



# GREEN FINANCE FOR SUSTAINABLE DEVELOPMENT IN INDIA

## *A CASE STUDY OF SIX PUBLIC SECTOR BANKS*

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**Abstract:** India is rapidly developing economically but faces environmental sustainability challenges. Green finance is seen as an opportunity to fund India's transition to a greener economy. Banks play an important role by offering various green financing schemes for sectors like renewable energy, electric vehicles, and rooftop solar. Major initiatives include green loans, green bonds, and green deposits. Public sector banks like SBI, Union Bank, Canara Bank, Punjab National Bank, Bank of Baroda, Central Bank of India etc. have launched several schemes to support renewable energy projects, electric mobility, and carbon reduction efforts. This paper studies the green finance initiatives of six public sector banks in India and analyses them. These initiatives are also compared with major global public sector banks to identify the complications of implementation.

**Keywords:** green finance, public sector banks, renewability, sustainability, solar power, electric vehicles

### Introduction

India, poised to be the world's third-largest economy by 2030, faces a defining challenge – balancing its rapid development with environmental sustainability. India's rapid economic growth has come at a cost, with its carbon emissions projected to soar by 50% by 2030 if current trends continue. This poses significant environmental, social, and economic risks. However, India also presents exceptional opportunities in the green finance space, estimated to reach a \$1.4 trillion market by 2030 (EY, 2023). Green finance schemes are crucial for India to mitigate environmental degradation while fuelling economic growth. They facilitate investment in renewable energy, electric mobility, and sustainable infrastructure, aligning with India's ambitious climate goals. By promoting green initiatives, these schemes drive innovation, create jobs, and foster resilience against climate change impacts. Ultimately, they pave the way for a more sustainable and prosperous future for India and its citizens. As one of the world's largest emitters of greenhouse gases, India requires a budget of over US\$ 10 trillion to accomplish its net zero emissions target by 2070. Several measures are underway in the public and private sectors, leading to increased investment and financing opportunities. One of them is green finance—a sustainable or responsible finance that effectively finances projects with environmental benefits. India's green finance market is expected to grow at a CAGR of 12.1% between 2020 and 2030, reaching \$1.4 trillion by 2030. This paper explores how banks can leverage their diverse financial instruments and resources to drive India's green ambitions, analysing existing initiatives and presenting impactful case studies.

### Literature Survey

The urgency for climate action has propelled green financing to the forefront of global financial discourse. According to the Global Climate Fund (2023), the world needs \$4 trillion annually to achieve the goals of the Paris Agreement. Public sector banks (PSBs) play a crucial role in bridging the green finance gap, offering financial stability and lower financing costs compared to private actors. The Green Investment Scheme of the China Development Bank (CDB) provides concessional loans and technical assistance for green projects. Additionally, the Agricultural Bank of China (ABC) launched the "Green Channel" program, offering preferential lending rates for environmentally friendly projects (Zhang, 2023). In Germany, the KfW offers various green financing schemes, including loans for renewable energy, energy efficiency, and sustainable infrastructure (Siebert, 2022). The Caisse des Dépôts et Consignations (CDC) established the French Infrastructure Fund for Climate Change (FIECC), financing low-carbon infrastructure projects (Mazzucato, 2021).

In India, green financing holds immense potential as evidenced by authors like Rai et al. (2020) and ORF (2023). Public sector banks can leverage international strategies, adapting them to suit the Indian context. For instance, adopting concessional interest rates as suggested by IREDA (2016) and exploring Green Bonds mentioned by the World Bank (2023) could prove beneficial.

However, challenges like greenwashing and limited financial literacy require addressing, as emphasized by Ghosh (2022) and RBI (2023).

Realizing India's green ambitions necessitates active participation from public sector banks. By drawing upon best global practices, addressing local challenges, and continuously innovating, these institutions can play a pivotal role in financing a sustainable future for the nation.

