POLICY BRIEF

Greening the Financial System of Pakistan

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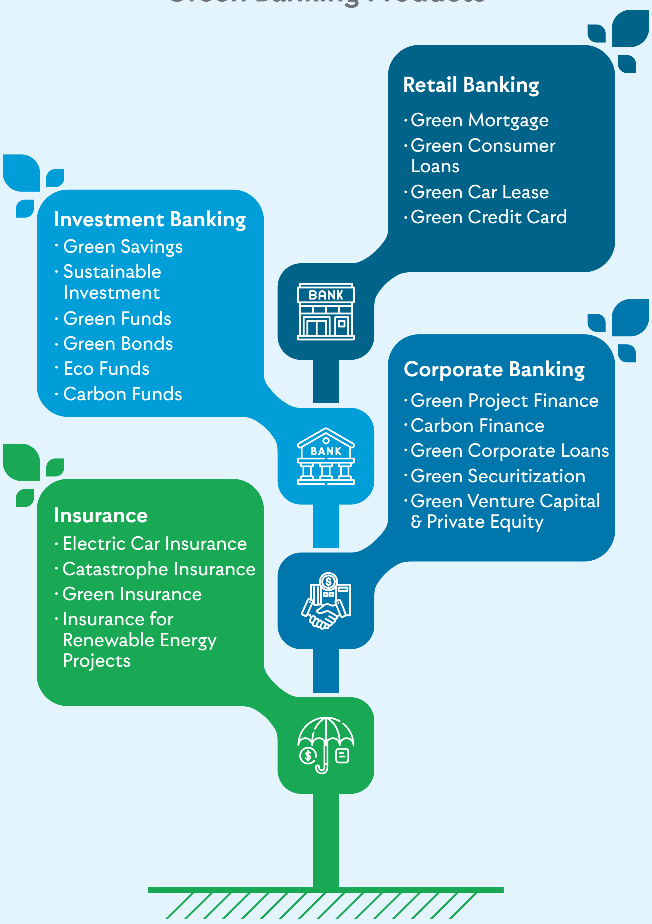
Unlocking Green Finance

The financial sector plays a crucial role in promoting environmentally sustainable and socially responsible investment. Banks have already started to focus their attention on the commercial opportunities associated with lending and financial services that facilitate climate change impact projects. Pakistan's success lies in the transformation from traditional industries to green industries, which is only possible through greening its financial system. Key priority areas in this regard include transformation to clean energy, energy conservation, clean water, and electric vehicles (EVs), among others.

The financial system of Pakistan is headed by the State Bank of Pakistan (SBP), and is composed of commercial banks and a mix of Non-Bank Financial Institutions including Development Financial Institutions (DFIs), investment banks, housing finance companies, leasing companies, modarabas and mutual funds, brokerage houses, and insurance companies.

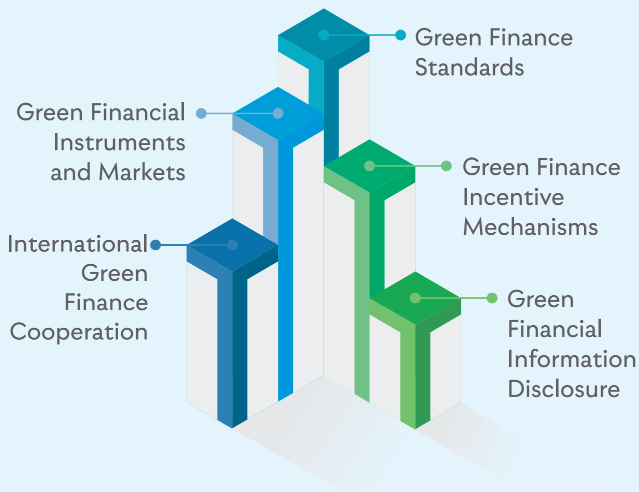
Green Banking Products



Green finance includes all lending and investment that contributes to climate mitigation, climate adaptation and resilience, and other environmental objectives – including biodiversity management.

Green finance involves the integration of environmental considerations into financial decision-making processes that ultimately support the transition to a low-carbon and sustainable economy. In recent years, many countries have started to take measures to promote green finance development across the banking sector. These mainly include introduction of green instruments in retail banking, investment banking, corporate banking, and insurance. The operation of the Green Financial System (GFS) depends on concrete financial instruments. The design of financial contracts is critical to enabling commercially sustainable green finance that supports economic sustainability. The policy makers and regulators must work in tandem to manage the micro and macro prudential risks arising out of climate change and simultaneously shift the playing field towards green finance. The issuance of Green Banking Guidelines by SBP[1] is an important step toward greening the financial system. Introduction of green financial standards, green finance incentive mechanisms, green financial instruments, international green finance cooperation, and green financial information disclosure and monitoring are the main pillars of a GFS.

Pillars of Green Financial System



Business Case for Climate Finance

Pakistan's Climate Targets

Pakistan's Nationally Determined Contributions 2021 (NDCs) set a cumulative and ambitious conditional target of an overall 50 percent reduction in its projected emissions by 2030, with 15 percent from the country's own resources, and 35 percent subject to provision of international finance amounting to US$101 billion just for energy transition.[2] To reach the target, Pakistan aims to shift to 60 percent renewable energy (RE), and 30 per-

1. State Bank of Pakistan. (2017). Green Banking Guidelines. INFRASTRUCTURE, HOUSING & SME FINANCE DEPARTMENT. Retrieved from https://www.sbp.org.pk/smefd/circulars/2017/C8-Annex.pdf

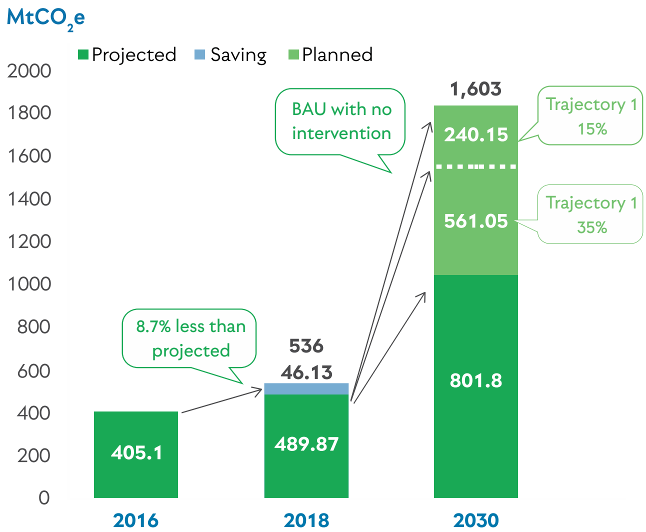
cent EVs by 2030 and completely ban imported coal, while expanding nature-based solutions. A GFS in the country can significantly support the achievement of these targets.

Global Outlook & Climate Finance in Pakistan

Climate finance involves financial resources invested in climate change mitigation and adaptation measures through financial instruments including loans, grants and guarantees.

More than 60 percent of Global Climate Finance is consumed by East Asia & Pacific, and Western Europe, whereas the South Asian region, including Pakistan, consumes only 4.7 percent of global climate finance.[4]

Voluntary and Conditional Reduction of 50% below its projected BAU emissions by 2030

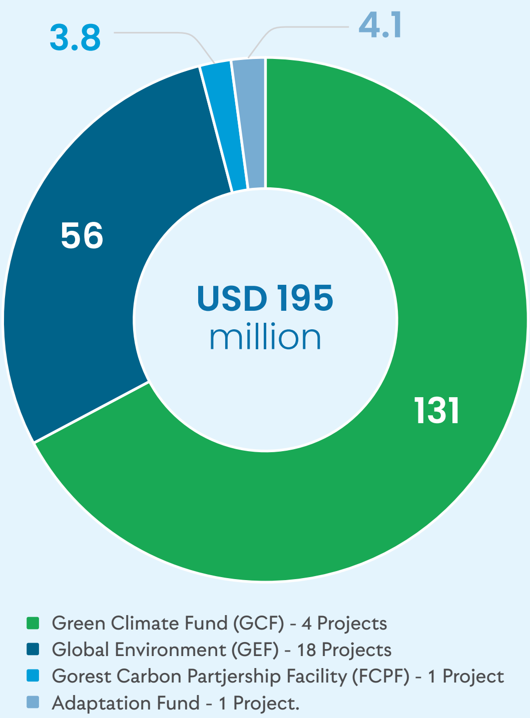


Area	Sector[3]	Projects
Mitigation	Energy	Debt or equity finance to RE, and energy efficiency
	Forestry and other land use	Debt or equity finance to agroforestry, and eco-tourism
	Sustainable Transport	Debt or equity finance to public transport Public-Private Partnerships (PPPs), including EVs
	Waste management	Debt or equity finance to waste management PPPs
	Industrial processes	Loans or equity investments in companies addressing climate change needs through their products and services
	Agriculture	Credit facilities for investments in climate-smart agriculture (especially large scale, less so for smallholder farmers)
Adaptation	Food security (agriculture, livestock, and fisheries)	Debt or equity finance to irrigation PPPs, credit facilities for investments in climate-smart agriculture
	Water supply and sanitation	Debt or equity finance to water supply and distribution PPPs
	Public health	Debt or equity finance to health-care PPPs
	Biodiversity, forestry, and watershed management	Debt or equity finance to forest management PPPs or related eco-tourism opportunities
	Coastal zone protection and marine resources	Debt or equity finance to coastal protection and marine resource management PPPs or related eco-tourism opportunities
	Critical infrastructure and spatial planning	Debt or equity finance to infrastructure PPPs (to the extent that tariffs are feasible for the use of such infrastructure)
	Disaster risk reduction	Debt or equity finance to providers of disaster risk insurance
	Energy	Debt or equity finance to RE and energy efficiency projects
	Transport and urban development	Debt or equity finance to public transport PPPs or sustainable real estate development
	Tourism	Debt or equity finance to eco-tourism operators

