Bangladesh is characterized by greater and real market risk due to its less stable macroeconomic conditions. The perception of higher risk leads to higher interest rate, shorter loan tenor, and higher equity requirements in our country. We have to address these financing barriers so as to promote green financing ensuring our sustainable economic growth.

Bangladesh bank (BB), since its inception in 1972 has been working for the growth and development of the country. In early 90s, awareness was started to grow for the need of banking practices for environmental conservation and social protection. In last half decade, remarkable progress has been made in the sustainable banking regulatory framework of Bangladesh. Green banking and CSR department was established on April 04, 2013 with a view to develop sustainable banking (i.e. green banking, CSR and financial inclusion) framework and to integrate it into core business operation of banks and Fls through efficient and effective implementation of green banking. CSR and financial inclusion. Bangladesh bank is now successfully working in the field of policy formulation and monitoring of different aspects of green banking, that includes green finance, environmental risk management, climate risk fund, green marketing, green product innovation, green strategic planning etc. Bangladesh bank launched the tk.2.0 billion green banking refinance scheme in august 3, 2009 to fund renewable energy projects in the country. Tk. 1.64 billion has been refinanced from this fund up to November 2014. Many commercial banks has signed an agreement with Bangladesh bank to disburse the environment-friendly loan.

**1.2. Objectives of the study**

The main objective of writing this project paper is to show the green financial activities for a green economy. The specific objectives can be stated as under:

1. To measure the concept of green finance.
2. To show the trend of green investment of banks in Bangladesh.
3. To assess the direct and indirect green finance in Bangladesh.
4. To identify various policies of green financing of banks.
5. To analyze the green finance performances of scheduled banks.
6. To fulfill the partial requirements of the BBA program.

**1.3.** **Methodology of the study**

The study has been conducted by the views of key persons of banks and research institutes with unstructured discussions and secondary data available from Bangladesh bank, World Bank, United Nations Environment Program (UNEF), published articles in different journals and renowned newspapers, and the data available in web sites as well as the financial reports of banks and other financial institutions. The qualitative data have been reported into the flowcharts, which indicate different wings about the tradeoff between environment and economy of green banking. And for quantitative data, five consecutive years (2012, 2013, 2014, 2015, 2016) green banking performance has been taken into consideration.

**1.4. Literature review**

**The people’s bank of china, (2015),** Green finance policy refers to the attraction of private capital investment into green industries. The largest amount of capital investment on green industries comes from the private capital investment. Social responsibility is the objective function of a company. Consumer can increase it through consumer education, green investment etc. In develop countries consumers concern on morality ethics rather than the price of the product. To increase the return on green investment and to reduce the investment risk green banking is more effective. On the other hand green funds build up the economics of scale.

**Teodoro S Ocampo (2013),** Green finance is a process of funding sources against environment oriented technologies, projects, industries or business as well as financial products and services. The economy in which resources are not used faster rather than the renewing of these resources by nature is called the sustainable economy. The main objectives of this study are the achievement of sustainable green economy, adaptation of proposed green finance and the sustainable green economy.

**Dr. Loluru Nagarjuna, (2015),** Green finance connect the financial industries into environmental improvement and economic growth. So, we can say that green finance is a core part of low carbon green growth. Financial institutions can manage this through domestic public finance, international public finance and private sector finance. The main importance of green finance are promoting technology diffusion, creating comparative advantage, adding value and increasing economic prospects

**Rombel, A., (2008),** As the global financial markets remain anemic after the 2009 US-triggered financial crisis and the still lingering Eurozone debt crisis, Green funds or green financing is evolving as the key driver in stimulating a sustainable world economy.

**According to the World Bank report, (2016),** significant investment flows, largely from the private sectors, have been mobilized to meet climate commitment while simultaneously contributing to low emission economic development in IFC client countries.

**Bakhtyar, B. et al (2012),** entitled the alternative finance models for green tech startup, the authors present the ideas of technologies that have been produced with different models to promote green tech offered the keys and ingredients to look at finance. They stressed that recognizing that understanding the technologies and finance is not the only crucial aspect to consider, but also the timing, targeting and getting the individual companies involved in promoting the green tech as key elements in green tech startup. The paper discusses banking problems involving green tech startup as well as the role of debt venture companies and their views regarding green technologies.

**1.5. Limitation of the study**

This study was not free from limitations. It is important to note that these limitations have somehow contributed in developing a dazzling and outstanding report. These limitations are:

* Major limitation of this report was time constrained.
* The annual report and websites were the main secondary information source that weren’t enough to complete the report.
* There is a chance of having some mistake in the report though best effort has been applied to avoid any kind of mistake.

Chapter 2

Green Banking Activities in BD

**2.1. Green Bank and Green Banking**

Green bank means an ethical, a socially responsible and a sustainable bank. A green banker is more than a banker, it is not an individual but a unit or a group or a team.

Green banking means eco-friendly or environment-friendly banking to stop environment degradation to make this planet more habitable. This comes in many forms. Providing innovative green products: using online banking 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. Green banking is also multi-stakeholders endeavor where banks have to work closely with government, NGOSs international financial institutes (IFIs), international government organizations (IGOs), central bank, consumers and business communities to reach the goal.

As a regular of financial sector, the central bank already proved resounding success to implement the concept of green banking in its regular activities. Besides, it also created congenial atmosphere for the banking sector to ensure profound impact of green banking on socioeconomic landscape of Bangladesh.

Green or sustainable banking is not limited only to in house green activities, but extends to facilitating green financing. Environmental risk management (ERM) guidelines is a part of green banking and ERM is for assessing environmental risk and not intended to squeeze investment; rather it is for sustainable finance.

The policy guideline for green banking has been derived on the basis of a green economy, which, in turn, is based on renewable energy (solar, wind, geothermal, marine including wave, bio-gas, and fuel cell), green buildings (green retrofits for energy and water efficiency, residential and commercial assessment, green products and materials, and LEED construction), clean transportation (alternative fuels, public transit, hybrid and electric vehicles, car sharing and carpooling programs), water management (water reclamation, grey water and rainwater system, low-water landscaping, water purification, storm water management), waste management (recycling, municipal solid waste salvage, brown field land remediation, sustainable packaging), land management (organic agriculture, habitat conservation and restoration, urban forestry and parks, reforestation and afforestation and soil stabilization).

Green banking undertakes proactive measures to protect environment and to address climate change challenges while financing along with efficient use of renewable, non-renewable, human and natural resources.

