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Sustainable Development Policy Institute
30 Years 1992-2022

Green Finance Frontiers in **Pakistan**

Charting the Course towards a Sustainable Future

Acknowledgments

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Abbreviations & Acronyms

AEDB	Alternative Energy Development Board
AF	Adaptation Fund
AKDN	Agha Khan Development Network
BRI	Belt and Road Initiative
BMZ	German Federal Ministry for Economic Cooperation and Development (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung)
CEI	Pakistan-German Climate and Energy Initiative
COP	Conference of Parties
CSR	Corporate Social Responsibility
DFIs	Development Financing Institutions
EFSD	European Fund for Sustainable Development
EIB	European Investment Bank
EnvRM	Environmental Risk Management
EPA	Environmental Protection Agency
ERR	Environment Risk Rating
ESG	Environmental, Social, and Governance principles
ESMS	Environmental & Social Management System
ESRM	Environmental & Social Risk Management
EU	European Union
FATF	Financial Action Task Force
FCDO	Foreign, Commonwealth & Development Office
GBG	Green Banking Guidelines
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gases
GIZ	German Agency for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH)
GoP	Government of Pakistan
IFC	International Finance Corporation (private sector arm of WBG)
KPIs	Key Performance Indicators
LDCF	Least Developed Countries Fund
MEAs	Multilateral Environment Agreements
MoCC	Ministry of Climate Change
MRV	Measurement, Reporting and Verification
NBFI	Non-bank Financial Institution
NCET	Network for Clean Energy Transition
NDCs	Nationally Determined Contributions

NDMA	National Disaster Management Authority
NDRMF	National Disaster Risk Management Fund
NGO	Non-Governmental Organization
NPB	Nature Performance Bonds
NPL	Nonperforming Loan
PC	Planning Commission
PICG	Pakistan Institute of Corporate Governance
PMIC	Pakistan Microfinance Investment Company
PSDP	Public Sector Development Programme
PSX	Pakistan Stock Exchange
RE	Renewable Energy
SBP	State Bank of Pakistan
SCCF	Special Climate Change Fund
SDGs	Sustainable Development Goals
SDPI	Sustainable Development Policy Institute
SECP	Securities and Exchange Commission of Pakistan
SMEs	Small and Medium Enterprises
SSE	Sustainable Stock Exchanges
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority
WBG	World Bank Group
WWF	World Wildlife Fund for Nature Pakistan

Executive Summary

> **We are the first generation to be able to end poverty and the last generation that can take steps to avoid the worst impact of climate change. Future generations will judge us harshly if we fail to uphold our moral and historical responsibilities.**
>
> **Ban Ki-moon**
> Secretary General, United Nations

Climate change is probably the most significant threat to sustainable development and its large scale and unforeseen ravages threaten to strip away all the strides mankind has made thus far towards equitable and sustainable growth. It disproportionately burdens, particularly in financial terms, the poorest and most vulnerable communities. Climate Finance, presented as a promising solution, is aptly described as "local, national or transnational financing — drawn from public, private and alternative sources of financing — that seeks to support mitigation and adaptation actions that will address climate change." *(United Nations Framework Convention on Climate Change, 2022)*

Climate change is already leading to dire consequences such as rising sea levels, unpredictable extreme weather changes, worsening air and water quality, etc. which warrants urgent action. To achieve the goals of the Paris Agreement, green financing must drastically increase for climate mitigation as well as adaptation. The UN estimates that **US$3-5 trillion dollars** are needed annually to convert the SDGs into realizable ambitions. As intensive capital-raising efforts are needed for a low-carbon transition — to mitigate the effects of climate change, support solutions for climate adaptation, and reduce global greenhouse gas emissions — the need for climate finance is ever more urgent.

Pakistan is amongst the ten most climate-vulnerable countries in the world. The unprecedented floods this year are being considered the worst climate disaster till date, resulting in loss and damage amounting to more than US$30 billion *(MoPD&SI, Government of Pakistan, 2022)*. These floods were preceded by continuous heat waves in the country between March and June, characterized by some of the highest temperatures recorded globally. As the temporal window to limit the global rise in temperature to 1.5°C above pre-industrial levels becomes narrower, Pakistan's vulnerability to climate change continues to increase and bear its impacts in the form of flooding, drought, glacial melting, soil erosion and other natural disasters directly correlated with climate change.

A report defining the Long-term Global Climate Risk Index, published by

Germanwatch, an international NGO monitoring the climate change landscape, had rated **Pakistan** as the **8th most affected country** to the adverse impacts of climate change *(Germanwatch, 2021)*. The data was reckoned from 2000 to 2019 and mentioned that the country has faced 0.3% life losses per 100,000 inhabitants and US$3.8 billion economic losses due to the recurrent phenomena of floods and climate change induced catastrophes; this amounts to a huge number overall, considering Pakistan's population that has already crossed the 200 million mark.

Against such a challenging backdrop, **current green finance flows are insufficient to meet the growing needs of the country**. Pakistan faces an immense gap vis-a-vis the availability of resources, assessment techniques, adaptive and transformative technology transfer as well as overall capacity to address the conundrum in a contemporary context. Although some efforts have been made, drastic changes are needed in the current approach towards green financing. The field remains open to innovation and improvement as greening efforts are largely seen by industry, society and other stakeholders as a Corporate Social Responsibility (CSR) rather than a business case. This is especially true for SMEs which do not have adequate resources to set aside for greening activities such as transformative technologies as they need to reinvest in their business cycles.

Green and climate finance provides an effective tool to reducing greenhouse gas emissions and combatting other climate related challenges by raising large-scale investments. As per the UNFCCC, the principle of "common but differentiated responsibility and respective capabilities" set out in the Convention, **developed country Parties are mandated to provide financial resources to enable developing country Parties to undertake emissions reduction activities under the Convention and help them adapt to the adverse effects of climate change**. The Paris Agreement further reaffirms the obligations of developed countries, while encouraging voluntary contributions by other Parties; the onus is on developed country Parties to take the lead in mobilizing climate finance from various sources, instruments and channels, underlining the pivotal role of public funds.

To facilitate the provision of climate finance, **UNFCCC established a financial mechanism to provide financial resources to developing country Parties.** The Convention states that the operation of the financial mechanism can be entrusted to one or more existing international entities. The **Global Environment Facility (GEF)** has served as **an operating entity of the financial mechanism** since the Convention's entry into force in 1994. At COP 16, in 2010, Parties established the **Green Climate Fund (GCF)** and **in 2011** also designated it as **an operating entity of the financial mechanism.** The financial mechanism is accountable to the COP, which decides on its policies, program priorities and eligibility criteria for funding. In addition to providing guidance to GEF and GCF, Parties have established **two special funds—the Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF)** — both managed by the GEF — and the Adaptation Fund (AF) established under the Kyoto Protocol in 2001. At the Paris Climate Change Conference in 2015, the Parties agreed that the operating entities of the financial mechanism – GCF and GEF – as well as the SCCF and the LDCF shall serve the Paris Agreement.