## Research Methodology

This research aims to evaluate the green finance schemes offered by six Indian public sector banks (PSBs) examining their potential for promoting a sustainable future. Semi-structured interviews were conducted with employees from each bank focused on scheme design and implementation. Information was gathered from open-access sources provided by each bank. This data helped understand scheme details, eligibility criteria, loan disbursements, repayment period, margin etc. For the purpose of the research field visits were conducted to different branches within each bank. Schemes across different Indian public sector banks were studied and compared with major foreign public sector banks.

## Background of Green Financing

The term green economy was first coined in a 1989 report for the Government of the United Kingdom by a group of leading environmental economists. The Kyoto Protocol in 1997 laid the early groundwork for climate-related financial mechanisms. The 2008 financial crisis prompted an increased focus on sustainable investments. Global initiatives like the UN Principles for Responsible Banking and the Paris Agreement further solidified green finance in the 21<sup>st</sup> century. Today, it continues to evolve as a key driver for environmentally sustainable economic practices.

India's journey in green finance can be linked to its participation in international discussions on climate change and sustainable development. The country became a party to the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, signalling its commitment to addressing environmental concerns. The subsequent adoption of the Paris Agreement in 2015 further solidified India's commitment to mitigating climate change impacts. One of the pivotal moments in the evolution of green finance in India was the establishment of the National Action Plan on Climate Change (NAPCC) in 2008.

The Reserve Bank of India (RBI), as the country's central banking institution, has played a crucial role in promoting green finance. In 2015, the RBI issued guidelines for banks to include environmental and social risk factors in their lending decisions. The introduction of the Sustainable Development and Green Finance framework in 2019 further emphasized the need for banks to integrate sustainability into their operations. The Securities and Exchange Board of India (SEBI) has also contributed to the evolution of green finance by introducing measures to encourage environmentally responsible practices in the capital market. The SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015, mandated the disclosure of business responsibility reports, prompting companies to disclose their initiatives towards environmental sustainability. The year is considered a turning point with the issuance of India's first green bond by Yes Bank. The year 2021 marked the inclusion of "Green Finance" as a separate section in the RBI's Annual Report, highlighting its growing importance. In 2023, India received the first tranche of sovereign green bonds worth INR 80 billion, showcasing investor confidence in India's green transition.

The government's push for renewable energy has been a driving force in the evolution of green finance. The ambitious targets for renewable energy capacity, as outlined in the National Solar Mission and National Wind Energy Mission, have attracted investments and financial innovations. The establishment of the Green Climate Fund in 2010 and subsequent funding for climate-related projects has further catalysed green finance initiatives in India. Green lending in India reached \$88 billion in 2022, with renewable energy receiving the highest share. Green bond issuance in India will reach \$5.8 billion by 2022, with a significant increase in recent years. The Indian green finance market, with an estimated potential of \$1.4 trillion by 2030, offers lucrative opportunities for banks.

## Case Studies: Green Financing Schemes by Indian Banks

### 1. Union Bank

Union Bank of India, a public sector giant, stands tall with over 100 years of banking legacy. With a sprawling network of branches and ATMs, it serves millions across urban and rural India. Union Bank of India plays a significant role in India's green financing landscape.

#### • The Union Solar Scheme

This is a loan scheme offered by Union Bank of India to help businesses install rooftop solar panels. The objective of this scheme is to finance MSMEs/Business Enterprises on the pan India level towards setting up of Rooftop/Ground mounted Solar Units aimed at cost saving and increased use of renewable energy for existing business use (Captive consumption). The loan quantum is a minimum above Rs 10 lakh to a maximum of Rs 16.00 Crore. Solar units with a minimum capacity of 10-20 kW and a maximum capacity of 4 MW are to be financed under the scheme.

### •The Union Rooftop Solar Scheme (URTS)

The Union Rooftop Solar Scheme (URTS) is an initiative by the Union Bank of India to promote the adoption of rooftop solar power systems in India. Launched in 2018, the scheme offers financial assistance to residences for installing grid-connected rooftop solar power plants.

The purpose of this scheme is to set up grid-connected Roof Top Solar systems with up to 10 KW plants for individuals having existing independent houses and who have not availed of a loan with any other bank/FI against the said house.