**2.2. Green Banking Activities**

Green banking is a component of the global initiative by a group of stakeholders to save the environment. The environment in Bangladesh is rapidly deteriorating. The key areas of environmental degradation are: air pollution, water pollution and scarcity; encroachment of rivers; improper disposal of industrial, medical and house-hold waste; deforestation; loss of open space, and loss of biodiversity. In addition, Bangladesh is one of the most climate vulnerable countries. In line with global development and response to environmental degradation, the financial sector, as one of the key stakeholders is society, should play its due role. Green banking activities in this report has been addressed in the following manner:

 **2.2. Figure: Green Banking Activities**

 Source: Bangladesh bank annual report on green banking-2012

**2.2.1. BB’s Green Banking Initiatives:**

Green banking initiatives of the Bangladesh bank have two aspects: In-house green activities and non-in-house green operations.

**# BB’s In-house Activities:** Bangladesh bank’s in-house green activities include installation of a 8-kilowatt solar power system on its rooftop on march 12, 2012; environmentally harmful incineration of non-re-issuable damaged bank notes is being phased out, resorting instead to shredding; steps for measuring the carbon footprint of BB’s internal processes and operations are underway, eventually to set time-bound targets for carbon neutrality/emission reduction. Under the networking program, all the departments of Bangladesh bank head office and its nine branch offices have already been brought under a computer network (LAN/WAN), connecting almost 3100 PCs.

Given below the BB’s green banking initiatives figures:

 **2.2.1. Figure: Bangladesh Bank Initiatives**

Source: Bangladesh bank annual report on green banking-2012

BB has enhanced the product line under its green banking scheme from 6 to 47 and segregated these products into 10 categories which are: renewable energy, energy efficiency,

solid waste management, liquid waste management, alternative energy, fire burnt brick, non-fire block brick, recycling and recyclable product, green industry and miscellaneous.

**#BB’s Non-in-house Operations:** Bangladesh bank is well aware of the environmental degradation situation and gas already given directions to all scheduled banks. Commercial banks are now required to ensure necessary measures to protect environmental pollution while financing a new project or providing working capital to the existing enterprises. Banks have been advised to finance in solar energy, bio-gas, ETP and Hybrid Hoffman Kiln (HHK) in brick field under refinance program of BB. A comprehensive guideline of corporate social responsibility (CSR) has been issued where banks have been asked to concentrate hard on linking CSR at their highest corporate level for ingraining environmentally and socially responsible practices and engaging with borrowers in scrutiny of the environmental and social impacts. Banks have been brought under the purview of E-commerce with a view to providing the customers with online-banking facilities covering payments of utility bills, money transfer and transactions in local currency through internet as well as considering the adverse effects of climate change, banks have been advised to be cautious about the adverse impact of natural calamities and encourage the farmers to cultivate salinity resistant crops in the salty areas, water resistant crops in the water logged and flood prone areas, drought-resistant crops in the drought-prone areas, using surface water instead of underground water for irrigation and also using organic fertilizer, insecticides by natural means instead of using chemical fertilizer and pesticides.

**2.2.2. Banks Green Banking Activities:**

Banks green banking activities are policy formulation and implementation, budget allocation and utilization, green banking unit formation, environmental risk rating, green financing, climate risk fund utilization and online banking etc. banks green banking activities have two several aspects: Banks in house green activities and banks green activities other than In-house. Given below the figure about banks activities:

 **2.2.2. Figure: Bank’s Green Banking Activities**

 Source: Bangladesh bank annual report on green banking-2012

**# Bank’s In house Green Activities:** Banks In-house green activities are:

* Common use of table stationeries instead of individual use.
* Use on paper both sides for internal consumption.
* Introduction of E-statement for customers instead of paper statements.
* Use of online communication in the best possible manner.
* Using more daylight instead of electric lights and proper ventilation on lieu of using air conditioning.
* Using energy saving bulbs.
* Use of eco font for printing light impression on both sides of the paper.
* Video/audio conference in lieu of physical travel.
* Efficient use of printer cartridges, photocopy toner, office stationary etc.
* Sharing electronic files, voice mail and e-mail instead of paper memos.
* Use of solar energy/renewable energy sources.
* Efficient use of electricity, gas and water.

**# Some Green Banking Slogans of Banks:** Some green banking slogans of banks are showed below:

* Save paper, save trees
* Conserve energy, conserve natural resources
* Pay your bills online
* Turn off the tap when not needed
* Always use a cloth bag
* Reduce, reuse and recycle
* Digitize yourself
* Be paperless-kick the habit
* Unplug electronic devices while not in use

**2.3. Strategy Framework of Green Banking Activities:**

Given below the discussion about strategy framework of green banking activities:

**2.3.1. Phase-1:**

As per Bangladesh bank guidelines, bank are required to formulate and adopt a broad environment or green banking policy and strategy and show general commitment on environment through in-house performance. Policy formulation is given the first priority, because if policy is not there or if it not approved by the competent authority, then the adaptation and implementation of green banking activities that are to be linked with a compliant with the phase will not be on track.

In support of the policy governance, banks are directed to approved a considerable fund in their annual budget allocation and establish a separate green banking unit or cell within stipulated time The responsibility of this cell is to design, evaluate and administer green banking related issues of the bank. A senior executive should be assigned with the responsibility of heading the unit. The unit will report to the high powered committee time to time.

**2.3.1. Figure: The First Phase of the Implementation of Green Banking Initiatives**

 Source: Bangladesh bank, BRPD circular No. 02, 2011

Banks are complying with the instructions stipulated in the detailed guidelines on environmental risk management (ERM) in consideration of a part of the green banking policy. For ensuring improved lending policy and green lending, banks need to incorporate environmental and climate change risk as part of the existing credit risk methodology prescribed to assess a prospective borrower. This will include integrating environmental risks in the checklists audit guidelines and reporting formats. Moreover, bank should emphasize on making the easiest way to help environmental by the practice of extended and improved online banking via a secure website of respective bank. This online banking can explore unique and convenient services to the client’s eliminating paper waste, saving gas and carbon emission, reducing printing costs and postage expenses. Also banks have to come up with green marketing patronization and environmental awareness building program for its employees, consumer and mass people would be the continuous job under this public relation department. Simultaneously, it must report on the initiatives to BB and disclose in their respective websites.

**2.3.2. Phase-2:**

The phase-2, which would not exceed December 31, 2012 sketches a scenario of consolidation of previous initiation with a subsequent bank specific environmental risk management plan and guideline, sector specific environmental policies and green strategic planning. A bank should develop and follow an environmental risk management manual or guidelines in their assessment and monitoring of project and working capital loans. They can also prepare standard and guidelines for themselves for improving green banking practices. Sector specific policies to be framed for different environmental sensitive sectors such as agriculture and agro based business, construction and housing, engineering, basic metal and chemical, manufacturing and services sectors, ship-breaking etc.