More recently, the COP 27 in 2022 saw the creation of a 'loss and damage' fund to help vulnerable countries like Pakistan overcome the impacts of climate induced disasters; more than US$300 million have already been pledged to the fund by European countries *(UNDP, 2022)*. Similarly, the Global Shield against Climate Risks launched by the G7 and V20, with initial commitments of over US$200 million, is another step in the same direction *(UNFCCC, 2022)*. Several other initiatives focused on providing finance for green mitigation projects have also been announced.

While the above lays out a global context, this report focuses on the **current gaps** in Pakistan, the contemporary **issues surrounding existing efforts** as well as charting out a **roadmap to mainstream green finance**. There are lessons for multiple stakeholders – the policy makers, regulators, industry experts, academia, subject experts and multilateral development agencies. A summary of the challenges along with potential solutions to overcome them are highlighted in Annexure 1. An overarching theme that emerges is the need to consolidate knowledge, collateral and thought leadership on a common platform to avoid reinventing the wheel and working in silos as time and resources are sparse in the face of the magnitude of challenges faced by Pakistan. In terms of action, some of the low hanging fruit that can be reached in the near term is presented below:

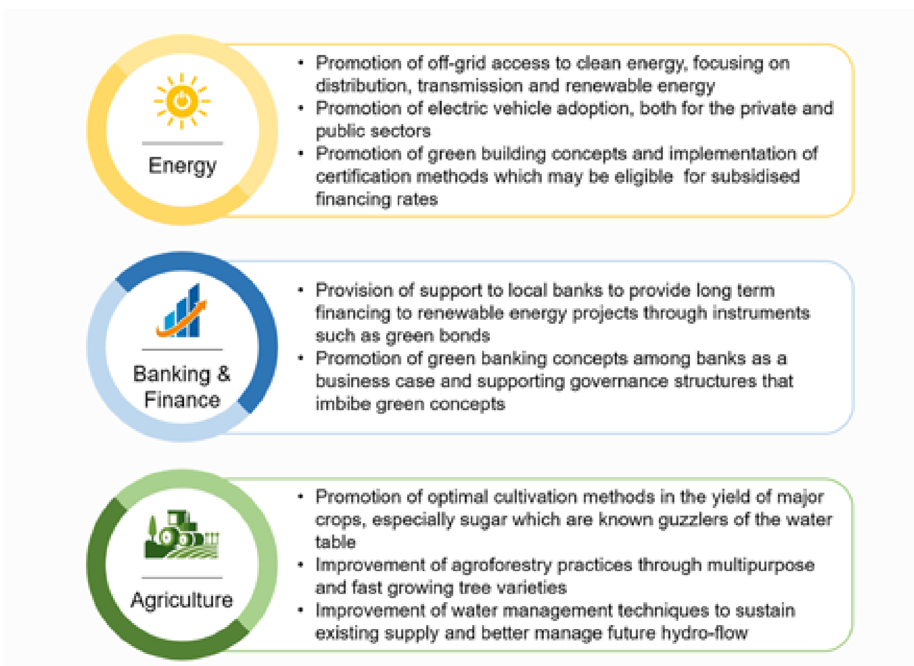

FIGURE 1 | Key Areas of Near-term Intervention in Pakistan

The IFC (the private sector arm of the World Bank Group) has estimated the **market opportunity in Pakistan at US$197.1 billion**, with the green building financing potential presenting the largest opportunity, followed by electric vehicles, renewables, agriculture, water resources and solid waste management. The potential interventions are estimated to result in up to **20% reduction in GHG emission by 2030.**

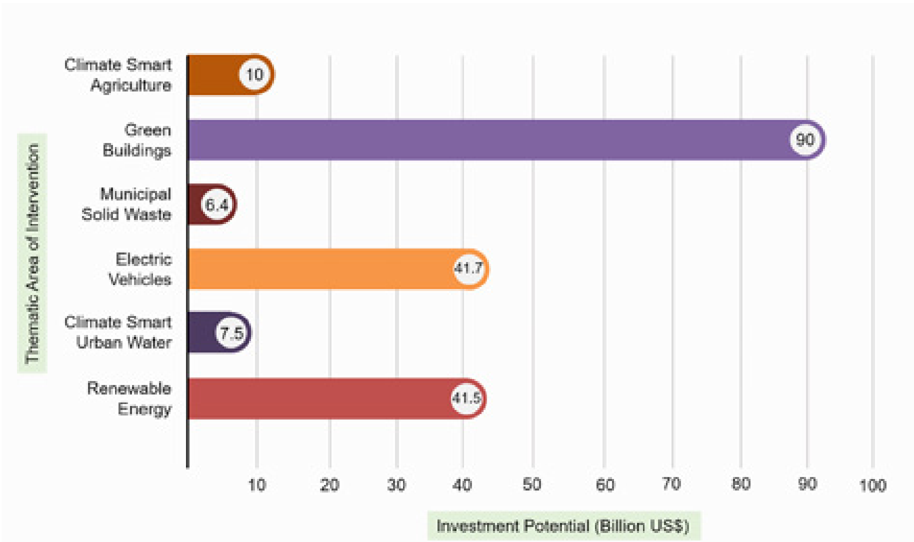

FIGURE 2 | Climate Investment Potential in Pakistan [1]

Climate change in Pakistan has the potential to unleash widespread impact, far beyond its borders, as the country is situated on a strategic geosphere that includes more than 7,250 known glaciers and the mighty Karakoram mountain range with 108 peaks above 7,000 meters including the second highest peak in the world, the K-2. The sooner Pakistan and the world realize this, the better-equipped they will be to make effective interventions.

1. The data has been extracted from an ongoing research under the IFC

Chapter 1

Introduction

Background

As the Earth continues to warm up, the global population is quickly running out of time to limit the rise in temperature to the 1.5°C (above pre-industrial levels) target set at COP 26 in Glasgow by Parties to the UNFCCC. Adhering to this target is perhaps the most crucial step in fighting climate change and biodiversity loss, both of which are threatening life on this planet. Taking immediate action against these threats is explicitly vital for a country like Pakistan that is classified as the 8th most vulnerable country to climate change *(Germanwatch, 2021)*.

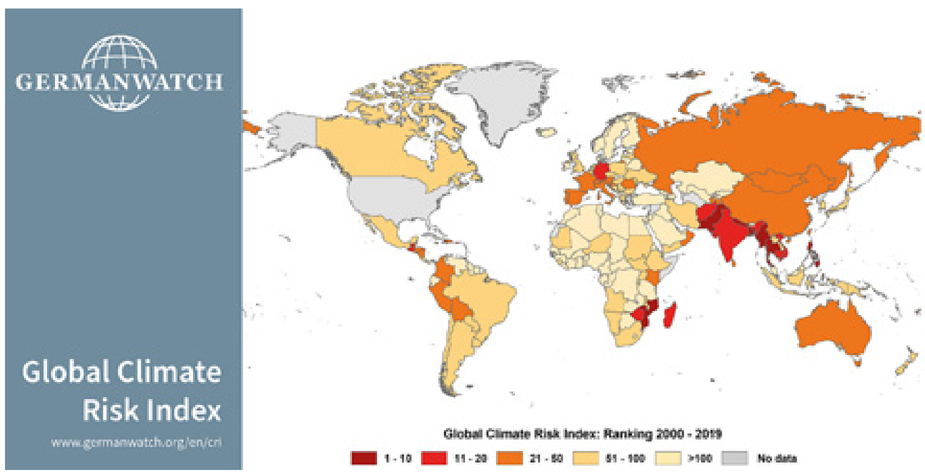

FIGURE 3 | World Map of Global Climate Risk Index (2000 - 2019) (Germanwatch, 2021)

A shift towards green and renewable energy technologies as well as energy efficiency presents one of the most promising solutions to the climate crisis, as the energy sector accounts for over 70% of global greenhouse gas (GHG) emissions. As the impacts of climate change persistently wreak havoc and cause more damage to the economy and enterprises, an increasing number of countries is following suit and defining stringent targets and development pathways that cater to this. However, the success of these actions depends strongly on the availability of financial resources, which stands as a prime obstacle for developing nations, including Pakistan.