Resident Indian Citizens and Non – resident Indians as eligible under the Home Loan scheme will be eligible under the URTS scheme also. The minimum entry age of the applicant should be 18 years. The maximum permissible age at the end of repayment for both salaried and non-salaried class of borrowers is 75 years.

Thus, individuals having a regular source of income after 60 years can be considered for repayment beyond 60 years of age. The maximum quantum of the loan per individual is 75% of the Project Cost (as per MNRE approved dealer) or Rs.10.00 lakh whichever is lower subject to the repayment capacity of the borrower. 5% of the project cost will be contributed by the borrower under this scheme.

40% subsidy of the project cost for installation of Roof Top Solar of 3 KW And 20% subsidy for beyond 3 KW and up to 10 KW. The repayment period is 20 Years in EMI, or the repayment period stipulated under a housing loan whichever is earlier.

### •Renewable Energy Equipment

□ **Financing solar energy-based pump set loans:** The purpose of this scheme is to provide loans for the installation of solar water pumping systems. Loan eligibility is for the farmer to own an economic land holding with a minimum of 10 acres with an adequate source of water. Quantum of loan is a maximum of 75% of the cost of the equipment and must be paid back in 7 years.

□ **Solar Water Heater:** The objective of this program is to finance the purchase of brand-new solar water heating systems with necessary accessories for usage in agro-processing Units. The loan is given to small & marginal farmers/sharecroppers/tenant farmers/ agri-entrepreneurs of up to 85% of the project cost including the cost of accessories.

□ **Solar Home Lightening Scheme:** Solar home lighting system aims at providing electricity for operating LED lights and small DC loads for specified hours of operation per day in rural farms. Small and Marginal farmers /sharecroppers/tenant farmers/ Agri-entrepreneurs are eligible for the loan up to 85% of the project cost including the cost of accessories.

□ **Gobar / Biogas Plant:** The purpose of this scheme is to provide hassle-free and adequate credit for the construction of a biogas/gobar gas plant and to acquire accessories like a stove, lamp, etc. by way of a term loan. The beneficiary farmers should have a minimum number of cattle herds about the size of the plant and should have a proper site for the establishment of the Plant. The loan amount will depend upon the size and type of the plant and the NABARD project unit cost.

### • The Union Green Miles scheme

**UNION MILES: (Applicable from 01-01-2024)**

Type of vehicle	CIC score	Reference Rate(D)	Premium (E)	Effective ROI (D+E=F)
New 4-Wheeler	800 & Above	EBLR	0.10%	9.35%
	From 750 - 799	EBLR	0.40%	9.65%
	From 700-749	EBLR	0.50%	9.75%
	From 650-699	EBLR	1.00%	10.25%
New 2-Wheeler	below 650	EBLR	1.20%	10.45%
	700 & above	EBLR	3.10%	12.35%
Old 4 - Wheeler (Not older than 3 years)	below 700	EBLR	3.20%	12.45%
	700 & above	EBLR	3.60%	12.85%
	below 700	EBLR	3.70%	12.95%

**UNION GREEN MILES: (Applicable from 01-01-2024)**

Type of vehicle	CIC score	Reference Rate (D)	Premium (E)	Effective ROI (D+E=F)
New 4-Wheeler	800 & Above	EBLR	-0.10%	9.15%
	From 750 - 799			
	From 731 -749	EBLR	0.20%	9.45%
	From 700-730	EBLR	0.30%	9.55%
	From 650-699	EBLR	0.80%	10.05%
New 2-Wheeler	below 650	EBLR	1.00%	10.25%
	700 & above	EBLR	2.90%	12.15%
	below 700	EBLR	3.00%	12.25%

The Union Green Miles scheme is an initiative launched by the Union Bank of India to promote the purchase and adoption of electric vehicles (EVs) in India. It offers a range of benefits to individuals and businesses considering making the switch to electric mobility. Quantum of loan has no ceiling for electric 4 wheelers and must be under Rs. 10 lakhs for electric 2 wheelers.