2. Government of Pakistan. (2021). Updated Nationally Determined Contributions. Retrieved from https://unfccc.int/sites/default/files/NDC/2022-06/Pakistan%20Updated%20NDC%202021.pdf

3. UNFCCC. (2023). Guidebook on How to Access Climate Finance for Member States of the Association of Southeast Asian Nations. Retrieved from https://www.undp.org/sites/g/files/zskgke326/files/2023-03/J0008_UNFCCC_NBF_ASEAN_Guidebook_FINAL_AW_digital.pdf

In order to help developing countries cope with the adverse effects of climate change, the global community has developed global climate financing initiatives such as the Green Climate Fund (GCF), Global Environment Fund (GEF), and Adaptation Fund (AF). The broader objective of these initiatives is to provide funds to developing countries to mitigate or adapt to climatic change. Pakistan has secured very limited access to international climate finance.

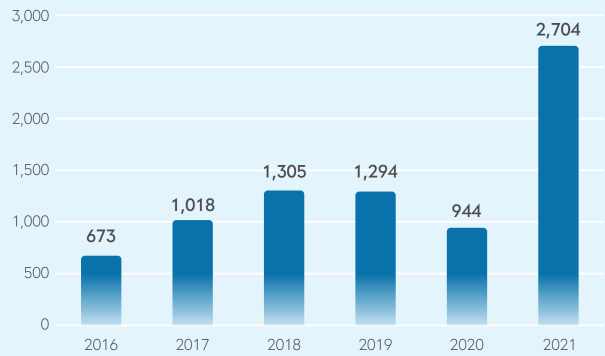


Source: Author's compilation

Climate Financing to Reduce Greenhouse Gas (GHG) Emissions

Climate finance instruments and mechanisms include green bonds (for new investments in RE), blue bonds (that may include sovereign debt restructuring for expanded maritime carbon sinks), brown bonds (for decommissioning of land-based carbon emitters), equity investment, construction-phase loans, grants, and guarantees (such as political risk and credit guarantees that can cover losses in the event of debt service default). Major climate finance providers include project sponsors, environmental, social, and governance (ESG) funds, commercial banks, bilateral donors, multilateral development banks or institutions, and guarantee agencies. Achieving GHG emissions' reduction targets will require Pakistan to develop an innovative strategy which targets external climate finance for, both, RE and other climate change in-

MDB's climate financing to Pakistan (US$ Million)



Source: Source: EBRD

vestments. The Government of Pakistan (GoP) can explore the following options to do so:

a. Issue nature-based debt swaps, e.g. accelerate the tree planation/ reforestation program;

b. Work with multilateral and bilateral DFIs to use carbon-trading provisions in the 2015 Paris Agreement to finance the decommissioning of heavily polluting coal-fired plants;

c. Stressing climate change priorities in sectoral strategies to identify emissions, and reducing opportunities such as mitigating crop burning by investment in better planting technologies;

d. Converting Pakistan's NDCs 2021 into a comprehensive document for climate investors;

e. Refining domestic guidelines for green bonds to minimise burdens on investors, while assuring that green bond sale proceeds contribute to climate mitigation or adaptation;

f. Refine domestic guidelines for green bonds to minimize burden on investors, while assuring that green bond sale proceeds contribute to climate mitigation or adaptation;

g. In order to attract private domestic or foreign investment for RE, continue to improve Pakistan's legal and institutional framework for PPPs;

h. Reach out to multilateral/ bilateral DFIs to seek concessional climate finance for appropriate climate projects.

4. Climate Policy Iniatitve. (2021). Global Landscape of Climate Finance. Retrieved from https://www.climatepolicyinitiative.org/wp-content/uploads/2021/10/Full-report-Global-Landscape-of-Climate-Finance-2021.pdf

Options for Climate Finance in Pakistan

Pakistan's financial needs remain high, given the country's vulnerability to climate change, and capital-intensive transition to decarbonize the economy. The table below provides some public and private sectors, domestic and international sources, and instruments for climate finance[5]:

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Category	Origin	Source	Funding	Instruments
Public	International	Multilateral climate funds	Green Climate Fund (GCF)	Grants; Concessional loans; Guarantees; Equity;
			Global Environment Facility (GEF)	Grants
			Climate Investment Fund (CIF)	Grants; Concessional loans.
			Least Developed Countries Fund/ Special Climate Change Fund	Grants
			Adaptation Fund (AF)	Grants
			Forest Carbon Partnership Facility/REDD+	Grants; Results-based payments.
		MDBs	ADB, AIIB, IFC	Grants; Concessional loans; Guarantees; Equity;
		Bilateral climate finance	Bilateral Development Agencies, Government Ministries	Grants; Concessional loans; Guarantees.
	Domestic	National budgets	Climate budget	Funding
		National climate funds	Funding from government budget, international donors	Grants, Concessional loans, Guarantees; Equity
		Carbon pricing	Carbon taxes or selling emission permits	Govt. Investment in climate projects
Private	International/ Domestic	Commercial banks	Banking sector alliance (NZBA, GISD), HBL, BoP, JS Bank	Concessional loans; Debt, Equity
		Private equity funds	Acumen Fund, JS Private Equity, Berkeley Energy	Equity, Mezzanine debt.
		Incubators, accelerators and VC funds	Lakson Investments VC, Invest2 Innovate, Clean Energy Trust	Convertible notes; Preferred equity; Ordinary equity

Tapping Green/Concessional Financing under Medium Term Debt Management Strategy

Ministry of Finance's Debt Management Office has issued the Medium Term Debt Management Strategy (MTDS) FY23- FY26[6] reflecting the optimum combination of borrowing from various sources. MTDS also provides strategic guidelines for green/concessional financing external financing from bilateral and multilateral develop-

5. UNFCCC. (2023). Guidebook on How to Access Climate Finance for Member States of the Association of Southeast Asian Nations. Retrieved from https://www.undp.org/sites/g/files/zskgke326/files/2023-03/J0008_UNFCCC_NBF_ASEAN_Guidebook_FINAL_AW_digital.pdf
6. Government of Pakistan. (2023). Medium Term Debt Management Strategy (FY23-FY26). Debt Management Office. Retrieved from https://www.finance.gov.pk/publications/MTDS_FY23_FY26.pdf

ment partners and to tap other avenues within International Capital Markets (ICM) like ESG bonds, green bonds, sustainability linked bonds, and gender bonds, among others, to benefit from favourable terms and conditions of these facilitates and instruments.

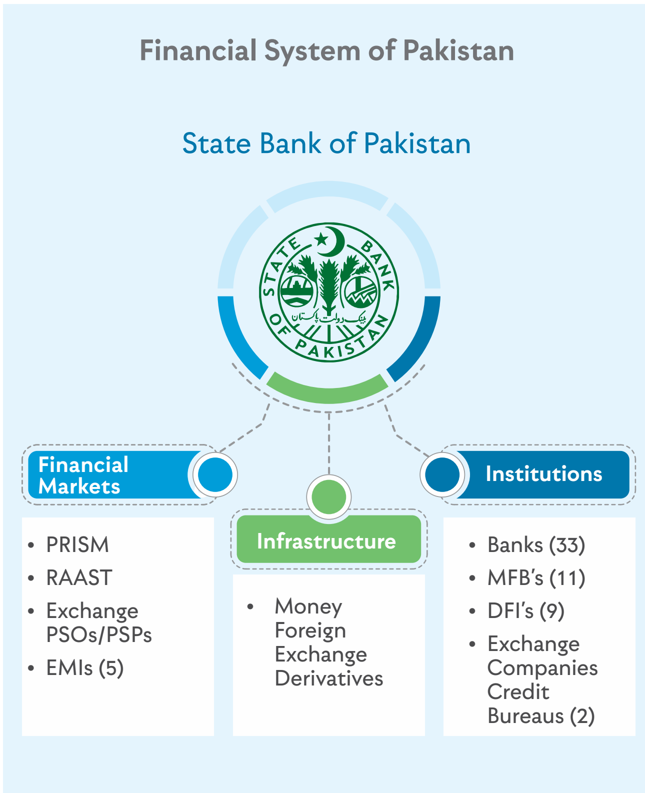
Keeping in view the high interest rate environment, the Government of Pakistan (GoP) is avoiding fixed rate instruments to minimize its borrowing costs. Therefore, the government intends to continue its partnership with international development partners to take advantage of concessional/semi-concessional climate funding. These loans provide maximum flexibility to the borrower in the choice of grace period, final maturity, and amortization structure.