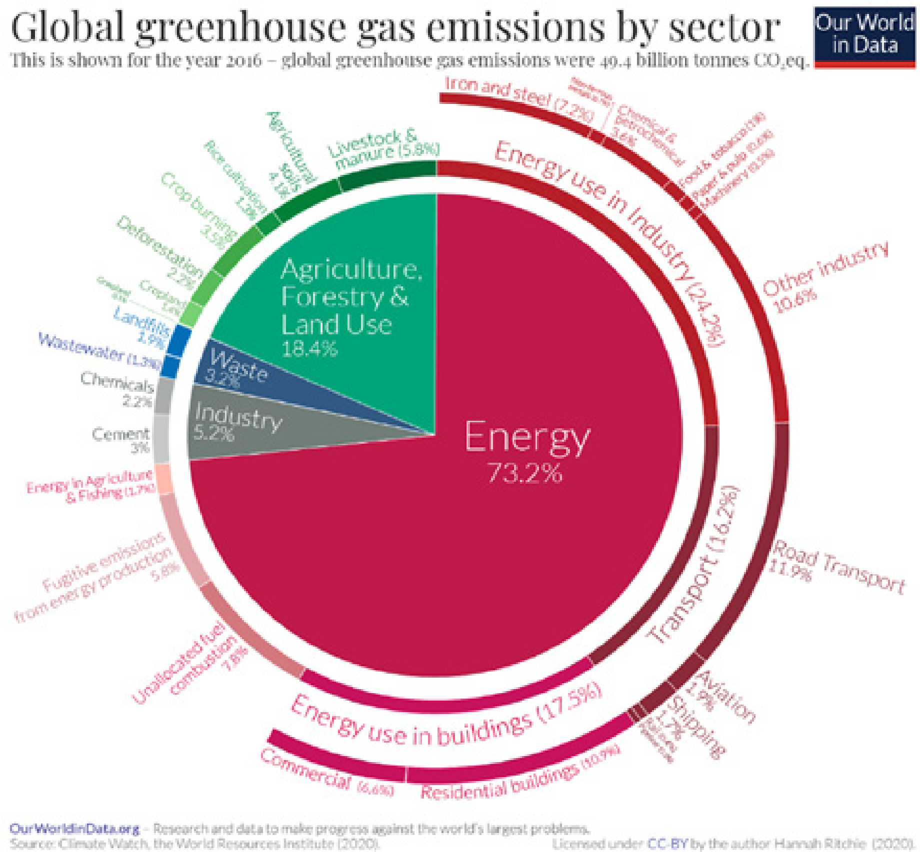

FIGURE 4 | Global GHG Emissions by Sector (Ritchie, et al., 2020)

In recent years, energy transition in Pakistan has received high political attention with a willingness to decrease the country's vulnerability to climate change. As part of its Nationally Determined Contributions (NDCs) under the Paris Agreement, the country has committed itself to a **50% reduction in its projected emissions**, along with **increasing the share of renewable energy** (including hydropower) and **electric vehicles to 60% and 30% by 2030**, respectively, *(Ministry of Climate Change, Government of Pakistan, 2021)*. However, the main hurdle here is, again, the availability of financial resources, as the **cost of energy transition** alone is estimated to be **US$101 billion by 2030.** In the backdrop of sparse resources available to combat climate challenges, green finance can play the role of a pivotal tool in raising pre-requisite capital investments. This money should ideally flow from the Global North, which is mostly to blame for the climate crisis, to the Global South, which is bearing the brunt of it.

Although the term '**Green Finance**' is yet to be given a unanimously agreed-upon definition, it typically refers to **any financial instrument which is used to promote sustainable development** projects and initiatives with the goal of promoting a green economic transformation towards low-carbon, sustainable and inclusive pathways. In this context, it may include the provision of capital to fight climate change and to develop environmental products as well as relevant strategies and policies.

Between 2019 and 2020, around US$632 billion were invested on a global scale as 'Climate Finance' *(Climate Policy Initiative, 2021)*. However, this value is still insufficient to curb the crisis; gauging from the situation, **investments of about US$1 trillion are required annually to protect the environment and achieve the climate targets set for 2030**. At the same time, institutional investors, such as pension funds and insurance companies manage about US$100 trillion annually. Thus, merely 1% of these funds would be sufficient to close the current climate financing gap.

It is evident, from the analogy above, that the financial resources needed to combat the energy and climate crises already exist but there is an imbalance in their availability and access. In Pakistan, the current financial flows are insufficient to meet the country's growing adaptation and mitigation requirements. There is a tremendous need to scale investments towards renewables and energy efficiency, as well as environmental rehabilitation and protection. To tap national and international green funds, multiple challenges at the policy and financial level have to be tackled. Risks and opportunities need to be better understood and addressed to leverage the full potential of financing a green economic transition in the country. This demands unparalleled effort and a sound understanding of the instruments of green finance, along with strong political will to resolve the underlying issues.

The concept of **green finance is still in its nascent stages in Pakistan**, there is an urgent need to develop it and bring it at par with mainstream financing mechanisms. This has become especially important in the context of rising inflation and a global shift in oil and gas regimes, brought about first by the Covid-19 crisis and now the ongoing Russia-Ukraine war; it is pertinent to make a switch to green and renewable technologies as soon as possible. Investments in such projects will simultaneously support economic development, mitigate further environmental degradation, and help the population adapt and build resilience.

BOX 1 | Capacity Building Workshop and Training on the Implementation of Green Financing Mechanisms in Pakistan

In order to analyze the role of the finance industry in achieving green growth and to help build and reinforce stakeholders' capacities in accessing green finance, a capacity building workshop and training program was held by the Network for Clean Energy Transition (NCET): Research and Advocacy (initiated and currently coordinated by SDPI Islamabad), in collaboration with the Pakistan-German Climate and Energy Initiative (CEI), (currently coordinated by GIZ). The ultimate goal was to facilitate the development of a comprehensive strategy for green financing, within the framework of transformative projects and programs on the just energy transition in Pakistan.

The workshop, conducted in hybrid mode on 21st – 22nd June 2022, gathered stakeholders from all over Pakistan as well as international organizations, such as the European Commission and the UN Environment; the KfW Development Bank, as part of the CEI, also took a prominent role within the Workshop. The participating stakeholders represented a broad range of sectors and industries, all of which could potentially be linked to the development and implementation of green financing mechanisms in Pakistan.