## 2. SBI (State Bank of India)

The State Bank of India (SBI) is the premier public sector bank in India, headquartered in Mumbai. It is the largest financial services organization in India, with over 22,000 branches and 567 million customers. SBI offers a wide range of banking products and services, including personal banking, corporate banking, and investment banking. It is a Fortune 500 company and one of the largest banks in the world by assets.

SBI plays a vital role in the Indian economy and is committed to supporting the country's economic growth. SBI established a comprehensive Green Financing Framework in 2019, outlining its eligibility criteria for financing green projects. SBI has set an ambitious target of achieving a 25% green loan portfolio by 2025. SBI's green loan portfolio has witnessed a remarkable rise from 5.7% in 2019 to 14.3% in 2023, demonstrating a strong commitment towards clean energy projects.

### • SBI Green Rupee Term Deposit (SGRTD)

A Green deposit is an interest-bearing deposit, received by the regulated entities for a fixed period, the proceeds of which are earmarked for being allocated towards green finance. It is an initiative of the State Bank of India to raise money to finance environment-friendly projects. The deposit scheme is open to resident individuals, non-individuals, and non-resident Indian (NRI) customers. The current framework permits green deposits to be denominated in rupees only.

### • Surya Shakti – Solar Finance

The objective of this scheme is to provide finance for the installation of Solar rooftop/ground-mounted grid-connected systems up to 1 MW capacity for captive use at an interest rate of 8.4 % per annum. The Quantum of the loan is a maximum of Rs.4 Crores. The repayment period is 10 years.

### • Finance For Biofuel Projects

SBI provides loans for corporates to part-finance setting up of Biofuel extraction plants (including Biomass suppliers/aggregators), including their storage and distribution infrastructure. The Bank helps meet capital expenditure requirements through this loan. The quantum of the loan is Rs.50 Crores Max. (to be handled by RDB)

For loans above Rs.50 Crores (to be handled by CCG) at locations where CCG Branches are not available, the proposals above Rs.50 Crores shall be handled by SME Intensive Branches in R&DB with approval by the Competent Authority. The total loan repayment period is 10-12 years.

### • Compressed Biogas (“CBG”) under SATAT Scheme

SBI provides loans for CBG plants under the sustainable alternative towards affordable transportation scheme. This scheme creates large-scale employment along with sustainable industrialization. This scheme aims to part-finance the setting up of Compressed Biogas (CBG) plants with a rate of interest of 8.4% per annum. The Quantum of the loan is Rs.50 Crores Max. (to be handled by R&DB) and above Rs.50 Crores (to be handled by CCG). The total loan repayment period is 10-12 years.

### • Green car loan

The Bank promotes cleaner mobility through the green car loan scheme by offering a longer repayment period of up to eight years and a concession of 20 basis points (bps) on the interest rate, compared to a regular car loan. SBI green car loan (For Electric Cars) has a rate of interest ranging from 8.75% to 9.45% which for normal cars ranges from 8.85% to 9.80%.

### • Financing solar photovoltaic pump sets

SBI helps fund the purchase of solar water pumping systems in alignment with the PM Kusum Yojana, to provide a sustainable livelihood for farmers and reduce the environmental footprint.

### • Grid-connected rooftop solar PV projects

Popularising renewable energy in commercial institutions and industrial buildings with smaller roofs, In December 2023, SBI signed a \$165 million line of credit (LoC) with the World Bank to support grid-connected rooftop solar projects in residential and institutional sectors.

### • E-Rickshaw scheme

SBI has sanctioned ₹120.6 million towards electric rickshaws, to promote the usage of cleaner fuel and ensure a boost in environment-friendly practices.

## 3. Punjab National Bank

Established in 1894, Punjab National Bank (PNB) is a leading public sector bank in India, boasting the third-largest business volume among its peers. With over 180 million customers, 12,248 branches, and 13,000+ ATMs spread across the nation, PNB plays a vital role in serving diverse financial needs. Known for its commitment to innovation and social responsibility, the bank offers a wide range of products and services for individuals, businesses, and agricultural sectors. Additionally, PNB actively participates in government schemes and initiatives, solidifying its position as a key player in India's financial landscape.