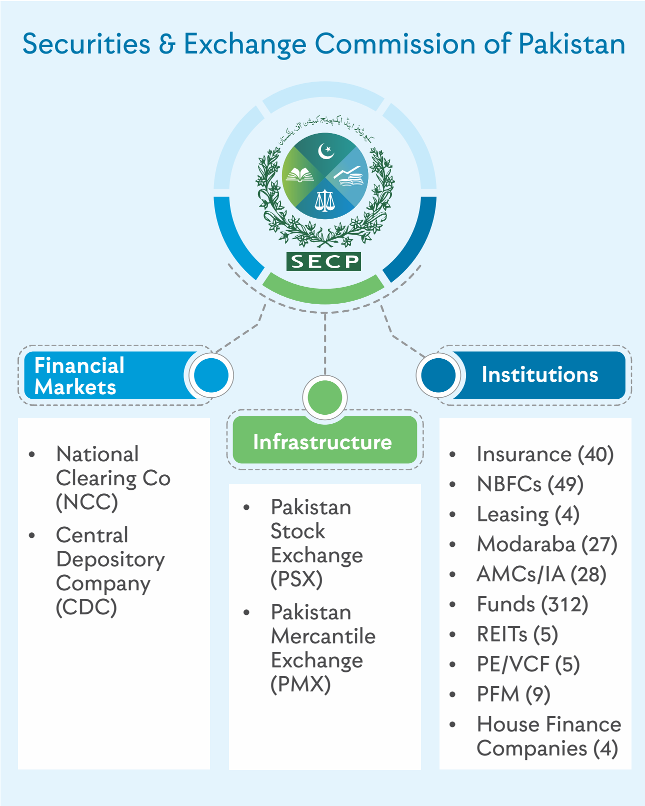
Debt-for-Nature Swap

The Government of Pakistan should also focus on debt-for-nature swaps. A debt-for-nature swap is an agreement between a debtor and creditor where the repayment obligations of an existing public debt are suspended, reduced, cancelled, or otherwise restructured, with the funds allocated instead to achieving domestic biodiversity outcomes. This lowers foreign debt obligations and provides a net improvement in a government's fiscal position. It should be considered as part of a continuum of policy reforms that will support the Government of Pakistan in addressing long-term financing needs, accessing new sources of green finance, identifying and resolving obstacles, and promoting new avenues for foreign investment. Ecuador struck the biggest deal of its kind i.e. refinancing $1.6 billion of its commercial debt at a discount in exchange for a consistent revenue stream for conservation around the Galápagos Islands. Similarly, Barbados has completed a debt conversion for nature backed by a $150 million guarantee from the Inter-American Development Bank (IDB) and The Nature Conservancy (TNC), allowing the country to reduce borrowing costs and use savings to finance a long-term marine conservation program.

Climate-smart Finance Systems

Pakistan's financial sector is governed by the SBP and Securities and Exchange Commission of Pakistan (SECP). The financial sector of Pakistan comprises of commercial banks, DFIs, microfinance banks (MFBs), exchange companies, payment service operators/payment system providers, and electronic money institutions (EMIs) which are SBP regulated entities, while non-bank financial institutions and insurance companies are SECP-regulated entities. In addition, the Central Directorate of National Savings (CDNS) mobilizes savings from general public to meet financing needs of the government. The figure below gives an overview of the financial system of Pakistan.





Transition to a Green Financial System

Green finance has not been able to reach the scale required due to lack of green financial systems as well as institutional barriers inside and outside of the financial system. There is misalignment between financial sector policies and incentives for climate and environmental objectives. Here are some steps that can be taken to facilitate the transition to a Green Financial System (GFS):

a. **Establish a clear policy framework:** This could include measures such as carbon pricing, subsidies for RE projects, and tax incentives for green investments.

b. **Increase transparency and disclosure:** Investors need clear and reliable information on the environmental impact of their investments in order to make informed decisions.

c. **Develop green financial products:** Financial institutions should develop new and innovative financial products, such as green bonds, green loans, and green investment funds, to channel capital towards sustainable investments.

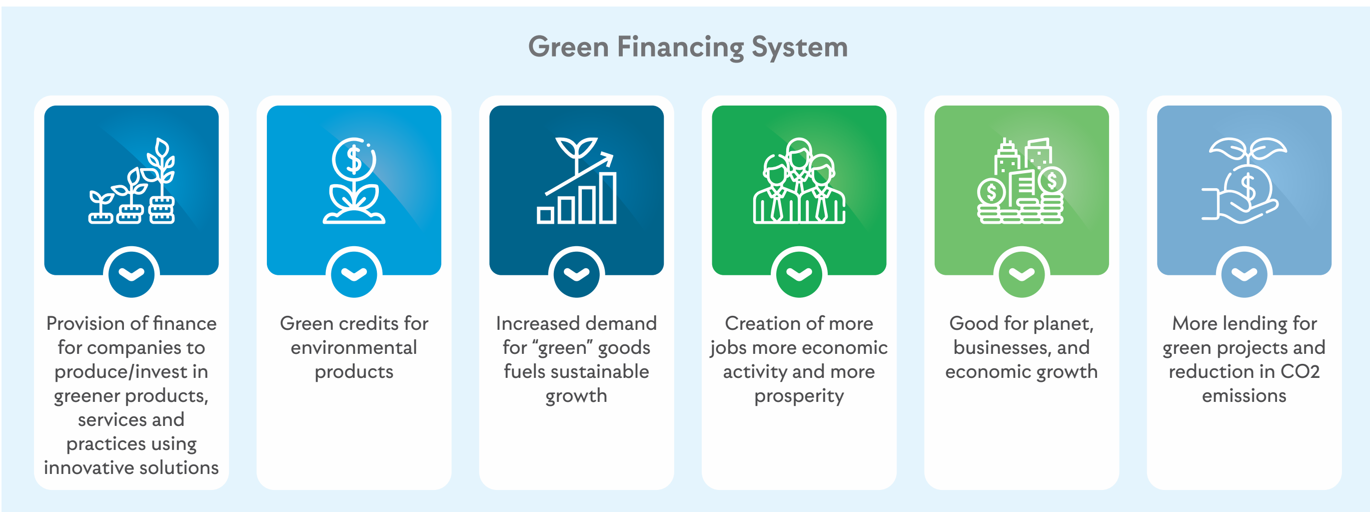
d. **Build capacity and expertise:** This can include training programs for financial professionals, as well as research and development of new financial tools and techniques.

e. **Foster collaboration:** Collaboration between governments, financial institutions, and other stakeholders is essential to facilitate the transition to a GFS. This could include partnerships to develop new financial products, joint research initiatives, and information-sharing networks.

Implementation of International Best Practices

The international experience of green finance development suggests several high-level principles for Pakistan including:

a. **Integration of Green finance in Economic Strategy:** In order to integrate green finance into economic strategy, governments and financial institutions can take a number of steps that include development of policies and regulatory frameworks that incentivize and encourage green investments, setting targets and standards for green finance and sustainability, en-



couraging the development of green financial products and markets, providing technical assistance and capacity building to financial institutions and investors, and building partnerships and collaborations among governments, financial institutions, and other stakeholders to mobilize finance for green investments.

b. **Financial Reforms for Green Finance:** Focus on polices and incentives to encourage green investments. Further, inclusion of sustainability principles in financial institutions, environmental disclosure and capacity-building of financial institutions and investors, building knowledge and expertise in environmental risk assessment, and green investments can support a transition to the green economy.

c. **Participation in International Cooperation:** International cooperation for greening the financial system is critical for promoting sustainable economic growth, reducing the negative environmental impacts of economic activities, and addressing global environmental challenges such as climate change. International cooperation can support the development and implementation of common standards and best practices for green finance, facilitate the sharing of knowledge and expertise, and mobilize resources towards sustainable investments.

Regulatory Framework

Overview of the Existing Framework for Green Financing

Pakistan has taken steps to develop guidelines and policies on climate or green financing to promote sustainable development, a summary can be found below.

These policies and guidelines demonstrate Pakistan's commitment to promoting sustainable development and addressing the challenges posed by climate change. However, there is still much room for improvement in terms of implementation and enforcement of these policies, as well as for developing a comprehensive framework for green financing.