Through a series of presentations, panel discussions and training activities by field experts, the capacity building event provided insight into the green financing opportunities that already exist in Pakistan, along with some that the country can potentially seek in the national and international market. The challenges and gaps that are slowing down progress in Pakistan were also highlighted, while potential solutions were discussed in detail. Information gathered from the workshop has been incorporated, where appropriate, in this report.

Scope and Objectives

A number of organizations in Pakistan, including the State Bank of Pakistan (SBP) and the Securities and Exchange Commission of Pakistan (SECP), have taken the initiative to facilitate the process for green finance in the country. In 2016, the State Bank introduced a Financing Scheme for Renewable Energy, followed by its highly acclaimed Green Banking Guidelines (GBG) in 2017; nevertheless, there is significant room for further intervention.

Pakistan can make use of many national and international resources and tools to acquire green finance but there is a general lack of knowledge and awareness on their availability. Such gaps need to be filled immediately if Pakistan hopes to stay up to speed and take advantage of the green financing facility gaining popularity worldwide. Hence, this report seeks to achieve the following objectives, particularly in the scope of a just energy transition and improvement of the environment:

- To **enhance knowledge and understanding** on the prospects of green finance in Pakistan, by analyzing the major challenges and limitations associated with the implementation of green financing mechanisms, and identifying potential strategies to address them.
- To **identify national and international financing facilities, instruments, and policies** that can facilitate and increase green investments in Pakistan in the near and medium terms.
- To **analyze and define the way forward** for Pakistan, in terms of green finance, along with the role of different financing and development institutions.

Chapter 2

Overview of Current Policy Landscape for Green Finance in Pakistan

As yet, **Pakistan does not have a nationally defined policy on green finance**; at a national level, the allocation of finance for green projects falls under the domain of the Planning Commission (PC), through the Public Sector Development Program (PSDP). However, in recent years, several other public sector organizations have begun to take a keen interest and thus, have introduced a number of guidelines, regulations, and initiatives that are playing a key role in setting the stage for the implementation of green finance in Pakistan.

A timeline depicting the major events related to green financing in Pakistan is presented below:

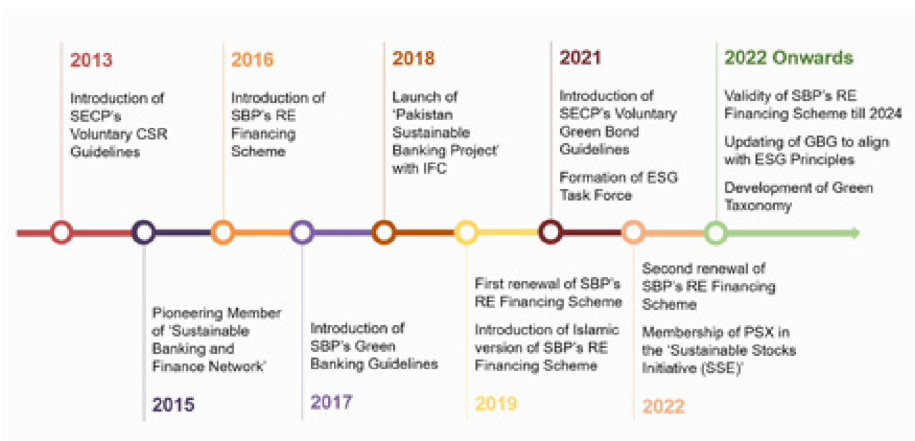

FIGURE 5 | Timeline of major events relevant to Green Finance in Pakistan

The role of State Bank of Pakistan

As one of the key financial institutions in the country, SBP has been working proactively in the past few years to promote green finance and sustainable initiatives domestically. As an initial step, **in 2015, SBP became a pioneering member of the 'Sustainable Banking and Finance Network'**, coordinated by the IFC of the World Bank Group, which was established with the aim of sharing knowledge on financial initiatives taken across the world in relation to sustainable development.

Adhering to its role as the central bank of Pakistan, SBP has also played an active role in **assisting commercial banks** in building green portfolios by introducing a **financing scheme for renewable energy in 2016**, as well as **its Islamic version in 2019**. This scheme, originally valid till 2019, has been renewed twice now (first till 2022 and recently till 2024) owing to the overwhelming response it received and its evident contribution to greening the energy sector of Pakistan. The scheme provides a concessional financing mechanism at a maximum end user interest rate of 6%, which is even less than half of the original interest rate of 13.75% *(State Bank of Pakistan, 2016)*. **It caters to the installation of renewable power generation projects** in various categories, up to 50 MW; till March 2022, the scheme had successfully supported more than 1,500 projects with a cumulative capacity of 1,400 MW, nearly 85% of which have been large scale corporate ventures.

In addition to this, **in 2017**, **SBP introduced its Green Banking Guidelines (GBG),** with support from the German Federal Ministry for Economic Cooperation and Development (BMZ), through the expertise of GIZ. These guidelines define the integration of ESG (Environmental, Social, and Governance) risks into the lending activities of commercial banks; they comprise four key elements *(State Bank of Pakistan, 2017)*:

i. **Organizational structure**, which encourages banks **to put in place a proper organizational structure for green banking**, including the establishment of a Green Banking Office and appointing a Chief Green Banking Manager that acts as the focal point for green activities within the bank.

ii. **Environmental Risk Management (EnvRM)**, which encourages banks **to integrate environmental risks into their credit risk management** in order to mitigate the environmental exposures of their financing portfolios. This has encouraged many commercial banks to establish environmental risk management procedures and develop 'due diligence checklists' and 'risk ratings' related to environmental concerns.

iii. **Green businesses facilitation**, which **directs commercial banks to facilitate green businesses** and align the focus of their investments with the Sustainable Development Goals (SDGs).

iv. **Own-impact reduction**, which **expects commercial banks to reduce their impact on the environment** through a conscious management of their energy and other resources. Examples of relevant measures include initiatives such as paper-less banking operations and services, the conversion of branches and ATMs to renewable energy, and the establishment of annual impact reduction targets.

Some green initiatives taken by Pakistani commercial banks under green banking are highlighted in Annexure 2.

As a next step, SBP has initiated a project, called the **Pakistan Sustainable**

Banking Project, in collaboration with the IFC wing of the World Bank Group *(International Finance Corporation (IFC), 2018)*. The goal is to strengthen and update the existing GBG and to enhance the financial portfolio of commercial banks related to green banking. The project also includes awareness and capacity building activities for the banking industry.

The role of Securities and Exchange Commission of Pakistan

To promote the implementation of green finance further, **in 2021, SECP introduced a set of voluntary guidelines for the issuance of green bonds**; these guidelines also include **provisions for Sukuk, which refer to Islamic or Shariah-compliant bonds** *(Securities & Exchange Commission of Pakistan, 2021)*. The overarching goal of these guidelines is to initiate and facilitate sustainable projects capable of tackling climate change by providing environmentally conscious investors with an alternate financing instrument.