#### • PNB's Scheme for Financing Rooftop PV Solar Power

The Government of India has set an ambitious target of installation of Grid Connected Rooftop Solar Photovoltaic projects with capacity of 40 GW out of the total target of 175GW of renewable Energy Capacity over the next five years by 2022. PNB has availed a line of credit of \$ 500 Million from Asian Development Bank for financing Rooftop Photovoltaic Solar Power Projects. A customized scheme has been formulated by the bank. Margin Is minimum 30% with a suitable upfront contribution of the required margin.

#### • PNB Green Car (E-Vehicle) Loan

The objective of this scheme is to make the Loan available to prospective borrowers for the purchase of a new Electrical Car(E-Vehicle) on attractive terms. The Quantum of loans for individuals/Proprietorship concerns is 25 times of Gross Monthly Salary/ Pension/ Income with a ceiling of Rs 100 lakhs. For Business Concerns (Corporate or Non-Corporate), there is no ceiling on the loan amount (for one or more vehicles). The loan amount together with interest is to be repaid maximum in 120 equated monthly instalments comprising of principal and interest commencing from the succeeding month.

#### • PNB Green-Ride

The purpose of this scheme is to assist transport operators of e-rickshaws (new entrants) and to create employment opportunities for the micro borrowers particularly. The extent of the loan for a new e-rickshaw is a maximum of 85% of the invoice cost of the vehicle or 80% of the on-road price, whichever is less. The advance(s) with Interest will be repaid in a maximum period of 33 months in monthly instalments.

#### • PNB Saur Urja Yojana

The objective of this scheme is to finance farmers for the purchase of solar home lighting/solar water heating systems. The extent of the loan is a maximum limit of Rs.50,000. The repayment period is 5 years in yearly/half-yearly instalments.

#### • PNB Compressed Biogas (CBG) Under 'SATAT' Scheme

Purpose of loan is for financing towards setting up of Compressed Biogas (CBG) plants. Loan is given to entrepreneurs viz sole proprietorship, partnerships, limited liability partnership, companies, co-operative societies who have been awarded 'Letter of Intents' (LOIs) by Oil Marketing Companies (OMCs) for supply of Compressed Biogas under SATAT scheme. Quantum of loan for CBG is minimum Rs. 1 Cr and maximum given based on need.

### 4. Canara Bank

Canara Bank established in the year 1906 in Dakshina Kannada district of Karnataka, known as the 'Cradle of Indian Banking', is one of the largest Public Sector Banks in India having a presence for more than 117 years with a vast banking touch points ranging beyond 30,000.

Canara Bank, in its journey towards sustainability, is adapting to sustainable practices. Bank has identified ESG as an emerging area of opportunity and to explore the same, has come out with ESG policy – the Sustainability Framework. The bank has also come out with an ESG Statement which is a synopsis of the Bank's Commitments & Actions towards sustainability in alignment with the UN's Sustainable Development Goals (SDGs).

#### • Green Wheels

Canara Green Wheels is a scheme from Canara Bank that offers eco-friendly auto loans for electric vehicles and hybrid cars at lower rates of interest. There is no upper limit in loan quantum. This scheme provides up to 90% financing for new vehicles.

#### • Green Deposit Policy

The objective of the Green Deposit Policy is to promote environmentally friendly initiatives by encouraging depositors to invest in green projects and activities that contribute to sustainable development. The policy aims to mobilize deposits and use the proceeds for funding projects and activities that promote environmental conservation, renewable energy, energy efficiency and other green initiatives. Green Deposits can be accepted from Individuals, Firms, Companies, Institutions, and other entities, including Trusts, HUFs, Charitable organizations, and Government agencies.

#### • Housing Cum Solar Loan

This scheme helps customers avail of a loan for the installation of a Roof Top Solar Photovoltaic System with a low rate of interest and a longer repayment period. The loan's solar loan component includes 20% of the eligible quantum under the housing loan component, 80% of the cost of the solar system or Rs 10 lakh, whichever is less.