Climate Change and Green Financing: Policies and Guidelines

National Climate Change Policy (2012): The policy was developed to address the impacts of climate change on Pakistan and promote low-carbon development. The policy aims to reduce GHG emissions, increase the use of RE, and promote sustainable agriculture and forestry.

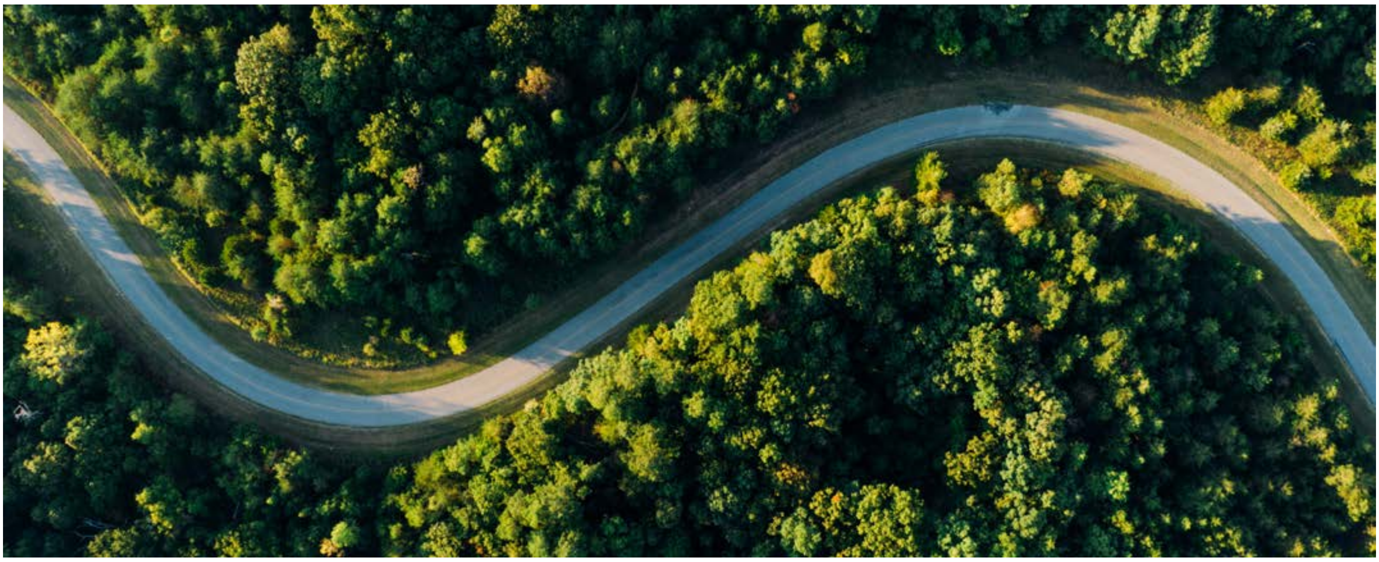
National Financial Inclusion Strategy (2015)[7]: The strategy recognizes the need for financial inclusion in promoting sustainable development. It aims to increase access to financial services for all segments of society, including those in rural areas and for women entrepreneurs.

State Bank of Pakistan Green Banking Guidelines (2017): The SBP issued these guidelines to promote sustainable banking practices. However, there is a need to issue immediate direction of issuance of green financing and use of green instruments for commercial banks of Pakistan.

State Bank of Pakistan Financing Scheme for Renewable Energy (2016): As part of the Green Banking initiative, State Bank issued this scheme with the objective to promote RE projects in the country by providing financing for RE projects at a concessional rate of 6%. However, the scheme is currently in-active and banks are not even issuing term-sheets for this facility.

SECP Guidelines for Green Bonds Issuance in Pakistan: The guidelines aim to promote sustainable and environmentally responsible investment practices by providing a framework for the issuance and management of green bonds.

National Electric Vehicle Policy (2019): The policy aims to promote the use of EV in Pakistan to reduce GHG emissions and promote energy security. It includes incentives for the production and use of EV, such as reduced taxes and import duties.



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Pakistan's Global Commitments towards SDGs

Pakistan has made significant progress in aligning its policies with the Sustainable Development Goals (SDGs) and relevant global/regional commitments. These include:

National Action Plan on Climate Change: Pakistan has developed a National Action Plan on Climate Change that outlines its commitments to address climate change and reduce carbon emissions. The plan includes targets for RE, energy efficiency, and forest conservation, among other measures.

Pakistan Vision 2025: Pakistan Vision 2025 is a long-term development plan that aims to promote sustainable economic growth and development in the country. The plan includes targets for poverty reduction, access to education and healthcare, and environmental sustainability, among other goals.

Paris Agreement on Climate Change: Pakistan has ratified the Paris Agreement on Climate Change and submitted its NDCs that state the country's climate mitigation and adaptation targets.

SDGs: Pakistan has made progress towards achieving the SDGs, including goals related to poverty reduction, gender equality, access to education, healthcare, and environmental sustainability.

South Asia Co-operative Environment Programme (SACEP): Pakistan is a member of SACEP, a regional inter-governmental organization that promotes cooperation and collaboration on environmental issues in South Asia.

There is still much work to be done to address challenges such as poverty, inequality, and environmental degradation, and to achieve sustainable and inclusive development in the country.

Fiscal Policies

Here are some fiscal policies that can be used to support the development of a GFS:

Tax incentives and Credits: Governments can provide tax incentives for green investments including tax credits or accelerated depreciation for green investments, which can help attract private sector investment and promote sustainable economic growth.

Carbon Pricing: Governments can introduce carbon pricing mechanisms such as a carbon tax or a cap-and-trade system, to incentivize the reduction of GHG emissions.

Subsidies: Governments can provide subsidies for environmentally-friendly projects which can help support the development of green projects and encourage the transition to a low-carbon economy.

Green public procurement: Governments can adopt green public procurement policies which require the purchase of environmentally-friendly products and services.

Strategic Initiatives for GFS

The following public sector initiatives are being proposed for greening the financial system of Pakistan:

7. State Bank of Pakistan. (2015). National Financial Inclusion Strategy Pakistan. Retrieved from https://www.sbp.org.pk/ACMFD/National-Financial-Inclusion-Strategy-Pakistan.pdf

Initiative	Stakeholders	Implementation
Special Taskforce on Green Finance	MOF, SBP, SECP	Long-term strategic direction to green the overall financial system and developments needed to advance the countries' green finance agenda
International Green Finance Networks	MOF, SBP, SECP	Participation in international networks to facilitate knowledge sharing and collaboration
Alignment with the Paris Agreement Commitments	MOF, SBP, MOCC	Encouraging financial institutions and financial system stakeholders to consider the Paris alignment of their portfolios, businesses and strategy
National Climate Finance Strategy	MOF, MOCC	To secure local, national or international financing that is drawn from public, private and alternative innovative sources to support mitigation and adaptation actions
Green Finance Roadmap for Financial Sector	MOF, MOCC, SBP	Strategic framework to enable or accelerate Pakistan's ability to deliver on its climate and SDGs, while enhancing the financial sector's competitiveness and economic resilience
Climate related Environmental Risk Assessment	MOF, SBP, SECP	Assessement of main climate-related and environmental risks to the financial sector, including transition and physical risks.
Environmental Disclosures	MOF, SBP, SECP	Disclosure of current and forward-looking data and analysis, relevant to their corporate strategy, operations, and performance on relevant climate and environmental issues
National Green Taxonomy	MOF, FBR, SECP	A classification system to identify environmentally sustainable economic activities that substantially contribute to climate or environmental goals
Greening of SBP Activities	SBP	Greening central banks' activities and operations including monetary policy and portfolio management
Greening Govt. DFI's	MOF, Govt. DFI's	Reallocate Govt. DFI's capital to bridge the financing gap for climate and environmental projects
Pakistan Green Development Bank	MOF, MOCC	A public, quasi-public or non-profit entity established specifically to facilitate private investment into domestic low-carbon, environmentally-resilient infrastructur
Green Corporate Bond	SECP	Bond proceeds to be applied to finance or verified new and/or existing eligible climate-related and environmental projects
Green Sovereign Bond	MOF	Marketable debt issued by a central government, where the proceeds will be used to finance specific green projects
Blended Finance	MOF, Govt. DFI's	Strategic use of public finance for the mobilization of private capital flows towards emerging and frontier markets

Financial Infrastructure

There is a need to develop the required financial infrastructure for developing a GFS which includes:

Development of a Carbon Market: A carbon market should be developed in the country to drive down the cost of emissions' reductions through market mechanisms.

Green Ratings and Green Stock Indices: They reveal environmental risks, reduce the investment in polluting projects by increasing their costs, reduce the cost of financing for green projects, and foster greater green projects in the country.

Environmental Cost Analysis: Create a public nonprofit environmental cost-analysis system and database.

Green Investor Network: Create a green investor network to foster the expertise and capabilities of institutional investors in investing in green industries.