Earlier, **in 2013**, **SECP also laid out voluntary guidelines for Corporate Social Responsibility (CSR)**, in order **to promote responsible business conduct that supports community growth and eliminates adverse practices** *(Securities & Exchange Commission of Pakistan, 2013)*. Over the years, these guidelines have encouraged companies to engage in initiatives, which fall under the umbrella of green projects, such as switching to renewable energy in their operations. In this way, **policies surrounding CSR initiatives have indirectly served as instruments for green finance.**

The role of Pakistan Stock Exchange

More recently, the **Pakistan Stock Exchange (PSX) has joined in the efforts directed towards sustainable development**, by encouraging enlisted companies to report their performance on SDGs. Although PSX cannot play a direct role in providing green finance, it aims to support the process by extending the narrative of ESG in the capital market and companies listed in the stock exchange. For this PSX, along with Pakistan Institute of Corporate Governance (PICG), has established an ESG taskforce directed to define standard regulations, reporting practices and procedures to be adopted by companies listed on the stock exchange *(Pakistan Stock Exchange, 2021)*.

In **June 2022**, **PSX** also **joined the Sustainable Stock Exchanges (SSE)** Initiative, which is an international partnership and peer-to-peer learning platform organized by the United Nations to explore how stock exchanges across the globe can enhance corporate transparency and performance on Environmental, Social and Corporate Governance issues and encourage sustainable investment *(Pakistan Stock Exchange, 2022)*.

Upcoming Initiatives and Policies

SBP plans to update its GBG to include social risks in the risk management policies and to align the guidelines with international best practices on ESG. It also plans to develop a green taxonomy to enable a better identification of economic activities that play a key role in climate change mitigation and adaptation. Moreover, **SBP has recently applied to become a member of the 'Network for Greening the Financial System'**, which is a group of central banks and supervisors that, on a voluntary basis, exchange experiences, contribute to the development of environment and climate risk management in the financial sector, and mobilize mainstream finance to support a sustainable economic transition.

BOX 2 | The European Union's Approach to Green Finance

The European Union has, perhaps, one of the most elaborate strategies put in place for the implementation of green and sustainable finance; this strategy is expected to play a critical role in projects striving for sustainable economic growth and are expected to cover a number of themes, including climate, energy, agriculture, sustainable transport, industrial decarbonisation, financial inclusion, resource efficiency, and research and development activities.

Fueled by the ambition to turn Europe into the first climate neutral continent, the European Union launched the European Green Deal in December 2019. The deal aims to achieve this objective with the help of a funding mechanism worth €1 trillion that will be mobilized in instalments till 2030, to support the delivery of policy reforms proposed to facilitate EU's economic growth and climate neutrality objectives. Over 50% of this fund is set to be extracted directly from the EU budget and the EU Emissions Trading System, while the remainder will be sourced through national co-financing and the public and private sectors.

Other key interventions under the EU's sustainable finance strategy, relevant to green and sustainable finance, include:

- Development of an EU taxonomy for sustainable activities
- Definition of European green bond standards
- Launch of an international platform for sustainable finance
- Guidelines on Corporate disclosure of climate-related information
- Definition of EU labels for benchmarks and their ESG disclosures
- Establishment of the European Fund for Sustainable Development (EFSD)

- Guidelines for sustainability-related disclosure in the financial services sector
- Launch of the 'Fit for 55' package as a set of legislative measures aimed to reduce emissions by 55% till 2030
- Introduction of a 'Carbon Border Adjustment Mechanism' to regulate carbon prices and taxes on products from outside the EU

Apart from the learning opportunity, provided in the form of international best-practices, the most important aspect of the EU's strategy for Pakistan is the EFSD, which is also responsible for providing external action guarantees for countries outside the EU. In reference to this, the Delegation of the European Union to Pakistan has already earmarked €53 million for Pakistan in the form of guarantees and loans, to be provided mainly through European Development Financing Institutions (DFIs) and the European Investment Bank (EIB).

Chapter 3

Prospects of Green Finance in Pakistan

3.1. Pakistan's Current Green Financing Gap

In Pakistan, the focus on climate change has historically been overshadowed by more urgent economic and security crises. Nevertheless, in recent years, interest amongst the national and provincial governments, and private sector organizations has grown. The **public sector** is now directing close to **8% of its total expenditure towards climate related activities**, while the private sector is actively engaging in climate-related investments through philanthropic and CSR initiatives.

The flow of green finance from foreign investors to Pakistan has also gradually increased over the past decade. Two of the biggest international funds involved in the process are the Global **Environment Facility (GEF**) and **Green Climate Fund (GCF).** Till date, **GEF has supported 38 projects** in Pakistan by providing nearly **US$100 million in funds**; **GCF** is currently facilitating **4 projects** in the country by **providing a total of US$131 million.**

However, these investments are insufficient to curb the climate crisis in Pakistan. As per the updated NDC targets set in 2021, the country requires at least **US$101 billion** for **energy transition by 2030** *(Ministry of Climate Change, Government of Pakistan, 2021)*, while the **cost of adaptation** has been estimated around **US$7-14 billion per year** till 2050 *(Asian Development Bank, 2017)*. Nonetheless, the significant amount of funding required also presents a number of underlying business and investment opportunities. Based on an analysis by IFC, **opportunities worth US$197.1 billion are available in various sectors of Pakistan**, pertaining to green growth, on the road towards achieving the country's 2030 climate targets. A sector-wise breakdown of potential investments is presented in the figure below:

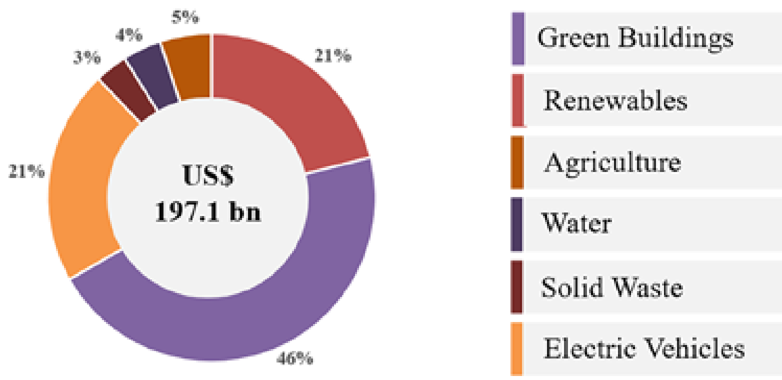

FIGURE 6 | Sectoral Breakdown of Investment Potential for Green Growth in Pakistan[2]

3.2. Sources of Green Finance in Pakistan

In a global context, the sources of green finance may be divided into three basic categories, which are as follows:

- **Domestic resources** – these represent a **country's own resources, public or private.** For Pakistan, these mainly refer to the allowances made in the national and provincial budgets and policies, along with finance provided by the corporate sector for the development of green and sustainable projects. Owing to the country's struggling economy, relying only on these resources is ineffective for Pakistan. Hence, it is critical that other avenues of green finance are explored and pursued.
- **Development partners** – these resources commonly refer to the **funds provided by third-party organizations**, usually **publicly-funded** multilateral development banks, bilateral cooperation and development aid agencies, whose main goal is to gather finance from developed countries and utilize it to assist developing nations in achieving their developmental targets. These organizations mainly provide support in activities such as **capacity building, project planning, lobbying, and advocacy, as well as sharing the economic risk associated with a given project.** Development partners present the most important and common resource in terms of green finance in Pakistan; several organizations including the World Bank Group, United Nations (UNDP and UNEP), Asian Development Bank, KfW Development Bank, USAID, GIZ, and the FCDO are already engaged in such activities in the country.
- **Capital Markets** – these resources are **characterized by open trading of financial securities, such as bonds and stocks.** Although governments also use capital markets to raise funds, it is mostly **dominated by the private**

2. The data has been extracted from an ongoing research under IFC

sector. The use of capital markets for green finance is a relatively new concept but it is rapidly gaining popularity all over the world, and therefore presents a promising opportunity for Pakistan as well.