#### • Loan for Compressed Biogas (CBG) plants

The purpose of the scheme is setting up of Compressed Biogas (CBG) plants. The target group includes entrepreneurs who have been awarded Letters of Intents (LOIs) by Oil & Gas Marketing Companies (OMCs) for the supply of Compressed Biogas under

the SATAT Scheme. Obtention of LOI from OMCs is a pre-condition for processing the loan. Quantum of loan is up to Rs.100 Crores.

#### • Financing Solar Pump Set for Irrigation

Purpose of scheme is to provide loan for installation of solar water pumping system. The scheme helps in harnessing the solar energy for pumping water by water pumps.

### 5. Central Bank of India

Central Bank of India (CBI) is an Indian public sector bank based in Mumbai. It is one of the oldest and largest commercial banks in India, founded in 1911.

#### • Cent Go Green Vehicle Scheme

Purpose of the scheme is purchase of new electric two/ four-wheeler for personal use. Maximum loan amount for two wheelers is Rs.10.00 lakh and for new four wheelers is Rs.100 Lakh (Indian/Foreign made Vehicle).

#### • Cent Green Deposit

Cent Green Deposits, a fixed deposit scheme for a specific tenure, where the amount deposited by customer will be used for lending to renewable energy projects, green building projects and projects in smart agriculture, water or waste management projects etc. Tenure of the deposit will be 1111 days, 2222 days and for 3333 days. Minimum amount of deposit is Rs.50,000 and maximum amount of deposit is Rs.1,99,99,999. An additional interest rate of 0.20 % to 0.25% over and above the -fixed deposit card rates is applicable for Green Fixed Deposits.

#### • Cent Solar-PM KUSUM Scheme

Loan is given to set up Decentralized Ground/ Stilt mounted Grid connected Solar or other Renewable Energy based Power Plants (REPP) of capacity 500KW to 2MW. individual farmer/ group of farmers/ co-operatives/panchayat/farmer producer organization (FPO)/ Water user associations are eligible for loan.

Interest Rate	Upto Rs. 3,00,000/-	MCLR + 1.35%
	Above Rs. 3 lakh to Rs. 10 lakh	MCLR + 2.50%
	Above Rs. 10 lakh to Rs.100 lakh	MCLR + 3.00%
	Above Rs. 100 lakh	As per risk rating of borrower

### 6. Bank of Baroda

Bank of Baroda is an Indian Multinational public sector bank headquartered in Vadodara, Gujarat. It is the second largest public sector bank in India after State Bank of India, with 153 million customers, a total business of US\$218 billion, and a global presence of 100 overseas offices.

#### • Financing Solar Home Lighting Scheme

It is a loan to provide finance to farmers for solar energy home lighting system in rural and semi-urban places as a renewable source of energy. The maximum loan amount is Rs. 50,000 with lower interest rate and longer repayment period. Farmers having sufficient source of income for servicing the loan interest and instalment are eligible for accessing the loan. However, focus would be on our existing BKCC holders who do not have reliable source of electricity for domestic purpose.

#### • Financing Solar Projects

Purpose of loan is to purchase & install rooftop solar equipment/ plant only for captive purpose. Target group for loan is micro, small and medium entities (Both MSME-Regulatory & MSME-Expanded) engaged in economic activities of income generating nature. Financing under the scheme is to be done in Delhi NCR, Rajasthan, Gujarat, Maharashtra, Karnataka. Loan amount is a minimum of Rs 10.00 lakhs and maximum of Rs. 05.00 crores (including AMC & Insurance fees). Applicable rate of interest under floating rate of interest is BRLLR+SP+4%.

#### • Baroda Energy Efficiency Project (BEEP) Finance

This scheme provides loans to ESCO or host entity falling under micro & small category. The minimum & maximum loan per project is Rs. 10 lakhs & Rs. 15 crores respectively. Maximum loan tenor is 5 years including moratorium period.