Green Financing Instruments

The operation of the GFS depends on concrete financial instruments. The design of financial contracts is critical to enabling a commercially sustainable green finance that supports economic sustainability. These include:

Green bond: A fixed-income instrument used to sponsor projects related to climate and the environment. Green bonds are debts that public or private institutions can issue.

Debt-for-nature swap: A country with outstanding debts agrees to allocate a portion of the debt towards environmental conservation projects within its borders. The debt is usually purchased at a discounted rate by a non-profit organization or government agency. The funds obtained from the debt purchase are then used to finance projects aimed at preserving natural resources, protecting biodiversity, or supporting sustainable development initiatives in the debtor country.

Guarantee: Commitment in which the guarantor will ensure the debtor meets the goals in climate change mitigation and adaptation to debt providers.

Concessional loan: With a more extended repayment period and a lower interest rate, so that loan recipient countries can maximize their efforts in fighting climate change.

Grant and donation: These are provided to projects related to climate mitigation and adaptation.

Securities

Securities can play an important role in promoting a GFS that can be used to finance green projects and support the development of sustainable finance. Steps in this regard include:

Green bonds: Fixed income securities that are specifically issued to fund environmentally-friendly projects. Green bonds are typically certified by a third-party to ensure that the proceeds are used for green purposes, and can attract a wide range of investors, including institutional investors and retail investors. These bonds are used to fund projects such as RE infrastructure, energy-efficient buildings, and clean transportation. The government could offer credit guarantees or establish a green bond fund that provides a pool of assets that investors can draw upon in case of default.

Green equity: Shares of companies that are focused on environmentally-friendly activities or that have strong sustainability practices. Investing in green equities can help to support the development of environmentally-friendly companies and promote sustainable economic growth.

Green mutual funds: Investment funds that focus on environmentally-friendly companies or that invest in green projects. These funds can attract a wide range of investors and can be managed by banks, asset managers, or other financial institutions.

Credit enhancements for green securitization: Tap mainstream bond markets for green finance. Smaller loans and assets need to be aggregated and packaged appropri-

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ately.

Establish dual recourse for green municipal bonds. Governments can issue green dual resource bonds or revenue bonds with a government guarantee as a backstop. The primary function of such green dual recourse bond is to give investors experience in analysing the performance of green assets, without exposing them to higher risks. As the investors become familiar with the green assets' performance, the market can move to green asset-backed securities.

Green real estate investment trusts (REITs): investment trusts that focus on environmentally-friendly real estate projects, such as green buildings or sustainable infrastructure. Investing in green REITs can help to promote sustainable real estate development and support the transition to a low-carbon economy.

Tax credits for green corporate bonds. There is scope to support investment in green bonds by allowing tax-free interest income from green bond investments. This can be put in place by making green bondholders eligible for tax credits equal to the total amount of the interest, or a share of the interest.

Compulsory environmental information disclosure mechanism: The government can introduce regulations that require financial institutions to disclose their environmental risks and impacts, set targets for reducing carbon emissions, and report on their sustainability performance. For example, the European Union's Sustainable Finance Disclosure Regulation requires financial institutions to disclose information about their sustainability risks and opportunities.

Develop environmentally friendly benchmark equity and bond indices: These are both connected to policy goals and enjoy public sector incentives by collaborating with index providers and stock exchanges. Implementation would require improved data reporting and accounting.

Promote the establishment of a Green Investors' Network: A Green Investor Network may increase investee companies' preferences for green projects through pressure from institutional investors including venture capitalists, and institutional investors who share a common goal of investing in companies that are developing innovative solutions to environmental challenges such as climate change, resource depletion, and pollution.

Insurance

Here are some ways in which insurance institutions can support the development of a GFS:

Climate risk insurance: Insurance companies can offer climate risk insurance to protect individuals, businesses, and governments against the risks associated with climate change, such as flooding, drought, and other extreme weather events.

Expanding the scope of green insurance: This would form a set of comprehensive methods and insurance solutions (e.g., the performance insurance for solar panels and wind turbines, building insurance for energy and water efficiency and usage-based insurance).

Green insurance products: Insurance companies can develop green insurance products to promote sustainable development. For example, insurers can offer green building insurance, which provides coverage for environmentally-friendly buildings or insurance for RE projects.

Environmental pollution liability insurance system: Improving legal liability frameworks, involving local governments in the development of environmental liability insurance, and providing fiscal and taxation support.

ESG integration: Insurance companies can integrate ESG factors into their underwriting and investment decisions. This can help to identify and manage climate-related risks and support the development of sustainable financial practices.

Sustainable operations: Insurance companies can adopt sustainable operations practices to reduce their own environmental footprint and promote sustainable development. This can include reducing energy consumption, using RE sources, and adopting environmentally-friendly policies and practices.

Appraisal and inspection mechanism for environmental pollution damages and improve the environmental damage compensation system: The insurance industry could provide technical support and services for environmental risk appraisal and other insurances.

Sustainable investing: Insurance companies can invest in environmentally-friendly projects and companies, such as RE projects or sustainable infrastructure. By investing in sustainable projects and companies, insurance companies can support the development of a GFS and promote sustainable economic growth.

Other Regulatory Recommendations

Here are some other policies that needs to be implemented for transitioning to a GFS:

Green investment funds: They play a key role in channelling capital towards sustainable investments. The government could support the development of green investment funds by offering tax incentives or providing seed funding.

Public-private partnerships: They are an effective way to finance green infrastructure projects, such as RE installations. The government could take steps to facilitate PPPs by offering financial incentives or providing technical support.

Introduction of the priority lending sector: SBP should introduce priority lending sectors and climate investments should benefit from a dedicated target. Government should form policies which promote the use of RE and EVs for transition away from fossil fuels.

Sustainable investment guidelines: The government can provide guidelines for financial institutions to invest in sustainable assets. These include setting standards for environmentally-friendly investments and promoting investments that generate positive social and environmental impacts.

Increase the return on investment of green projects: This can be done by lowering financing costs and enhancing the availability of funds.

Strategic issuance: Issuance of green sovereign bonds and green municipal bonds can play a key role in financing sustainable projects.

Public awareness: Raising public awareness about green financial instruments is important to build demand for these products. The government could launch a public awareness campaign that highlights the benefits of investing in green projects and encourages the use of green financial instruments.

A coherent green finance system would allow Pakistan to attract private capital into the green industry, reduce fiscal pressure, and enhance economic growth.

Development of Policy for Carbon Trading

Pakistan does not have a comprehensive carbon trading policy in place. Global landscape of climate change policies and carbon markets is constantly evolving, and Pakistan should develop and implement its policies for carbon trading. To implement a carbon trading policy, the government should establish regulatory frameworks and institutions to oversee the process. It's important to note that implementing a successful carbon trading policy requires strong institutional capacity, accurate emissions data, stakeholder engagement, and international co-operation.

Carbon Credit - Success Stories in Pakistan

Sindh-based Delta Blue Carbon, Covering an area of 350,000 hectares a mangrove restoration project has been verified by Verra. This verification has enabled the project to list its carbon credits on the Singapore-based carbon exchange Climate Impact X (CIX).

- 3.1 Mt CO2 equivalent have been traded in international voluntary carbon markets, generating revenue for Sindh of approximately US$14.7 Million
- The project sold 50,000 tons of carbon-removal credits at $29.72 per ton through an auction organized by CIX.
- In November 2022, the auction, which was oversubscribed, sold 250,000 tons of credits at $27.8 per ton (30 per cent of bids were priced at $35).
- In the next 20 years, projected revenue for Sindh will be approx. $200 Million

Quaid-e- Azam Solar, Quaid-e-Azam Solar Power (Pvt.) Limited is a public-sector for profit company established by the Government of the Punjab. The company has been established for the setting up of renewable energy projects in general and Solar Energy Power Projects in particular. Quaid-e-Azam Solar Power (Pvt.) Limited is the first ever utility scale solar power plant in the country.

- Quaid-e-Azam Solar Power (Pvt.) Limited has earned 95,237 CERs for its first operational year (Feb 2018 – Feb 2019) after registration with CDM UNFCCC.
- Net GHG reductions over the lifecycle of the project (i.e., 25 years) are 2.3 Mt Co2

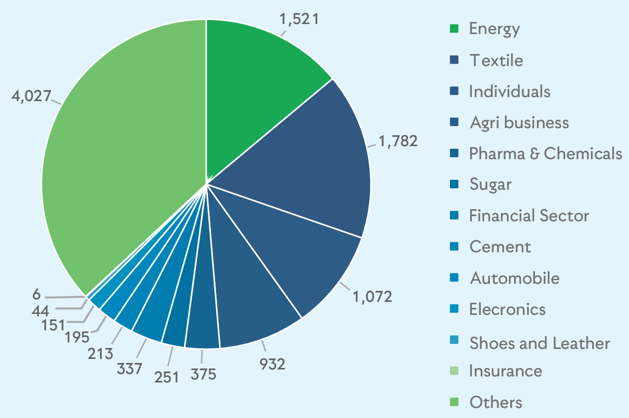
Green Banking System

The banking sector is a key stakeholder in Pakistan's financial system as well as Pakistan's SDGs achievement by providing green financing to sustainable industries at low-interest rates to mitigate environmental issues.