 **2.3.2. Figure: The Second phase of the Implementation of Green Banking Initiatives:**

Source: Bangladesh bank, BRPD circular No. 02, 2011

For strengthening the first phase initiatives, banks are instructed to follow strategy of reuse, recycling of materials and equipment, and source reduction and waste minimization strategy should be part of in-house environmental management in phase 2. In this connection setting up green branches is encouraged where energy efficiency principles would be followed. In addition, a green branch will be entitled to display a special logo approved by Bangladesh bank. Further bank should increasingly rely on virtual meeting through the use of video conferencing I lieu of physical travel which would help saving cost and energy. Moreover, as a part of pre-standardization action banks should start publishing independent green banking and sustainability reports showing past performance, current activities, and further initiatives. Updated and detailed information about banks environmental activities and performance of major clients should be disclosed.

**2.3.2. Phase-3:**

A system of environmental management should be in place in a bank before his initiation of the activities of phase-3. Bangladesh bank expects that banks will address the whole ecosystem through environment friendly initiatives and introducing innovative products. Standard environmental reporting with external verification should be part of the phase. The time lining for the actions to be taken under phase-3.

 **2.3.3. Figure: The Third Phase of the Implementation of Green Banking Initiatives:**

 Source: Bangladesh bank, BRPD circular No. 02, 2011

Chapter-3

Green Financing Activities

**3.1. Green Finance**

Green finance is a broad term that can refer to financial investment following into sustainable development projects and initiatives, environmental products, and policies that encourage the development of a more sustainable economy. Green finance is a phenomenon that combines the world of finance and business with environmentally friendly behavior. It is an arena for many participants, including individual and business consumers, producers, investors, and financial lenders. Green finance can be expressed differently depending on the participant and it may be led by financial incentives.

According to Bangladesh bank guideline commercial banks undertook an initiative to go green by paying low interest loans to the customers who would like to setup solar equipment’s, ETP, Bio-gas plant, Hybrid Hoffman Kiln (HHK) etc. Despite the countries state-owned and private commercial banks and a non-banking financial institution (NBFI) signed an agreement with BB to disburse the environment friendly loan. Green finance includes climate finance but is not limited to it. It is also refers to a wider range of other environmental objectives. For example, Industrial Pollution Control, water sanitation, or biodiversity protection.

**3.2. Green Finance Activities:**

Green finance combines both direct and indirect green activities. Source of banks direct green finance may be banks own fund or Bangladesh banks fund for renewable energy and environment friendly projects. Indirect green finance means financing the project having ETP or alike system. The activities of green finance are showed below by a diagram,

**3.2. Figure: Activities of Green Finance:**

 Source: Bangladesh bank annual report on green banking-2012

**3.2.1. Direct Green Finance:**

Direct finance is may be its banks own fund or Bangladesh banks fund for renewable energy and environment friendly projects. Direct green finance is installation of ETP, Bio-gas plant, Solar panel, Bio-fertilizer plant or others. Given below some discussion about these projects:

**Installation of ETP:** Effluent treatment plants are essential to treat waste discharged from residential units, various industries or manufacturing units. Apart from treatment plants for residential units, different types of effluent treatment plants are required for various industries as they produce by products or polluted wastes which cannot be directly discharged in the nature. Where the effluent treatment plant must be installed? Given below the some list of industries where effluent treatment plants are essential:

* Food industry
* Pharmaceuticals industry
* Dairy industry
* Textile and dye industry
* Chemical/Paint manufacturing units.

Many such industries need effluent treatment plants to purify the waste water before it gets discharged.

**Bio-gas Plant:** a bio-gas plant is an anaerobic digester that produces biogas from animal wastes or energy crops. Energy crops are cheap crops grown for the purpose of biofuels, rather than food. Biofuels are liquid, gaseous, or solid fuel made from live or recently dead organic material known as biomass, as opposed to fossil fuels, which are composed of ancient biological materials. Biogas is a type of biofuel created via anaerobic, or oxygen free, digestion of organic matter by bacteria. A biogas plant is composed of a digester and a gas holder.

**Solar Panel:** Solar energy begins with the sun. Solar panels are used to convert light from the sun, which is composed of particles of energy called photons, into electricity that can be used to power electrical loads. Solar panels can be used for a wide variety of applications including remote power system for cabins, telecommunications equipment, remote sensing, and of course for the production of electricity by residential and commercial solar electric system.

**Bio-fertilizer Plant:**  A bio-fertilizer is a substance which contains living microorganisms which, when applied to seeds, plant surfaces, or soil, colonizes the rhino sphere or the interior of the plant and promotes growth by increasing the supply or availability of primary nutrients to the host plant.

**Hybrid Hoffman Kiln (HHK):** The Hoffman Kiln is a series of batch process kilns. Hoffman kilns are the most common kiln used in production of bricks and some other ceramic products. Patented by German Friedrich Hoffman for brick making in 1858, it was later used for time burning, and was known as Hoffman continuous kiln.

So these are some discussion about direct green finance.

**Renewable Energy:** Renewable energy is energy that is collected from renewable resources, which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat. Renewable energy often provides energy in four important areas. These are:

* Electricity generation
* Air heating or cooling
* Water heating of cooling
* Transportation
* Rural energy service

**Energy Efficiency:** Efficient energy use, sometimes simply called energy efficiency, is the goal to reduce the amount of energy required to provide products and services. For example, insulating a home allows a building to use less heating and cooling energy to achieve and maintain a comfortable temperature. There are many motivations to improve energy efficiency. Reducing energy use reduces energy costs and may result in a financial cost saving to consumers if the energy savings offset any additional costs of implementing an energy efficient technology. Reducing energy use is also seen as a solution to the problem of reducing Greenhouse gas emissions.

**Solid Waste Management**:  Solid Waste management is all the activities and actions required to manage waste from its inception to its final disposal. This includes amongst other things, collection, transport, treatment and disposal of [waste](https://en.wikipedia.org/wiki/Waste%22%20%5Co%20%22Waste) together with monitoring and regulation. It also encompasses the legal and regulatory framework that relates to waste management encompassing guidance on recycling etc. The term normally relates to all kinds of waste, whether generated during the extraction of [raw materials](https://en.wikipedia.org/wiki/Raw_material%22%20%5Co%20%22Raw%20material), the processing of raw materials into intermediate and final products, the consumption of final products, or other human activities, including municipal (residential, institutional, commercial), agricultural, and social (health care, household hazardous waste, sewage sludge).Waste management is intended to reduce adverse effects of waste on [health](https://en.wikipedia.org/wiki/Health%22%20%5Co%20%22Health), the [environment](https://en.wikipedia.org/wiki/Environment_%28biophysical%29%22%20%5Co%20%22Environment%20%28biophysical%29) or [aesthetics](https://en.wikipedia.org/wiki/Aesthetics%22%20%5Co%20%22Aesthetics). All nonhazardous solid waste from a community that requires collection and transport to a processing or disposal site is called refuse or municipal solid waste (MSW). Refuse includes garbage and rubbish. Garbage is mostly decomposable food waste; rubbish is mostly dry material such as glass, paper, cloth, or wood.