3.3. Common Green Financing Instruments

In essence, green finance encompasses a wide range of financial products and services, which broadly fall under the domains of investment, banking, and insurance products. Other than the mainstream green financing instruments, there are several emerging concepts that are gaining popularity worldwide and therefore need to be explored further. Depending on their nature and the purpose they fulfil, these instruments may be categorized under various groups; the most common groups and subsequent tools in the context of Pakistan are presented and discussed in this section.

3.3.1. Unlisted Financial Instruments

Unlisted financial instruments encompass tools that are not listed and traded on a public exchange. In Pakistan, this category is already well-established in the form of **concessional finance**, which refers to the **provision of finance at a rate below the current market rate** to promote high-impact projects responding to globally significant development challenges. Concessional finance includes a wide array of tools and financial products, such as **loans, grants, equity investments, revolving funds**, **and refinancing schemes**. It is usually provided by major financial institutes, such as development banks and partners and public sector entities, at various stages of project development to also address barriers related to lack of early-stage finance. Additionally, blended finance presents a promising opportunity for Pakistan and should be utilized more to attract meaningful investments for green projects through an ideal combination of public and private finance.

3.3.2. Capital Market Instruments

Capital market instruments allow project developers to draw investments from a broader financing pool, also providing access to large-scale institutional investors looking for stable and predictable returns in the form of long-term operating assets. At present, **the most common capital market instruments are bonds**, which may be defined as financing tools that release monetary resources to the issuer based on the fulfilment of agreed upon conditions or through the capital market. In reference to green finance, several different types of bonds are available in the national and international markets that Pakistan can benefit from.

Green Bonds

Green bonds are, by far, the **fastest growing green financing instruments**

worldwide, with the biggest issuers being the US, China and France, whereas in terms of multilateral organizations, IFC and KfW development bank are the top issuers. The annual issuance of green bonds has grown from US$1.5 billion in 2007 when they were first launched to US$517.4 billion in 2021; with a growing investor appetite, the issuance value is set to hit the US$1 trillion mark by 2023 *(Climate Bonds Initiative, 2022)*.

Green bonds are quite similar to conventional bonds, in that they are also **fixed-income financing instruments** that are typically backed by project assets or the issuer's balance sheet. However, what sets them apart is that they are designated to raise capital exclusively for projects that have a positive impact on the climate and environment, e.g. renewable energy projects and green buildings.

Bonds, in general, may be denominated in the issuer's local currency or the currency of the market in which they are launched; in that case they are referred to as 'Eurobonds'. Similarly, they may take the form of **'Sukuk'**, which are **Islamic Sharia compliant bonds and fundamentally exclude interest rates**.

To test the concept and increase its popularity in Pakistan, SECP introduced a set of voluntary guidelines in 2021, incorporated with a well-built disclosure and reporting mechanism (Securities & Exchange Commission of Pakistan, 2021). Under these guidelines, green bonds may be issued through public offering or private placement.

In the context of Pakistan, a major challenge associated with green bonds is the need to verify them through an independent third party before they may be accepted, but organizations or individuals that possess the expertise to do so are sparse in the country. The need for a well-defined green taxonomy to clearly identify green projects is another challenge for Pakistan. Nonetheless, tapping the green bond market, especially on a global scale, is very valuable for the country as it is an important route to increase foreign investment.

BOX 3 | Pakistan's first Green Eurobond

In **May 2021**, **Pakistan's first ever green Eurobond** was issued by the country's **Water and Power Development Authority (WAPDA), with J.P. Morgan and Habib Bank Limited as the co-managers.** The bond was originally floated to raise US$500 million at an interest rate of 7.5% over 10 years *(Pakistan Water & Power Development Authority, 2021)*. However, owing to growing interest from investors, the bond was six times oversubscribed, with the actual value amounting to US$2.5 billion. This suggests that now is the best time for Pakistan to take advantage of the green bond market as the world is also moving in that direction. The proceeds of the Eurobond have been earmarked to fund hydroelectric projects within the country, including the Diamer Bhasha and Mohmand dams, in order to enhance the share of clean energy in power generation.

Social Bonds

Social Bonds are the 'use-of-proceeds' bonds devoted to financing new and existing projects with positive social outcomes. Social project categories include affordable basic infrastructure, access to essential services, affordable housing, employment generation, food security, and socioeconomic advancement, all of which are crucial elements of a just energy transition. The "use-of-proceeds" is ring-fenced, and present a great opportunity for Pakistan to rid itself of the socioeconomic crises that come with a shortage of low-income housing and unemployment.

Nature Performance Bonds (NPB)

Nature Performance Bonds (NPB) are **KPI-based financial instruments** that **incentivize issuers to meet certified nature performance outcomes against agreed-upon indicators**. The major advantage these bonds hold, for a developing country like Pakistan, is that there is no obligation to spend the raised funds on environmental ventures, and therefore may be diverted towards other issues such as health care, education, etc.; they also hold the potential to support the country in short-term economic recovery.

Catastrophe Bonds

Catastrophe Bonds are **high-yield debt instruments that allow insurance companies to transfer the risk of natural disasters to investors for a price**. This entitles the issuer of a catastrophe bond to receive funds, raised through the bond, in the event of a natural disaster or calamity that is predefined in the scope of the bond. Catastrophe bonds are one the most dominant insurance-linked security instruments available globally; unfortunately, they are not yet available in Pakistan. However, given Pakistan's vulnerability to climate change, and the increasing unpredictability and occurrence of natural disasters, such as floods and droughts, catastrophe bonds are an instrument that Pakistan must tap into.

Debt-for-Nature Swaps

Apart from bonds, **debt-for-nature swaps** are also effective capital market instruments that operate by **forgiving or laying off a portion of a country's debt in exchange for investing the freed-up capital in adaptation and mitigation activities.** With debt-for-nature swaps, debt is typically traded in the secondary market through tools such as government bonds, but these swaps may be executed bilaterally as well, in which case they may fall under the category of unlisted financial instruments. In either case the debt relief is typically provided in the form of a concession on the original amount, reduction in interest rate or a complete waiver.

Given that Pakistan's economy has been struggling with a balance-of-payments crisis, **debt-for-nature swaps present a valuable opportunity for the country.**

This should be considered as one of the priority green finance instruments for Pakistan. Moreover, Pakistan may use its flagship Ten Billion Tree Tsunami Project and other similar venture to capitalize this resource.