Role of State Bank of Pakistan

In order to green the financial system of Pakistan, SBP can take multiple actions such as developing a roadmap for the financial industry, devising green credit allocation policies, developing green taxonomy, and issuing guidelines for financial institutions on disclosure requirements (in line with the taskforce on climate-related financial disclosures recommendations) and integrating ESG into their business strategy. Here are some ways in which the

Sector-wise Financing by Banks (PKR Billion)



SBP can promote a GFS in Pakistan:

a. Use asset purchase programs to purchase green bonds and other environmentally-friendly assets;

b. Use interest rate policies to encourage investment in environmentally-friendly projects;

c. Establish targets for green re-financing facilities in the country;

d. Use stress testing to assess the exposure of financial institutions to climate-related risks;

e. Identify and eliminate the elements in its current monetary policy that are misaligned with the objectives for a green economy;

f. Use collateral policies to encourage the use of green collateral. For example, central banks can accept green bonds or other; environmentally-friendly assets as collateral for loans, which can increase the demand for these assets;

g. Explore the relationship between monetary policies and green finance, including developing a better understanding of the potential alignment of existing monetary policy tools to green finance, and the possible effects of environmental degradation and resource scarcities on price and financial stability regulations;

h. Work with other central banks and international organizations to promote the development of a GFS;

i. Develop and improve policies, systems and procedures for environmental and social (E&S) risk management;

j. Develop a client E&S risk rating standard to assess and categorize clients' E&S risks;

k. Create a mechanism that encourages green credit innovation;

l. Improve E&S performances of its own operations;

m. Strengthen capacity-building on green credit, develop and improve green credit;

n. Determine scope of E&S risk due diligence based on sectors and geographic features of clients or their projects;

o. Develop a compliance documents list and a compliance risk review list on E&S aspects, based on sector-specific features;

p. Determine sound credit approval authorization and procedures based on the nature and severity of E&S risks faced by clients;

q. Improve loan agreements to urge clients to improve E&S risk management;

r. Disclose green credit strategy and policies, and green

Role of Commercial Banks

Commercial Banks should take the following steps for Paris alignment of their objectives and to promote a GFS in the country:

a. Obtain senior-level commitment to align lending and/or investment portfolios with Paris goals and SDGs;

b. Publicly communicate ambition and target to achieve Paris alignment;

c. Join initiatives which have the objective of aligning with Paris goals;

d. Design plan for delivery of the project, as well as the mapping of interlinkages with other policy and regulations, e.g., schemes for pricing of emissions;

e. Reduce carbon footprint under their Net Zero Plan. This includes 'No New Coal Policy', 'No Deforestation Policy', reduce exposure to ESG-negative industries;

f. Training and capacity-building for awareness of ESG including environmental education;

g. Accreditation with GCF and other climate funds to accelerate climate financing in Pakistan for greening the financial system of Pakistan;

h. Become a signatory to Green Investment Principles (GIPs), along with China and 27 other global institutions. It includes seven principles at three levels – strategy, operations, and innovation for green investments in the Belt and Road Initiative (BRI);

i. An internationally aligned taxonomy will better support effective decision-making and response to investment opportunities that contribute to achieving national and international environmental objectives;

j. Identify commonly recognized green lending initiatives and launch of green loan management framework;

k. Finance Sustainable Agriculture (Cotton and Food Security);

l. Green Financing for 'Recharge Pakistan Program';

m. Strengthening of ESG systems and policies;

n. Financing for protecting the coastal and marine environment;

o. Aligning operations with SBP's green banking guidelines;

p. Establish green banking branches and green operations units.

Green Banking

Green banking has emerged as an important player in the fight against climate change. Pakistan is currently at the very initial stages of Green Banking adoption indicating a higher margin for improvement on this front. The SBP must incentivise commercial banking sector for green finance. Some measures in this regard include:

Polices to tap green finance: Pakistan must design policies to tap local and international green finance available for energy efficiency, climate change adaptation, waste management and sustainable energy investments.

Bonds by private companies: Bond issuance can be done by private companies or public entities, the private sector, in particular, must be engaged in order to reach out to the wider public for green bonds.

Green Sukuk and Euro bonds: Pakistan must design policies to attract bilateral climate finance by issuing green Sukuk and Euro bonds. This method is being applied by many countries, including the United Arab Emirates. In Pakistan, the Water and Power Development Authority (WAPDA) has proposed to issue long-term dollar-denominated green bonds of up to $500 million.

Climate-informed fiscal planning: In addition to green monetary policy, the government must adopt climate-informed fiscal planning. This means that it should integrate climate change adaptation and mitigation policies in its macro-fiscal policies. Climate informed fiscal planning can be improved by raising awareness among the masses and parliamentarians.

Grants: Grants play a key role in multilateral and bilateral financing in climate and environmental space. Grants are normally provided for non-revenue generating activities in recipient countries, such as capacity-building, knowledge management, and other programmes. Grants help in capitalising the financial mechanisms related to adaptation, forestry, and environmental preservation.

Across the globe, green banks have been established at national and sub-national levels to mobilize private investment in order to meet both domestic targets for RE deployment and energy efficiency, as well as international climate targets for carbon emission reductions. The Paris Agreement and the falling prices of clean en-

Examples of Green Banks Around the World

- California Lending for Energy and Environmental Needs (CLEEN) Center (California, U.S.A.)
- Clean Energy Finance Corporation (Australia)
- Connecticut Green Bank (Connecticut, U.S.A.)
- Hawaii Green Infrastructure Authority (Hawaii, U.S.A.)
- Green Finance Organisation Japan (Japan)
- Green Tech Malaysia (Malaysia)
- Masdar (United Arab Emirates)
- Montgomery Country Green Bank (Maryland, U.S.A.)
- New Jersey Energy Resilience Bank (New Jersey, U.S.A.)
- New York Green Bank (New York, U.S.A.)
- Rhode Island Infrastructure Bank (Rhode Island, U.S.A.)
- Technology Fund (Switzerland)
- UK Green Investment Bank (United Kingdom)

ergy technologies and associated cost parity with other forms of energy has increased the demand for greater and new sources of capital for clean energy projects. Here are some of the examples of green banks around the globe.[8]

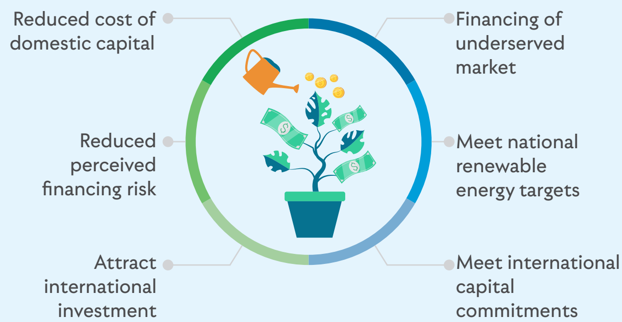
Measuring Carbon Footprint of Bank Loans (CBFL)

There are new metrics such as CBFL that are emerging to measure carbon footprint of bank lending portfolios. As part of the way forward, it would be good if banks in Pakistan adopt these measures and also have regulatory measures to improve on this. The IMF 'Carbon Footprint of Bank Loans'[9] could be a possible benchmark as would the work of Guan et al. (2017) that looked at bank specific portfolio for measuring carbon intensity. CBFL is publicly available through the IMF's Climate Change Indicators Dashboard (CID). The indicator aims to quantify the exposure of a country's banking sector to climate transition risks. The CID, was developed to provide a tool for policymakers to measure the carbon intensity of bank loan portfolios. According to the IMF, the financial system needs to help by channelling financing for the transition to a low-carbon economy and by bolstering climate financing considerably from an estimated seven percent of total funding in 2017 to 30 percent in 2030. In this regard, Guan et al. (2017) is the most relevant framework which measure carbon intensity of loan portfolios of banks and explores the associated credit risk. It measures the individual bank's portfolio carbon intensity weighted by shares of loans in all sectors and provides bank level exposure metric and it focuses on broad sectors with intensive data requirements, including the bank's sectoral exposures. The SBP could play an active role in rolling out necessary measures in consultation with government and commercial banks.