**Recycling and Recyclable Product:** Recycling is the process of converting [waste](https://en.wikipedia.org/wiki/Waste%22%20%5Co%20%22Waste) materials into reusable materials and objects. It is an alternative to "conventional" waste disposal that can save material and help lower [greenhouse gas](https://en.wikipedia.org/wiki/Greenhouse_gas%22%20%5Co%20%22Greenhouse%20gas) emissions. Recycling can prevent the waste of potentially useful materials and reduce the consumption of fresh raw materials, thereby reducing [energy](https://en.wikipedia.org/wiki/Energy%22%20%5Co%20%22Energy) usage, air pollution and water pollution. Recyclable materials include many kinds of glass, paper and cardboard, metal, plastic, [tires](https://en.wikipedia.org/wiki/Tire%22%20%5Co%20%22Tire), textiles and [electronics](https://en.wikipedia.org/wiki/Electronics%22%20%5Co%20%22Electronics). The [composting](https://en.wikipedia.org/wiki/Composting%22%20%5Co%20%22Composting) or other reuse of [biodegradable waste](https://en.wikipedia.org/wiki/Biodegradable_waste%22%20%5Co%20%22Biodegradable%20waste)—such as [food](https://en.wikipedia.org/wiki/Food_waste%22%20%5Co%20%22Food%20waste) or [garden waste](https://en.wikipedia.org/wiki/Green_waste%22%20%5Co%20%22Green%20waste)—is also considered recycling. Materials to be recycled are either brought to a collection center or picked up from the curbside, then sorted, cleaned and reprocessed into new materials destined for manufacturing.

**Liquid Waste Management:** Procedures and practices to prevent discharge of pollutants to the storm drain system or to watercourses as a result of the creation, collection, and disposal of non-hazardous liquid material. Municipal wastewater is usually conveyed in a [combined sewer](https://en.wikipedia.org/wiki/Combined_sewer%22%20%5Co%20%22Combined%20sewer) or [sanitary sewer](https://en.wikipedia.org/wiki/Sanitary_sewer%22%20%5Co%20%22Sanitary%20sewer), and treated at a [wastewater treatment plant](https://en.wikipedia.org/wiki/Wastewater_treatment_plant%22%20%5Co%20%22Wastewater%20treatment%20plant). Treated wastewater is discharged into receiving water via an effluent pipe. Wastewaters generated in areas without access to centralized sewer systems rely on [on-site wastewater systems](https://en.wikipedia.org/wiki/Onsite_sewage_facility%22%20%5Co%20%22Onsite%20sewage%20facility). These typically comprise a [septic tank](https://en.wikipedia.org/wiki/Septic_tank%22%20%5Co%20%22Septic%20tank), [drain field](https://en.wikipedia.org/wiki/Septic_drain_field%22%20%5Co%20%22Septic%20drain%20field), and optionally an [on-site treatment unit](https://en.wikipedia.org/wiki/Biofilters%22%20%5Co%20%22Biofilters). The management of wastewater belongs to the overarching term [sanitation](https://en.wikipedia.org/wiki/Sanitation%22%20%5Co%20%22Sanitation), just like the management of [human excreta](https://en.wikipedia.org/wiki/Human_waste%22%20%5Co%20%22Human%20waste) and [solid waste](https://en.wikipedia.org/wiki/Solid_waste%22%20%5Co%20%22Solid%20waste).

**3.2.2. Indirect Green Finance:**

Indirect green finance means financing the project having ETP or alike system, or which projects are financing by having ETP is known as indirect green finance. The projects are Textile factory, Effluent treatment plant and insight of the factory.

**3.3. Direct and Indirect Green Finance of Private Commercial Banks During 2012-2015:**

Given below the table or amount of money which are invested by private commercial banks for direct and indirect finance during 2012-2015:

 **3.3. Figure: Direct and Indirect Green Finance by Private Commercial Banks from 2012-2015 (Amount in Million)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Bank Name** | **Year** | **Direct Green Finance (Amount)** | **Indirect Green Finance (Amount)** | **Total Green Finance (Amount)** |
| **Dhaka Bank Ltd.** | 2013 | 740.29 | 7672.26 | 8412.55 |
| 2014 | 51.54 | 1127.06 | 1178.6 |
| 2015 | 156.74 | 4668.76 | 4825.5 |
| **City Bank Ltd.****BRAC Bank Limited** | 2014 | ………… | ………. | 3100 |
| 2015 | ……… | …………… | 2470 |
| 2013 | ………. | ………. | 3364 |
| 2014 | ……. | ………. | 3500 |
| 2015 | ……….. | ……….. | 5500 |
| **EXIM Bank** | 2012 | ………. | ……….. | 25000 |
| 2013 | 72.4 | 14054.6 | 1412.70 |
| 2014 | ……… | 18282.8 | 18282.8 |
| 2015 | 25544.8 | 24243.9 | 49788.7 |
| **DBBL** | 2013 | 35 | 15 | 50 |
| 2015 | 283.58 | ………. | 283.58 |
| **Islami Bank Bangladesh limited** | 2013 | 2135.82 | 4113.84 | 6249.66 |
| 2014 | 787 | 48353 | 49140 |
| 2015 | 2550.29 | 75449.8 | 78000.09 |
| **Jamuna Bank** | 2013 | 4.11 | 3231.15 | 3235.26 |
| 2014 | 24.4 | 2316.45 | 2340.85 |
| 2015 | 195.98 | 3255.26 | 3451.24 |
| **Mercantile Bank** | 2013 | 10 | 162 | 172 |
| 2014 | 563.28 | 152.07 | 715.35 |
| 2015 | 20 | 2.50 | 22.50 |
| **Mutual Trust Bank** | 2013 | ………… | 2560.94 | 2560.94 |
| 2014 | …………… | …………… | 2046.23 |
| 2015 | ……………. | ……………. | 665.61 |
| **One Bank Limited** | 2014 | ………….. | ………….. | 343.23 |
| 2015 | 37.49 | 386.73 | 424.22 |
| **Premier Bank****Social Islami Bank Limited** | 2012 | …………… | 3761 | 3761 |
| 2013 | ……………… | 4838 | 4838 |
| 2014 | …………….. | 5015 | 5015 |
| 2013 | 952 | 3224 | 4176 |
| 2014 | 1065 | 5453 | 6518 |
| 2015 | 291.68 | 5568.09 m | 5859.77 |
| **Trust Bank Limited** | 2013 | ……………. | …………… | 9098.70 |
| 2014 | 695.29 | 30969 | 31664.29 |
| 2015 | 228.58 | 24919.43 | 25148.01 |
| **South East Bank Limited** | 2014 | …………… | ……………. | 17761.76 |
| 2015 | 73 | ……………. | 73 |
| **Standard Bank Limited** | 2015 | 131.13 | 4062 | 4193.13 |
| **National Bank Limited** | 2014 | 15.30 | 923.40 | 938.70 |
| 2015 | 365.17 | 333.72 | 698.89 |
| **Modhumati Bank Limited** | 2015 | 10 | ………………. | 10 |

Source: Annual report of private commercial banks on green banking

**Explanation:**

Investment in green activities of private commercial banks are increasing day by day. Most of the private commercial banks try make higher investment in environment friendly activities with lower level of interest. After analyzing data we see that almost every private commercial banks increased their investment in green economy year by year.