3.3.3. Results-based Financial Instruments

Results-based green financing instruments deal with investments that are conditional and linked to the performance of projects in achieving climate and energy targets. A useful financial tool for Pakistan within this category is the use of **carbon finance** together with the establishment of a carbon market. This **involves incentivizing and penalizing organizations based on their carbon profiles;** incentives, or carbon credits, are allocated for producing less than the fair share of carbon emissions, while a penalty, or carbon tax, is imposed for producing more than the fair share.

Such a market is helpful in maintaining a balance in the production of carbon without compromising on growth. Consequently, it could play an important role in green financing in Pakistan, since it is not a major polluter but is in dire need of capital to support growth and development. However, factors such as weak industrial structure, high production costs, and poor accountability are likely to limit the effectiveness of this approach, at least until improvements are made.

3.3.4. Risk Mitigation Instruments

These financial instruments focus on mitigating the risks involved in large scale investments pertinent to the development of green projects. Most importantly for Pakistan, they also hold the potential to attract and effectively mobilize private capital. Two of the most important tools here include: insurances and guarantee mechanisms, both of which are discussed below.

Insurances

Insurances are designed to **avert or minimize the risk of financial losses associated with an event, which in the domain of climate change is most often a natural disaster**. Since climate vulnerability is deeply connected to the financial situation of an area, countries such as Pakistan have a higher risk of being impacted by climate change as their coping capacity is often low. Financial tools such as climate risk insurances and catastrophe bonds are crucial in helping Pakistan manage and transfer its climate-related risks. Similarly, green insurances present a means of hedging the risks connected with the development of green projects, thus creating an easy path for finance.

Although, Pakistan does not have a well-established system of insurances, particularly those related to climate change, progress is being made on this front. At present, their scope is limited to the agricultural sector; however, following the launch of the 'Global Shield against Climate Risks' by G7 and V20 countries at COP 27 in November 2022, climate risk insurance and assurance mechanisms are likely to occupy a greater portion of climate finance flows towards Pakistan.

Guarantee Mechanisms

Financial guarantees **ensure that a given debt will be repaid to the lender by a third-party, or guarantor, in case the borrower fails to do so**. These are also **referred to as risk-sharing mechanisms**, and are an ideal way to attract finance for technologies and markets that are not yet mature, especially easing the flow of investments from the private sector. In Pakistan, multilateral development banks, including the World Bank and KfW development bank, are already engaged in providing guarantees to facilitate the development of green projects. However, other organizations, particularly from the public sector, may also get involved in the process.

3.3.5. Structured Finance Instruments

Structured financial instruments are designed to redistribute and mitigate serious investment risks usually related to complex assets. Asset fractionalization is a well-established financial tool within this category and **allows splitting up ownership of an asset in such a way that multiple investors may contribute and,** eventually, **benefit from it based on the proportion of finance they bring in**. The concept is already gaining popularity in many countries like USA, Malaysia, Singapore, and UAE.

In Pakistan, asset fractionalization could open up a window of opportunity for small scale investors, with relatively low investment capabilities, to take part in raising funds for green projects. It could potentially act as a driving force to engage the domestic market and foster collaboration between key stakeholders in the domain of green finance. **In April 2022, SECP launched a concept note on asset fractionalization** with the aim of regulating it through an official system to ensure that the process is fair and secure for all concerned parties *(The News, 2022)*.

3.4. Challenges in the implementation of Green Finance in Pakistan

The concept of green finance is relatively new for the entire world; Pakistan is no exception. As new instruments and tools continue to emerge, for Pakistan, there are a number of underlying challenges, risks and shortcomings, exacerbated by its status as a developing country, as it seeks to pursue green finance. Pakistan currently faces various barriers in implementation of green finance including **financial and governance barriers,** as well as **barriers related to capacity, skills and infrastructure.** Some of these are discussed hereunder:

3.4.1. Barriers in the financial sector

Integration with fiscal planning

Finance, at large, is still defined by mainstream instruments, theories and discourses, and has not synchronized well with emerging sciences and technologies. **It is essential to incorporate green finance, along with its underlying mechanisms, in the main fiscal planning of Pakistan**. At present there is a very marginal share of green financing in Pakistan, and that too characterized by small-level initiatives. Here, the major challenge remains in gradually moving from standard fiscal planning instruments and tools to green financing tools, as a source not only for green initiatives but also for an overarching fiscal framework.

Volatility of the global market

On account of unprecedented events, such as Covid-19 and political tensions between several governments, the degree of predictability in the global market has reduced drastically. As fuel and commodity prices continue to fluctuate, there is no certainty in where to invest and who to engage in business with. In addition to this, extreme weather events and other climate-induced disasters have also increased unpredictability in industrial trends and practices. This presents a major challenge in terms of the development and implementation of green financing mechanisms for a country like Pakistan that relies heavily on international support.

Budgetary constraints and misplaced priorities

At present, **the monetary resources allocated for the development of projects that could potentially fall under the domain of green finance is quite low.** The main source of government supported funds is the PSDP, whose share in the overall budget is generally small, evident in the **mere 8% allocation for FY 2022-23**, which when divided amongst the proposed projects results in an even smaller value that could be considered earmarked for green projects *(Ministry of Finance, Government of Pakistan, 2022)*. On top of that, a portion equivalent to **PKR 100 billion (1% of the total budget for FY 2022-23) has been allocated for disaster response**, which is again not entirely reserved for climate based vulnerabilities or adaptation measures. Considering Pakistan's vulnerability to climate change, **the country needs to spend a bigger portion of its budget on speeding up national response rather than relying solely on foreign aid and post-event recovery.** This requires significantly more resources and attention than are currently being warranted.

3.4.2. Governance Barriers

Political and Economic instability

The sustainable production and consumption of finance requires a well-defined socioeconomic structure and a stable political environment; a favorable investment climate is the key to securing funds and incentives. A rapidly changing political scenario typically ensues poor economic performance and social disparity, all of which are strong deterrents to investment; unfortunately, this is an issue Pakistan has been engulfed in for a better part of its existence. Moreover, these factors have contributed to low credibility in the eyes of financing institutions, which not only led to the addition of Pakistan in the Financial Action Task Force's (FATF) grey list back in 2018 but also kept the country there for over four years. Political instability has also been responsible for currency devaluation in Pakistan, which complicates the process of securing loans and refinancing from the developed world, making it a risky venture. Pakistan should prioritize strengthening democratic processes and institutions in the country, to achieve political and economic stability, a prerequisite for any kind of meaningful transition and development.

Shortcomings in the Energy Transition Strategy

Even though Pakistan has shown increased enthusiasm in incorporating renewables into its energy mix, it is yet to **commit to a complete shift from and shut down of fossil fuel-based plants**. A key issue here is that there is a lot of opposition in the international market now on the use of fuels, such as coal, particularly from donors and multilateral organizations; choosing to continue their use may damage the prospects of green financing in Pakistan. However, the energy crisis in Pakistan coupled with the current account deficit that threatens the stability of the Pakistani Rupee vis-a-vis the Euro and the US Dollar, runs a continuous risk of forcing the country to revert to fossil-based energy sources. At the same time, if Pakistan decides to make an abrupt switch from fossil-based power, it will be left to incur a huge financial burden in the form of stranded assets and unemployment. Therefore, well-calculated steps that take into account a just energy transition are needed to address this challenge.