Landscape for Green Finance in Pakistan

Clean Energy	Wind
	Solar
	Tidal
	Geothermal
	Biomass
	Green Energy Corridor
	Hydrogen
	Manufacturing of clean energy plant
	Energy Storage
Clean Transportation	Purchase of EVs
	EV Charging Infrastructure
	Public Transportation
Energy Efficiency	Energy-efficient equipment
	Process Efficiency
	Bulk Energy Services
	Green Building
	Renovation of Buildings
Climate Adaptation	Disaster Monitoring, & Emergency Response System
	Flood Mitigation
	Drought Management

Value Proposition for Green Banks in Pakistan



Greening Capitalization of Banks

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8. OECD. (2015). Green investment banks. Bloomberg Philanthropies. Retrieved from https://www.oecd.org/greengrowth/green-investment-banks.htm
9. International Monetary Fund. (2023). Data for a Greener World: A Guide for Practitioners and Policymakers. Retrieved from https://www.imf.org/-/media/Files/Publications/Books/2023/English/DFGWGPPEA.ashx

sition to a low-carbon economy and by bolstering climate financing considerably from an estimated seven percent of total funding in 2017 to 30 percent in 2030. In this regard, Guan et al. (2017) is the most relevant framework which measure carbon intensity of loan portfolios of banks and explores the associated credit risk. It measures the individual bank's portfolio carbon intensity weighted by shares of loans in all sectors and provides bank level exposure metric and it focuses on broad sectors with intensive data requirements, including the bank's sectoral exposures. The SBP could play an active role in rolling out necessary measures in consultation with government and commercial banks.

Value Proposition for Green Banks in Pakistan

Green banks offer solutions to overcome local financing barriers for clean energy and can play a significant role in accelerating low carbon development projects. Due to their green investment mandate and public source of capital, green banks can deploy funds in a more flexible manner that, both, leverages private capital and lowers the borrowing cost to the ultimate customer. This enables a broader pool of clean energy projects to achieve economical financing, which makes the projects more likely to be developed and attracts more investors, directing international sources of capital to local projects. Green bank financing methods leverage private capital to fill financing gaps by reducing real and perceived risk and asymmetrical information. This allows private investors the chance to learn about a new market opportunity with the security of a government partnership. As private lenders gain experience and information about the processes, risks, and addressable market size in clean energy, they can become increasingly comfortable and confident lending into these markets.

Banking Sector Alliance for Green Initiatives

Since governments have limited funds for green initiatives, therefore there is a need to develop a banking sector alliance for undertaking green initiatives in the country. UNDP in this regard is in talks with the leading banks in Pakistan to form a banking sector alliance. Banking sector alliance can launch a Climate Resilience fund which should target executing several SDG-aligned projects with competitive commercial and social returns whilst increasing resilience to climate change and enhancing sustainable development in the country. The fund may envisage capital commitments from the proposed banking sector alliance, with reciprocal commitments from DFIs to achieve a minimum domestic capital commitment of $50 million. These commitments shall then be leveraged from international institutions and bilateral partners to arrive at a projected $500 million Climate Resilience Fund. Examples of similar alliances include GISD Alliance'[10] and 'Net Zero Banking Alliance (NZBA)'.[11]

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Setting up of Pakistan Green Development Bank

There is a need to set up a 'Pakistan Green Development Bank' dedicated to investing in and promoting clean energy and other environmentally sustainable projects. This bank shall provide funding and financing to individuals, businesses, and organizations for RE projects, energy efficiency improvements, and other initiatives that aim to reduce GHG emissions and mitigate the impacts of climate change. The primary goal of this bank should be to accelerate the transition to a clean energy economy by increasing investment in sustainable infrastructure and technologies. The proposed bank should:

1. Issue green bonds, green asset-backed securities, and other basic financial instruments, foster and nurture a green finance trading market, and determine the 'green benchmark interest rate' for the markets;

2. Serve as a leader in the credit industry, formulate guidelines related to green industry credits, become the leading bank in a syndicate for green projects, channel funds from other financial institutions; and

3. Benefit the nation through its financing capabilities and talented workforce, provide technical assistance for financing in the green industry, and cultivate a professional staff in the area of green loans.

10. Global Investors for Sustainable Development Alliance. (2023). Global Investors for Sustainable Development. Retrieved from GISD: https://www.gisdalliance.org/
11. Net-Zero Banking Alliance. (2023). Net-Zero Banking Alliance. Retrieved from https://www.unepfi.org/net-zero-banking/

Greening the Power Sector

Overview of the Power Sector of Pakistan

An import-driven fossil fuel-based energy is not sustainable for Pakistan. Green energy can help Pakistan in overcoming its perpetual energy crises, by a reduction in dependence on imports and hence reducing the cost of energy to the country. Charts below show a transition from existing fossil fuel-based generation to a renewable and hydel focused energy-mix.

Financing for Green Energy Projects

Although investment in RE and energy efficiency is growing both internationally and in Pakistan, the scale of investment does not yet match the scale of financing needed for Pakistan to reach its internal clean energy targets. Significant collaborative efforts are required from various stakeholders, including government, financial institutions, investors, industry, and research organizations in order to develop innovative financing solutions to achieve these targets.

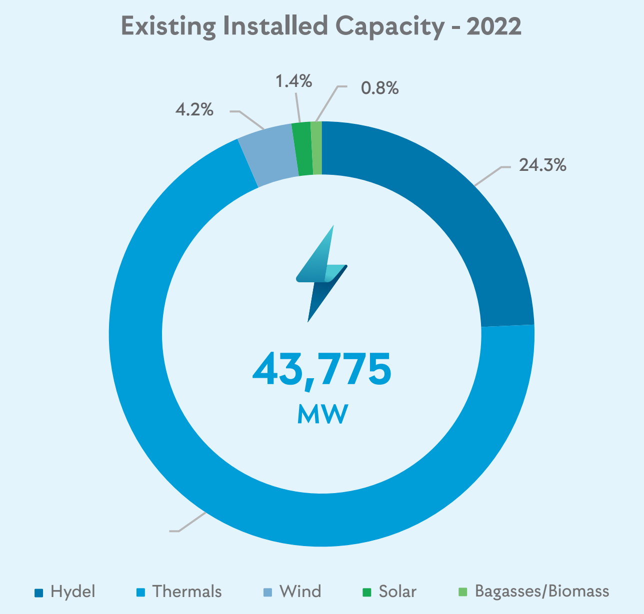
Strong policy settings and incentive structures must be adopted to enable RE investment to scale up to the required levels in Pakistan. Dedicated "green" financial institutions known as green banks are proving to be successful models internationally at leveraging public funds to bring in private capital. Green banks could propel Pakistan's solar and wind energy markets and support critical energy- efficiency and climate resilience projects. To achieve Pakistan's clean energy and climate goals, an innovative financial institution like a green bank can leverage limited public funds to reduce capital costs and risk – unlocking broader private investment in clean energy projects to scale up the market. In this way, green banks tailor their offerings to match domestic needs and can help mainstream green investment locally.

SBP Financing Scheme for Renewable Energy

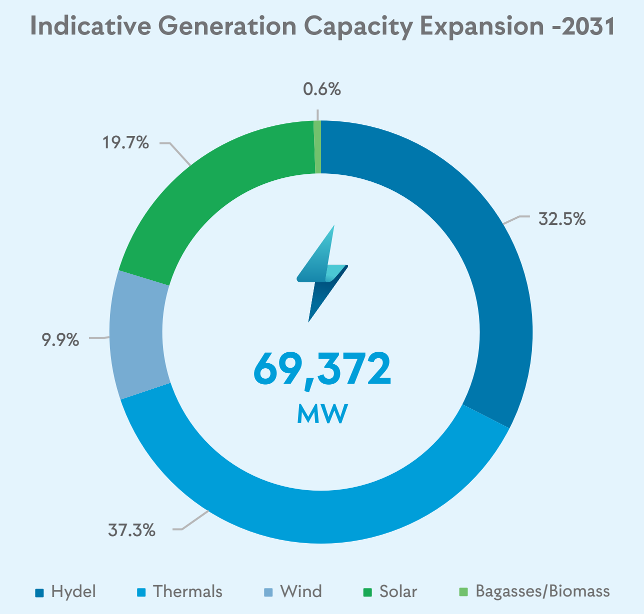
SBP's 'Financing Scheme for Renewable Energy 2016'[12] aims to promote RE projects in the country. SBP has also launched a similar Mudarabah based 'Islamic Financing Facility for Renewable Energy (IFRE)' for Islamic Banking Institutions (IBIs) and DFIs having authorized Islamic financing operations, with similar features. This policy is currently inactive and there is a need to re-activate this financing scheme and introduce similar financing schemes.