Chapter-4

Green Financing

**4.1. Category of Green Finance Activities**

There are many categories in which banks financed as the green investment to meet the environmental obligation. That can be classified into direct and indirect investment. Most common direct invested products are:

* Renewable energy
* Energy efficiency
* Solid waste management
* Liquid waste management
* Alternative energy
* Fire burnt bricks
* Non fire block brick
* Recycling and recyclable product
* Green industry
* Safety and security of factory
* Miscellaneous
* Others

**4.2. Direct Green Finance:**

Given below the table or amount of money which is invested for direct finance during 2012 to 2016:

**Table-4.2.1: Renewable Energy (in million)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Bank category** | **2012** | **2013** | **2014** | **2015** | **2016 (up to third quarter)** |
| SOCBs | 984.94 | 264.6 | 60.08 | 74.51 | 32.27 |
| SDBs | 249.39 | 133.22 | 6.42 | .10 | 4.20 |
| PCBs | 1685.56 | 935.74 | 2732 | 1190.13 | 1582.42 |
| FCBs | 718.48 | 671.93 | 627.9 | 507.6 | 63.18 |
| New banks |  |  | 9.8 | 96.19 | 0 |
|  **Total** | **3638.37** | **2005.49** | **3436.2** | **1868.53** | **1682.07** |
| FIs |  |  | 2696 | 6222.23 | 1474.25 |
|  **Grand total** | **3638.37** | **2005.49** | **6132.2** | **8090.76** | **3156.32** |

Source: Bangladesh bank annual report on green banking

**Explanation:** Renewables energy contributed 19.2% to human’s global energy consumption and 23.7% to the generation of electricity in 2015 (source: www. Wikipedia.com). in renewable energy private commercial banks (PCBs) have maximum contribution 46.33% in 2012, 46.66% in 2013, 44.55% in 2014, 14.71% in 2015, 50.13% in 2016. On the other hand specialized development banks (SDBs) have the lowest contribution 6.85% in 2012, 6.64% in 2013, 0.10% in 2014, 0.001% in 2015, 0.13% in 2016. Financial institutions contribute 43.96% in 2014, 76.91% in 2015, and 46.71% in 2016

 **Table-4.2.2: Energy Efficiency (in million)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bank category** | **2014** | **2015** | **2016 (up to third quarter)** |
| SOCBs | 57.02 | 45.11 | 0 |
| SDBs | 0 | 0 | 1.60 |
| PCBs | 919 | 1452.38 | 1847.41 |
| FCBs | 0 | 0.6 | 0 |
| New banks | 0 | 0 | 0 |
|  **Total**  | **976.02** | **1498.09** | **1849.01** |
| FIs | 13.77 | 168 | 25.2 |
|  **Grand total** | **989.79** | **1666.09** | **1874.21** |

 Source: Bangladesh bank annual report on green banking

**Note:** there is no bank invested in Energy efficiency in 2012, 2013

**Explanation:** energy efficiency reduce the cost of energy. Reducing energy is use is also seen as a solution to the problem of reducing greenhouse gas emission. In energy efficiency private commercial banks have the maximum contribution. PCBs contribute 92.85% in 2014, 87.17% in 2015, and 98.57% in 2016. FCBs have the lowest contribution in 2015 is 0.04%. Financial institutions (FIs) contribute 1.39% in 2014, 10.08% in 2015, and 1.34% in 2016. New banks have no contribution in energy efficiency.

 **Table-4.2.3: Solid Waste Management (in million)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bank** **category** | **2014** | **2015** | **2016 (up to third quarter)** |
| SOCBs | 14.9 | 0 | 0 |
| SDBs | 0 | 0 |  |
| PCBs | 1761.8 | 352.92 | 9.96 |
| FCBs | 0 | 0 | 0 |
| New banks | 0 | 0 | 0 |
|  **Total**  | **1776.7** | **352.92** | **9.96** |
| FIs | 0 | 0 | 0 |
|  **Grand** **total** | **1776.7** | **352.92** | **9.96** |

 **Source**: Bangladesh bank annual report on green banking

**Explanation:** Solid waste can create unsanitary conditions. These conditions can lead to the environmental pollutions which lead to the human disease. In the solid waste management private commercial banks (PCBs) have the maximum contribution 99.16% in 2014, 100% in 2015 and 2016. State owned commercial banks (SOCBs) has the lowest contribution 0.84% in 2014. On the other hand specialized development banks (SDBs), Foreign commercial banks (FCBs), New banks and Financial institutions (FIs) has no contribution in solid waste management.

**Table-4.2.4: Liquid Waste Management (in million)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bank category** | **2014** | **2015** | **2016 (up to third quarter)** |
| SOCBs | 21.98 | 15 | 53.36 |
| SDBs | 0 | 0 | 0 |
| PCBs | 1258.38 | 2327.11 | 3373.88 |
| FCBs | 2.5 | 50 | 36.2 |
| New banks | 0 | 0 | 0 |
|  **Total**  | **1282.86** | **2392.11** | **3463.44** |
| FIs | 98.54 | 438 | 163.07 |
|  **Grand Total** | **1381.4** | **2830.11** | **3626.51** |

Source: Bangladesh bank annual report on green banking

**Explanation:** liquid waste management used to constructions projects that generate non-hazardous by products, residuals or wastes. In liquid waste management private commercial banks (PCBs) has the maximum contribution 91.09% in 2014, 82.23% in 2015, 93.03% in 2016. Foreign commercial banks (FCBs) has the lowest contribution in liquid waste management is 0.19% in 2014, 1.77% in 2015, and 0.99% in 2016. On the other hand specialized development banks (SDBs) and new banks have no contribution in liquid waste management.