## • Scheme for Financing Compressed Biogas (CBG)

Compressed Biogas Plant with minimum designed capacity of 2.0 Tons per day can be financed under this scheme.

India's public sector banks (PSBs) are stepping up their green finance initiatives, but room for improvement remains compared to foreign counterparts.

### Comparing Indian PSBs' Green Finance Schemes with Foreign Peers

From financing solar power installations and electric vehicles to supporting biogas/biofuel projects, these banks cater to a broad spectrum of green needs. This comprehensiveness ensures accessibility and caters to various segments of the Indian economy aiming to adopt sustainable practices. Furthermore, government support through schemes like PM Kusum Yojana and SATAT incentivizes green lending by providing subsidies and guarantees, creating a favourable environment for PSBs to expand their green portfolios. Additionally, the extensive branch networks of these banks ensure their green finance offerings reach far beyond major cities, potentially empowering rural communities to participate in the green transition.

Despite these strengths, there are aspects where Indian PSBs lag behind their foreign counterparts. Compared to foreign banks like HSBC and KfW, whose green loans constitute a significantly larger portion of their overall portfolios (e.g., HSBC's 30% vs. SBI's 14.3%), Indian PSBs currently have a smaller share of green loans. This limited exposure suggests a need for more ambitious targets and a stronger commitment to financing the green transformation. Furthermore, loan ceilings for individual projects imposed by most Indian PSBs can hinder large-scale green investments, particularly in areas like renewable energy infrastructure development.

Based off of observations from my interactions with different public sector bank employees, PSB employees across all levels, seem to have limited understanding of green finance offerings. This leads to inconsistent information and missed opportunities for customers seeking EV loans or other green initiatives. Despite existing green schemes, EV buyers often receive no additional benefits compared to regular car buyers. This suggests a lack of proper implementation or promotion of these schemes. Beyond bank employees, the general public also exhibits a lack of awareness regarding available green finance options, further hindering the reach and impact of these initiatives.

Another gap lies in the limited range of green deposit products. Only a few banks, like SBI and Central Bank, offer dedicated green deposit schemes to attract green investments. This restricts the mobilization of funds specifically earmarked for financing green projects. Additionally, while renewable energy receives considerable attention, areas like green buildings and sustainable agriculture lack dedicated schemes in most banks, representing a missed opportunity to support a wider range of environmentally conscious initiatives.

Let us take a look at some widely appreciated green finance schemes by some global PSBs:

#### □ KfW (Germany):

**Green Climate Fund:** This multilateral fund supports developing countries in tackling climate change. KfW acts as a key channel for German contributions, disbursing billions of dollars to support adaptation and mitigation projects. These range from renewable energy installations in Africa to climate-resilient infrastructure in Asia.

**Energising Development Partnership:** This partnership with the African Development Bank focuses on providing concessional loans and grants for renewable energy projects across the continent. This helps address Africa's energy needs while promoting clean energy transitions and reducing reliance on fossil fuels.

#### □ Caisse des Dépôts et Consignations (CDC, France):

**Transition énergétique (Energy Transition):** This €4 billion public investment fund finances renewable energy and energy efficiency projects within France. This includes supporting wind and solar farms, building renovations for improved insulation, and developing low-carbon transportation solutions.

**Forêt (Forest):** This €1 billion forestry-focused fund promotes sustainable forest management and biodiversity conservation. It finances projects that protect existing forests, promote sustainable logging practices, and combat deforestation, contributing to carbon sequestration and ecosystem health.

#### □ Banco do Brasil (BdB):

**ProRenov+:** This credit line specifically targets energy efficiency improvements in buildings and industries. Businesses can access financing for upgrades to lighting, air conditioning, and other building systems, leading to lower energy consumption and carbon emissions. BdB offers competitive interest rates and repayment terms based on the expected energy savings achieved through the project.

**Fundo Amazônia (Amazon Fund):** This unique public-private partnership aims to conserve the Amazon rainforest by supporting sustainable development projects that reduce deforestation and promote biodiversity protection. BdB serves as the financial agent for the fund, managing investments in areas like sustainable forest management, protected area creation, and indigenous communities' empowerment.