Competitive Trading Bilateral Contract Market (CTBCM)

National Electric Power Regulatory Authority (NEPRA) has recently approved a CTBCM[13] model that provides a roadmap for opening the wholesale electricity market of Pakistan, aiming to provide choice to the bulk power con-



Source: NEPRA



Source: Indicative Generation Capacity Expansion Plan 2022-2031

12. State Bank of Pakistan. (2023). Incentive Schemes for SMEs & Other Sectors. Retrieved from https://www.sbp.org.pk/Incen-others/Rene.asp
13. National Electric Power Regulatory Authority. (2023). Competitive Trading Bilateral Contracts Market (CTBCM). Retrieved from https://www.nepra.org.pk/ctbcm.php

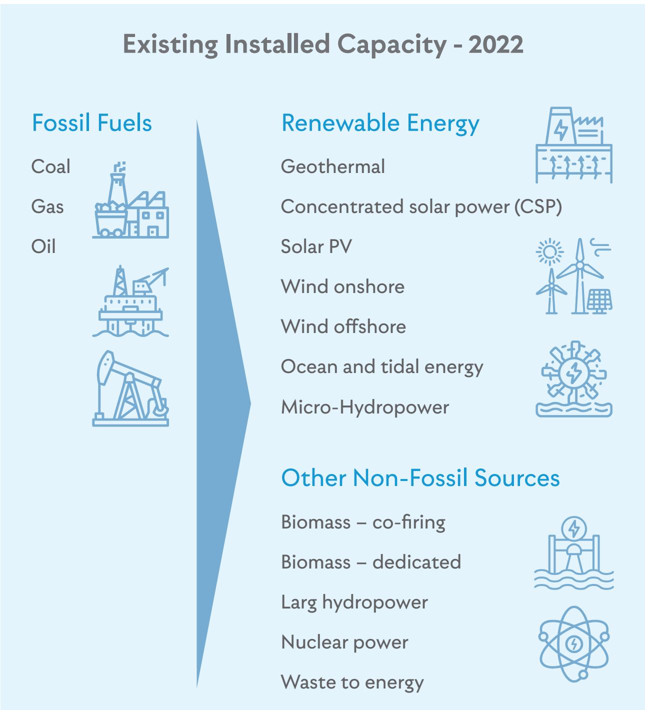
sumers to purchase electric power from the Distribution Companies (DISCOs) or a competitive supplier of their choice. Opening of a wholesale electricity market will result in injection of greener energy into the system because of a competitive market.

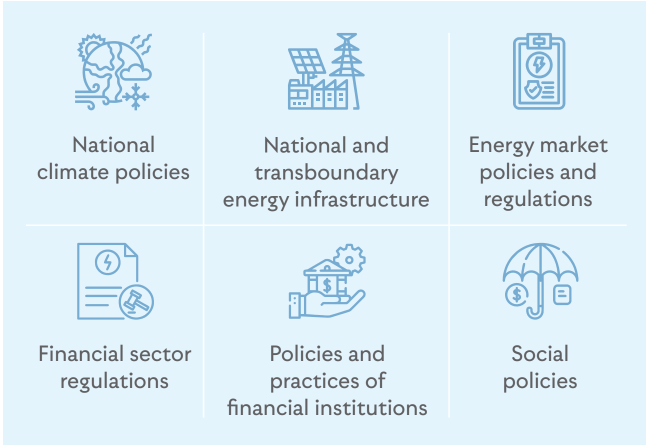
Climate Finance for RE Projects

Mitigation and adaptation finance, in their current forms, remain largely untapped. Renewables-based projects could be a prime candidate for these funding opportunities, especially from the newly emerging climate finance architecture. For instance, GCF has become a vital part of the global climate finance architecture – mobilising $10 billion during its first replenishment and investing in transformational climate projects worth over $40 billion (including co-financing) in more than 100 countries.[14] In 2019, the World Bank announced it would boost its adaptation financing to $50 billion by 2025[15] matching its mitigation funding for the same period. Pakistan should tap international climate finance for RE projects which can provide blended financing facilities resulting in increased viability of projects.

Transition to RE

Pakistan is heavily reliant on fossil fuels to meet its energy needs in electricity and transport sectors. There is a need to phase out from this dependence and subsequently drive energy transition towards a low-carbon and high-renewable economy. Banks can play an important role in this energy transition, by developing and implementing a new vision on Pakistan's energy future by reorienting financing to RE innovations, setting clear objectives, and implementing time-bound strategies to exit from fossil fuels.





The following policy measures can be taken for transition to the RE market:

a. Policy and incentives of indigenous/local manufacturing of solar modules;

b. Alignment of RE policies with NDC RE targets;

c. Accelerate competitive bidding auctions in line with the 'Indicative Generation Capacity Expansion Plan 2022';

d. Organize intensive capacity-building on financial management provisions, CTBCM process changes, subsidies, and contract management for RE projects;

e. Develop structured finance products for RE under the concessional financing framework;

f. Identify and work on project readiness facilities for GCF transactions to scale up climate finance potential;

g. Devise clear methodology for Use-of-System Charges (UoSC) under wheeling regulations and encourage bilateral contracting of power;

h. Develop long-term renewables-based climate adaptation and mitigation plans.

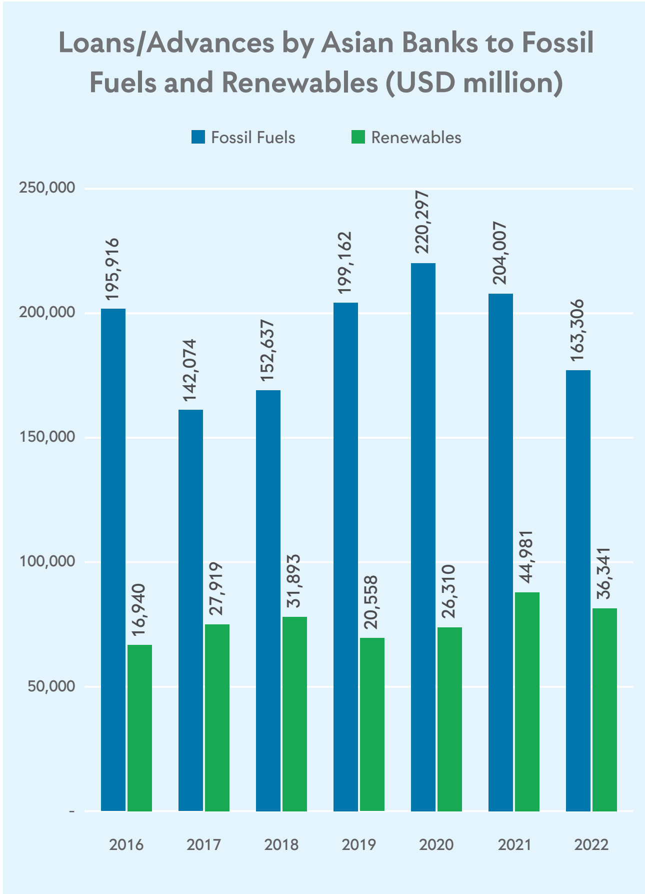
14. Green Climate Fund. (2023). GCF's second replenishment. Retrieved from https://www.greenclimate.fund/about/resource-mobilisation/gcf-2

15. The World Bank. (2019, January 15). World Bank Group Announces $50 billion over Five Years for Climate Adaptation and Resilience. Retrieved from https://www.worldbank.org/en/news/press-release/2019/01/15/world-bank-group-announces-50-billion-over-five-years-for-climate-adaptation-and-resilience

Financing the Transition

A study 'Financing the Just Transition – Powering Asia's Sustainable Energy Future' by the Stockholm Environment Institute (SEI)[16] found that most of the energy financing of the main banks from the selected Asian countries is predominantly destined for fossil fuels, with RE only accounting for 0 percent to 26 percent of their energy financing between 2016 to 2022. Trends found in Asia in the period between 2016 and 2022 are incompatible with the recommended pathway of the International Energy Agency (IEA), that leads to a 1.5° scenario. This suggests that annual reductions in fossil fuel production required between 2020 and 2030 are of 11 percent for coal, 4 percent for oil, and 3 percent for fossil. The graph below provide an overview of loans and underwritings by Asian banks for the energy sector.

Financing for RE is also very low and there is an immediate need to move finances to banks towards RE in order to support and finance the transition. Moreover, the financial sector in Pakistan does not yet have standardized and mandatory regulations that explicitly ban fossil fuel investments, nor do they adequately mandate carbon disclosure to drive emissions' reductions across their operations and value chains.



Conclusion

The world is fighting a losing battle against climate change and the absence of a comprehensive global deal on tackling climate change is glaring. Nevertheless, an increasing number of local, national, and regional initiatives are now underway to put a price on carbon, encourage energy efficiency, and catalyse green investments. However, it is clear that a green transformation cannot happen without large-scale investments in the green economy and without stopping the ongoing investments in the dirty economy, that continue to lock in future GHG emissions, for there is a need to green the financial system.

Pakistan is in a race against time in meeting its climate goals, and greening all finance has become imperative. This requires concerted efforts, a cohesive approach, and the collective vision of policymakers, regulators, and actors in the financial system. The way forward is to accelerate the dialogue at the highest level and initiate a narrative around sustainable finance and, in turn, support the sustainable growth of the country.

16. Fair Finance Asia. (2022). Financing The Just Transition: Powering Asia's Sustainable Energy Future. Retrieved from https://fairfinanceasia.org/wp-content/uploads/2022/11/Key-Findings-and-Observations-Financing-the-Just-Transition-Powering-Asias-Sustainability-Energy-Future.pdf

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