**Table-4.2.5: Alternative Energy (in million)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bank category** | **2014** | **2015** | **2016** |
| SOCBs | 0 | 17.25 | 160 |
| SDBs | 0 | 0 | 0 |
| PCBs | 0 | 98.1 | 102.57 |
| FCBs | 0 | 0 | 0 |
| New banks | 0 | 0 | 0 |
|  **Total**  | **0** | **115.35** | **262.57** |
| FIs | 0 | 0 | 9.2 |
|  **Grand total** | **0** | **115.35** | **271.77** |

Source: Bangladesh bank annual report on green banking

**Explanation:** Alternative energy concern about the emissions of high carbon di oxide. In alternative energy private commercial banks (PCBs) has 85.05% contribution in 2015, 37.74% in 2016. State owned commercial banks (SOCBs) has 14.95% contribution in 2015 and 58.87% in 2016. Financial institutions (FIs) contribute 3.39%.

|  |  |  |  |
| --- | --- | --- | --- |
| **Bank category** | **2014** | **2015** | **2016 (up to third quarter)** |
| SOCBs | 1265.6 | 1461.86 | 114.87 |
| SDBs | 33.96 | 16.5 | 12.23 |
| PCBs | 3112 | 4356.49 | 31914 |
| FCBs | 0 | 0 | 0 |
| New banks | 220.89 | 799.16 | 0 |
|  **Total**  | **4632.45** | **6634.01** | **32041.1** |
| FIs | 47.37 | 97.6 | 799.63 |
|  **Grand total** | **4679.82** | **6731.61** | **32840.73** |

 **Table-4.2.6: Fire Burnt Bricks (in million)**

 Source: Bangladesh bank annual report on green banking

**Explanation:** In fire burnt brick private commercial banks (PCBs) has the maximum contribution 66.5% in 2014, 64.72% in 2015, 97.18% in 2016. Socialized development banks (SDBs) has the lowest contribution 0.73% in 2014, 0.25% in 2015, and 0.04% in 2016. Foreign commercial banks (FCBs) has no contribution in Fire burnt bricks.

 **Table-4.2.7: Non Fire Block Brick (in million)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bank category** | **2014** | **2015** | **2016 (up to third quarter)** |
| SOCBs | 0 | 0 | 1 |
| SDBs | 0 | 0 | 0 |
| PCBs | 0 | 9.7 | 105.37 |
| FCBs | 0 | 0 | 0 |
| New banks | 20.5 | 82.4 | 0 |
|  **Total**  | **20.5** | **92.1** | **106.37** |
| FIs | 0 | 40 | 0 |
|  **Grand total** | **20.5** | **132.1** | **106.37** |

 Source: Bangladesh bank annual report on green banking

**Explanation:** Non fire block brick decrease the pollution of environment. It is highly used to decrease the production of fire bricks. In non-fire block brick new banks have maximum contribution in 2014, 2015 is 100% and 62.38%. In 2016 private commercial banks (PCBs) has the highest contribution is 99.05%. Financial institutions (FIs) contribute 30.28% in 2015. State owned commercial banks (SOCBs) has the lowest contribution 0.05% in 2016.

 **Table-4.2.8: Recycling and Recyclable Product (in million)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bank category** | **2014** | **2015** | **2016 (up to third quarter)** |
| **SOCBs** | 0 | 8.05 | 190.41 |
| **SDBs** | 8.9 | 0 | 0 |
| **PCBs** | 1478.39 | 2747.19 | 3055.55 |
| **FCBs** | 1.7 | 28.05 | 77 |
| **New banks** | 0 | 34 | 0 |
| **Total**  | **1488.99** | **2817.29** | **3322.96** |
| **FIs** | 0 | 562.63 | 188.89 |
| **Grand total** | **1488.99** | **3379.92** | **3511.85** |

 Source: Bangladesh bank annual report on green banking

**Explanation:** Recycling and recyclable products save materials and help lower greenhouse gas emission. It can prevent the waste of potentially useful materials and reduce the consumption of fresh raw materials which reduce the energy usages, air pollution and water pollution. In this sector private commercial banks have highest contribution 99.29% in 2014, 81.28% in 2015, 87.01% in 2016. In 2014 and 2016 foreign commercial banks (FCBs) has the lowest contribution 0.11% and 2.19%. In 2015 state owned commercial banks (SOCBs) has the lowest contribution 0.24%.

**Table-4.2.9: Green Industry (in million)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bank category** | **2014** | **2015** | **2016 (up to third quarter)** |
| **SOCBs** | 320 | 480 | 0 |
| **SDBs** | 0 | 0 | 0 |
| **PCBs** | 0 | 3274.36 | 2268.86 |
| **FCBs** | 2407.93 | 464.29 | 75.55 |
| **New banks** | 0 | 0 | 0 |
| **Total**  | **2727.93** | **4218.65** | **2344.41** |
| **FIs** | 0 | 230 | 156 |
| **Grand total** | **2727.93** | **4448.65** | **2500.41** |

 Source: Bangladesh bank annual report on green banking

**Explanation:** Green industry helps to attain sustainable economic growth and promoting sustainable economies. It helps to improve industrial production process and resource-efficient productivity. In 2014 foreign commercial banks (FCBs) has the highest contribution 88.27%. In 2015 and 2016 private commercial banks (PCBs) have maximum contribution 73.60% and 90.74%. Specialized development banks (SDBs) and new banks have no contribution in Green banking.

**Table-4.2.10: Safety and Security of Factory (in million)**

|  |  |  |  |
| --- | --- | --- | --- |
|  **Bank category** | **2014** | **2015** | **2016 (up to third quarter)** |
| **SOCBs** | 0 | 0 | 40 |
| **SDBs** | 0 | 0 | 0 |
| **PCBs** | 37.07 | 331.48 | 1856.51 |
| **FCBs** | 1.5 | 13.96 | 74.19 |
| **New banks** | 0 | 0 | 0 |
| **Total**  | **38.57** | **345.44** | **1970.7** |
| **FIs** | 7 | 82.7 | 37 |
| **Grand total** | **45.57** | **428.14** | **2007.7** |

 Source: Bangladesh bank annual report on green banking

**Explanation:** Safety and security of factory ensures the safety of employees, client files, assets, and confidential documents. It is important because corporations, businesses offices are often the target of sabotage, unlawful entry and theft. In safety and security of factory private commercial banks have maximum contribution 81.34% in 2014, 77.42% in 2015, 92.47% in 2016. Foreign commercial banks (FCBs) contribute 3.29% in 2014, 3.26% in 2015, and 3.71% in 2016. State owned commercial bank (SOCBs) only contribute 1.99% in 2016.