## □ China Construction Bank (CCB):

CCB-World Bank Green Bond: This landmark issuance in 2023 raised \$1 billion to support various environmental projects in China. The funds contribute to sustainable infrastructure development, clean energy investments, and pollution control initiatives. This green bond highlights CCB's commitment to mobilizing capital for environmental solutions and aligning with international sustainability goals.

Green Finance Committee: CCB plays a leading role in promoting green finance development through its leadership of the Green Finance Committee of China Society for Finance and Banking. This committee works to develop green finance standards, guide market participants, and advocate for sustainable investment practices. By sharing best practices and collaborating with other institutions, CCB contributes to building a robust green finance ecosystem in China.

Here is a side-by-side comparison of Indian PSBs with Foreign PSBs:

Feature	Indian PSBs	Foreign PSBs (Examples: HSBC, KfW)
Green Loan Portfolio Share	Lower (e.g., SBI - 14.3%)	Higher (e.g., HSBC - 30%)
Loan Amounts for Green Projects	Often have loan ceilings, potentially hindering large-scale investments	Offer larger loan amounts and cater to bigger projects
Green Deposit Products	Limited options	Wider range of deposit schemes to attract green investments
Focus on Green Sectors	Mainly renewable energy, limited focus on other areas like green buildings	Diversified focus on renewable energy, green buildings, sustainable agriculture, circular economy
Green Finance Expertise	Limited dedicated green finance teams	Established dedicated green finance units with experts
Green Loan Targets	Ambitious targets emerging (e.g., SBI - 25% by 2025)	Set higher green loan targets and actively pursue them
Participation in International Green Finance Initiatives	Limited participation	Actively participate in initiatives like green bonds and global climate finance funds
Green Bond Issuance	Limited issuance	More common and used to raise capital for specific green projects

## Conclusion:

In conclusion, this research paper drives into the crucial intersection of economic development and environmental sustainability in India, highlighting the pivotal role of green finance in shaping the country's future trajectory. As India embarks on its journey to become the world's third-largest economy by 2030, it confronts the imperative of balancing growth with ecological preservation. The paper underscores the urgency of addressing environmental challenges, particularly in light of projections indicating a significant rise in carbon emissions if current trends persist. Amidst these challenges, green finance emerges as a promising avenue to steer India towards a greener, more sustainable economy. The study meticulously examines the green finance initiatives undertaken by six prominent public sector banks in India, shedding light on their diverse schemes aimed at financing renewable energy projects, electric mobility, and other environmentally beneficial endeavours. Through detailed case studies, the paper elucidates the varied approaches adopted by banks such as Union Bank, SBI, Punjab National Bank, Canara Bank, and Central Bank of India and Bank of Baroda showcasing their commitment to promoting green initiatives across different sectors.

Furthermore, the research underscores the broader global context of green finance, drawing parallels with initiatives undertaken by international counterparts such as KfW in Germany, Caisse des Dépôts et Consignations in France, Banco do Brazil, and China Construction Bank. By juxtaposing Indian banks' efforts with global best practices, the paper offers valuable insights into potential areas for enhancement and improvement within the Indian green finance landscape.

Despite the commendable strides made by Indian public sector banks in advancing green finance, the study identifies several areas warranting attention. These include the need for more ambitious targets, enhanced awareness and understanding of green finance products among bank employees and the general public, and a broader range of green deposit products to mobilize funds for sustainable projects. Moreover, the research underscores the importance of addressing challenges such as greenwashing and limited financial literacy to ensure the effectiveness and credibility of green finance initiatives.

In essence, the findings of this research underscore the transformative potential of green finance in driving India's transition towards a more sustainable and resilient economy. By harnessing the power of financial innovation, strategic partnerships, and global best practices, Indian public sector banks can play a catalytic role in fostering a greener, more inclusive future for the nation. As India charts its course towards economic prosperity, embracing green finance is not just a choice but an imperative for securing a thriving, sustainable future for generations to come.



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