 **Table-4.2.11: Miscellaneous (in million)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bank category** | **2014** | **2015** | **2016 (up to third quarter)** |
| **SOCBs** | 1.35 | 2.65 | 10.39 |
| **SDBs** | 3.3 | 2.1 | 0 |
| **PCBs** | 0.58 | 2.04 | 59.2 |
| **FCBs** | 0 | 0 | 0 |
| **New banks** | 0 | 1.8 | 0 |
| **Total**  | **5.28** | **8.59** | **69.59** |
| **FIs** | 0 | 0 | 0 |
| **Grand total** | **5.28** | **8.59** | **69.59** |

 Source: Bangladesh bank annual report on green banking

**Explanation:** In Misc. Specialized development bank (SDBs) have maximum contribution in 2014 and 2015 is 62.5% and 24.45%. In 2016 Private commercial bank has highest contribution 85.07%. On the other hand, in 2014 PCBs has the lowest contribution 10.98%, in 2015 new banks has the minimum contribution 20.95%, and state owned commercial banks (SOCBs) contribute the minimum level 14.93%. Foreign commercial banks (FCBs) and financial institutions (FIs) has no contribution in Misc.

**Table-4.2.12: Others (in million)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Bank category** | **2012** | **2013** | **2014** | **2015** | **2016 (up to third quarter)** |
| **SOCBs** | 1860.91 | 475.09 | 33.49 | 670.12 | 196.1 |
| **SDBs** | 110.97 | 43.05 | 85.08 | 0 | 0 |
| **PCBs** | 2089.58 | 20067 | 1865.62 | 3116.19 | 210.91 |
| **FCBs** | 0 | 0 | 0 | 150.75 | 0.93 |
| **New banks** |  |  | 0 | 5.04 | 0 |
| **Total**  | **4061.46** | **20585.14** | **1984.19** | **3942.1** | **407.94** |
| **FIs** |  |  | 1.22 | 45.03 | 19.6 |
| **Grand total** | **4061.46** | **20585.14** | **1985.41** | **3987.13** | **427.54** |

 Source: Bangladesh bank annual report on green banking

**Explanation:** In other sectors of direct green banking, private commercial bank have maximum contribution 51.45% in 2012, 97.48% in 2013, 93.97% in 2014, 78.16% in 2015, 49.33% in 2016. Specialized development banks (SDBs) contribute up to 2014. Financial institutions (FIs) also contribute in others sectors. Their contributions are, 0.06% in 2014, 1.13% in 2015, and 5.48% in 2016. Foreign commercial banks (FCBS) and new banks did not contribute in 2012, 2013, and 2014.

**4.3. Direct Green Finance on Total Loan Disbursement:**

Direct green finance on total funded loan disbursement are showed below by a table and a graph on percentage from the year 2014-2016:

 **Table-4.3: Direct Green Finance as % of Total Funded Loan Disbursement**

|  |  |  |  |
| --- | --- | --- | --- |
| Category | 2014 | 2015 | 2016 (up to third quarter) |
| **Banks**  | 0.99% | 1.75% | 1.36% |
| **Financial institutions**  | 7.14% | 14.28% | 4.08% |

Source: Bangladesh bank annual report on green banking

**4.3. Graph: direct green finance on funded loan disbursement**

 Source: Bangladesh bank annual report on green banking

**4.4. Bangladesh Bank Refinance Scheme:**

Promotion of renewable energy & environmental friendly financial activity of Bangladesh is the main objective of BB refinance scheme. Refinance facilities are extended to the participating Banks and Financial Institutions (PFIs) in this purpose. 41 banks and 16 Financial Institutions so far have signed participation agreement with Bangladesh Bank. The disbursement scenario of this scheme from 2014 to 2016 (up to third quarter) is given below:

**Table-4.4:** **Sub-category/ Product wise Disbursement**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category of product** | **2014** | **2015** | **2016** |
| Bio gas  | 56.55 | 65.32 | 53.21 |
| ETP |  | 6.40 | 51.56 |
| Green industry |  | 200 | 200 |
| HHK | 39.5 | 35.32 | 150 |
| Organic manure from slurry |  |  | 0.20 |
| Paper waste recycling |  |  | 20 |
| Safe working environment |  | 28.68 | 17 |
| For textile and garments  |  |  | 19.45 |
| Industry works |  |  | 0.96 |
| SHS |  | 74.68 | 84.75 |
| Vermicomposting  |  | 2.25 | 11.21 |

Source: Bangladesh bank annual report on green banking

**Showing the table by a chart:**

Graph-4.4: Bangladesh bank refinance scheme

Source: Annual Report of Bangladesh Bank on Green Banking

**4.5. Performance of Green Financing of Private Commercial Banks:**

Performance of green financing of private commercial banks in Bangladesh are showed below by a table:**4.5. Table: Performance of Private commercial banks in several category Green financing products:**

|  |  |
| --- | --- |
| Category of product | Banks Name |
| AB Bank | City Bank | Dhaka Bank  | Mutual Trust Bank | National Bank Ltd. | One Bank | Premier Bank  | South East Bank | Standard Bank Ltd. |
| Installation of ETP | ….. | ….. |  |  |  |  |  | ….. |  |
| Bio-gas Plant | ….. | ….. |  |  |  |  |  |  |  |
| Solar panel | ….. | ….. |  |  |  |  |  |  |  |
| Bio-fertilizer plant | ….. | ….. | ….. | ….. | ….. |  |  | ….. | ….. |
| Hybrid Hoffman Kiln (HHK) | ….. | ….. |  |  | ….. | ….. |  |  |  |
| Renewable energy |  | ..... | ….. | ….. | ….. |  |  | …... | ….. |
| Energy efficiency |  |  |  |  |  | ….. |  | ….. | ….. |
| Solid waste management |  | ..... | ….. | ….. |  | ….. | ….. | ….. | ….. |
| Fire burnt bricks | ….. | …. |  |  | ….. |  | ….. | ….. | ….. |
| Recycling and recyclable product |  |  | ….. | ….. | ….. | …… | …… | ….. | ….. |
| Green industry | ….. |  |  |  | ….. | ….. |  | ….. | …... |

**Continue……….**

Source: Bangladesh Bank Annual report on Green Banking

|  |  |
| --- | --- |
| Category of product | Banks Name  |
| Brac Bank | EXIM Bank | Islami Bank Bangledsh Ltd. | Jamuna Bank | Mercantile Bank | Social Islami Bank Ltd. | Trust Bank | DBBL | Dhaka Bank  |
| Installation of ETP |  |  |  |  |  |  | ..... |  |  |
| Bio-gas Plant |  |  |  | ..... |  |  |  |  |  |
| Solar panel | ..... |  |  |  |  |  | ….. |  |  |
| Bio-fertilizer plant | ..... | ..... | ..... | ..... |  | ..... |  | ..... | ..... |
| Hybrid Hoffman Kiln (HHK) | ..... | ..... | ..... |  |  |  |  | ..... |  |
| Renewable energy | ..... |  | ..... | ..... |  |  | ..... |  |  |
| Energy efficiency | ..... |  |  | ..... | ..... | ..... | ..... |  | ..... |
| Solid waste management | ..... |  |  |  |  |  | ..... | ..... | ..... |
| Fire burnt bricks |  | ..... | ..... | ..... |  | ..... | ..... |  | ..... |
| Recycling and recyclable product | ..... | ..... | ..... | ..... | ..... | ..... |  |  | ..... |
| Green industry | ..... |  |  | ..... |  | ..... |  | ..... | ..... |

**Explanation:** Most of the private commercial banks participate in Green banking activities. Form these private commercial banks we chose 9 commercial banks as a sample size. From those bank almost every bank participated in the installation of ETP. Private commercial banks highly invested in Bio-gas plant, Installation of ETP, Solar panel, Renewable energy, and Solid waste management. Very few banks invested in Fire burn bricks and Recyclable products.

Chapter-5

Findings, Recommendations and Conclusion

**5.1. Findings:**

Bank in Bangladesh are playing a vital role towards sustainable development by introducing various green banking practices. Adoption of these green banking practices by the customers will result saving of energy, fuel, paper and other natural resources. Through many studies have been made in the field of green banking but there have been very studies done in Bangladesh, especially in banks. The researcher realizes that no study has been carried out on environmental aspects of various green banking practices introduced by the banks in Bangladesh private or public sector. Therefore, it is the high time to carry out study on green banking practices to make the people aware about their benefits to the users as well as the environment. Such study will surely help the banking sector, customer, policy makers and the society as a whole.

* In direct green finance and indirect green finance both sector private commercial banks (PCBs) and foreign commercial banks (FCBs) have the maximum contribution. But state owned commercial banks (SOCBs) and specialized development banks (SDBs) have the small part of contribution lower than private commercial banks (PCBs) and foreign commercial banks (FCBs).
* In budget allocation and utilization private commercial banks (PCBs) and foreign commercial banks (FCBs) always utilize the maximum amount of funds whereas state owned commercial banks (SCBs) and specialized development banks (SDBs) utilize the minimum amount or small amount of funds which is less than other banks.
* 46 banks out of 56 had bank exposure in green finance. Here, 40 banks involve in direct finance and 30 banks involve in indirect finance.
* Lack of knowledge, even among the employees of different banks in also noticed.
* All the banks are not equally coming forward to introduce green finance practices.
* There has been lower contribution in non-fire block brick.
* Most of the bank performing green financing activities but very few banks contribute in green industry.
* The main problem of green finance practices in Bangladesh; the banks have not able to make their customers aware about the green banking practices. Lack of awareness among the general customers has caused underutilization of the green practice offered by the bank in BD.

**5.2. Recommendations:**

To make our surroundings green the proper policy and guidelines are necessary. That’s why the policy formulation where a way is to decorate and in addition to this a yearly budget will gave to determined. A formal green banking implementation unit by which day to day green loan disbursement have to be supervised, and designing the administration will also be the subject matter of that unit. These are the main requirements going to be implemented into phase 1, 2, 3 by the declaration of Bangladesh bank. In addition to these, some recommendations have been derived, which are followings:

* Consumers are not aware of green banking system and the way it works out into the development of ecology. That’s why various campaign programs will have to be taken to raise awareness and raise voice against pollution.
* Media advertisement of financial institutions can reach to the knowledge of general client. Agri-financing is also a part of green movement. By advertisement rural people will also understand how to get financing and be part of environmental sustainability.
* Due to the high loan pricing, green financing is less profitable to bank but to consumers than the conventional financing. So, a bank can move to involve in contributing green industry in the way a venture capitalist run the clients business. This will appreciate the customers to initiate different types of green firms.
* Bank should encourage the businesses that are eco—friendly and the short-term green loan to be given to the small businesses who are working hard making the soil made, jute made, bamboo made product to strengthen the cottage industry with a condition that if any polluting satiation creates the interest will be high.
* NGOs and cooperatives societies can be a part of this providing small funding and looking after the investment in visible, because they can easily reach the rural peple from a short distance. And the consumers can get helped from banks when it is a large layout. So, mutual cooperation between financial institutions and NGOs and cooperative societies is necessary.
* An initiative has been taken by Agrani bank limited to finance in the roof gardening. In such a way, banks can provide small fund to the house owner to roof gardening, which can save the dwellers from overheating inside the room, directs to reduce the uses of air conditions and save energy.
* Lots of organizations are operated in Bangladesh like ready-made garments, leather companies and so on. All the firms dump a large amount of wastage to the riverbank as well as into the rivers. That application spreads the toxic chemical like nitrogen throughout the water which leads to the sea, the ultimate destination. It makes the dead zone in the sea initiating oxygen free area that is harmful to the underwater lives.
* Banks should finance into the green waste management system heavily and monitor closely after investment.
* Government should carefully monitor and supervised the green banking practices in Bangladesh.
* Bangladesh bank must monitor the adherence of green banking guidelines by the commercial and non-commercial banks.
* Coordination among concerned authorities.
* Apply quantitative approach for environmental risk rating.
* Shifting different categories of industry (such as, garments, textiles, and tannery) to a proper location.
* Carbon footprint reduction by saving energy and paper.
* Carbon footprint reduction by the offering transportation services for their employee.
* Providing environment friendly rewards to customers.
* By financing more and more environment friendly projects.
* Employee needs training to obtain knowledge regarding various green banking practices.
* Awareness of top management.
* Encouraging borrowers to go green.
* Need to apply green banking and use environmental risk management (ERM) guideline in efficient manner.
* Develop a culture within the organization based on environmental governance.
* Promoting different forms of electronic banking.
* Share knowledge and technical know-how with peer groups.
* Further integration with credit risk management in the overall credit risk methodology.

**5.3. Conclusion:**

Bangladesh is one of the most climate changes vulnerable countries to climate change in the World. From the overall discussion, it can be said that green financing in Bangladesh is growing at positive trend. In line with global development and in response to the global warming it is not in a satisfactory level. Already, Bangladesh bank emphasizes the significance of green investment activities. The findings shows the upward trend how a bank is going to be green. The in-house practices can give a dramatically changes to the financial sector. Since all the industry are moving keeping hand to hand with banks, the flow of the financing to the working capital investment and project investment will affect positively for eco-supportive product innovation, and by this way the green-house gas emission, as well as the air, the water, the sound pollution will be decreased in a higher range within a shortest possible of time. The environment is comprised of people, trees, animals, birds etc. every living being gas the right onto the environment. We the human cannot ruin all the creatures of the world. The exchange of commodity established the relation among the living entity and the medium of exchanges is money. So, financial sector is the root of human strength and only financial sector play the most contributory role for the development of economy as well as society. That’s why the innovation of green banking is one of the paths following which all the countries can go for sustainable development. The trend also shows that. After all, green banking is the banking for green revolution accepted by the world leading, developed, and developing as well as least and under development countries. The recommendations construed here will be effective when they are followed by the national and international financial bodies, which will revive the forestation and enough oxygen for the living being. So, “Go Green”.

Bibliography