Lack of awareness, initiative and will

While there may be many avenues and resources available in both, the national and international markets, **a large portion of the stakeholders is either unaware of their existence or unwilling to take the initiative to explore these new and emerging opportunities**. As a result, entities seeking green finance tend to approach developmental bodies and tools that are already well-established and popular in the local market, such as acquiring loans and grants from organizations like the Asian Development Bank, the World Bank, USAID, and other donor organizations working actively in Pakistan. This can saturate the market, thus decreasing the number of stakeholders that can benefit from green finance in the country. Similarly, **stakeholders are typically less inclined to take the initiative when it comes to looking for foreign avenues of funding**; owing to the high risk involved in doing business with foreign investors, such as in the form of currency devaluation and custom duties, they prefer to rely solely on local financing schemes, which are quite sparse at the moment.

Insufficient coordination between sectors

In Pakistan, the public, private and academic sectors tend to work quite independently without much cohesion, which is a major drawback when it comes to green finance. For example, there is a major gap in coordination between industry and academia in Pakistan. **Developing an infrastructure and subsequent market for green finance requires strong support from technical experts on the associated technologies,** such as solar PV, to identify limitations and issues; this is where **support from the academic body is crucial.**

The lack of coordination also affects policy making. The public sector is mainly responsible for rolling out policies and regulations that affect the working of all other sectors; although the public sector is now engaging other entities in the process, the lack of authority provided to them is still an issue. **Cohesiveness between various sectors is crucial to building a conducive environment for green financing.**

Lack of long-term planning and foresight

As is the case for many measures introduced in Pakistan, **the planning around green finance also runs the risk of being undertaken in a hurried manner, without being considered holistically**. At present the energy sector dominates the discussion surrounding green finance; where a clean energy transition is vital, other sectors, such as transport, disaster resilience, water management, and pollution control are also critical. In this context, mechanisms relevant to the **management and disposal of waste from renewable energy technologies need to be considered as well before moving ahead with the industry at a large scale.**

Furthermore, it is essential that once policies have been developed, they are implemented in an effective manner and that relevant institutions have sufficient capacity to do so. This necessitates taking a holistic approach to achieve a sustainable transition. **Stakeholders must understand the MEAs/ conventions/protocols that Pakistan has ratified and become a signatory to**; this is essential to push Pakistan towards becoming an effective player on the climate finance spectrum. As part of the assessments that banks and other financiers conduct, it is pertinent to be aware of the governing MEAs and relate them to the client's activities to gauge whether there is compliance with international conventions in the context of specific projects.

BOX 4 | MEAs/Conventions/Protocols signed by Pakistan

A holistic overview of the important agreements endorsed by the Government of Pakistan is presented below *(Hussain & Gillani, 2014)*:

Biodiversity related Conventions

- Convention on Biological Diversity
- Cartagena Protocol on Bio-safety
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on Wetlands of international importance especially as Waterfowl Habitat (Ramsar Convention)
- Convention on the Conservation of Migratory Species

Atmosphere/Climate Change Conventions

- United Nations Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol to UNFCCC
- Vienna Convention for the Protection of the Ozone Layer
- 1987 Montreal Protocol on Substances that deplete the Ozone Layer

Land Convention/Environmental Cooperation Conventions

- United Nations Convention to Combat Desertification (UNCCD)

Chemical and Hazardous Wastes Conventions

- Rotterdam Convention on Prior Informed Consent (PIC) for certain Hazardous Chemicals and Pesticides in International Trade
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Stockholm Convention on Persistent Organic Pollutants (POPs)

Regional Seas Conventions and related Agreements

- United Nations Convention on the Law of the Sea (UNCLOS)
- Convention concerning the Protection of the World Cultural and Natural Heritage

3.4.3. Barriers related to capacity, skills and infrastructure

Absence of a clear definition for green finance

In Pakistan, there is no clarity yet on what green finance actually is and what it entails. While it is true that a global consensus on the definition of green finance does not exist, it is also very common for countries to **specify a working definition to point out its key objectives, scope, and priorities and to facilitate its use within their country**. Conversely, in Pakistan, the understanding of green finance varies between stakeholders, who define it based on their interests and practices, which can create unnecessary complications when the concept is adopted on a larger scale, and even more when engaging international developmental and financing organizations.

Poor institutional capacity

Pakistan's **institutional capacity constraints are a major hindrance in the path towards a sustainable green transformation**. In terms of green finance, there is a general lack of capacity, especially when it comes to implementing the concept in various sectors, identifying associated risks, browsing and analyzing the market to identify avenues to pursue, and the ability to secure investments and funds. The challenge here is not that money is not available, nationally or internationally, but rather that a major portion of Pakistan's institutions do not have the ability and motivation to tap in to emerging green financing market, e.g. there are a lot of technicalities involved in filling out grant applications, and local institutions typically lack the expertise to fulfil the requirements of the funding organizations, thus missing out on valuable opportunities. Similarly, some green financing mechanisms, such as green bonds, often require verification from independent third parties to be accepted. The availability of relevant professionals and institutions is also quite limited in Pakistan, whereas engaging with international professionals could potentially add an extra monetary burden.

Delayed focus on indigenization and local actors

Much of the discussion on the development of green financing revolves around adopting international best practices. As important as it is to not reinvent the wheel, **more focus needs to be shifted towards the indigenization of green financing and identifying local actors.** Unlike developed countries, small-scale investors and industries play a major role in the existing renewable energy ecosystem within Pakistan. For example, in the informal sector, waste pickers and segregators, make up a considerable percentage of the green workforce. Therefore, focusing only on international best-practices creates the risk of excluding a large number of stakeholders from policies and regulations surrounding green finance, such as recycling arts, use of local eco-friendly material and sustainable building techniques coupled with climate friendly architecture.

Inadequacy of data and risk assessments

There is a shortage of data on the green financing needs of Pakistan; similarly, appropriate and holistic data on ESG principles and other aspects pertaining to various sectors, such as energy, agriculture, etc., are also scarcely available. A major reason for this is a lack of research and analysis on these issues, brought about partly by weak regulations on disclosures and scoping studies relevant to the implementation of a project. The **development and maintenance of climate-related databases and an analysis of the risks associated with projects in each sector are essential to accurately determine the extent of efforts required to tackle the crisis**. The impacted local communities need to be consulted in the process as well to obtain a comprehensive picture.

Poor accountability and disclosure mechanisms

In Pakistan, **a major deterrent to accessing finance, especially from international agencies, is the lack of a proper system of accountability, or its poor implementation**. A well-built disclosure and reporting mechanism is essential to provide investors the confidence that their money will be used for the purpose they had intended. Furthermore, transparency is also an important factor that Pakistan needs to work on; it is crucial to ascertain that all projects that receive finance are evaluated in a very rational manner and are properly documented.

In terms of green financing tools like carbon credits and taxation, a major bottleneck is the double counting of carbon; the emissions from a single industry, such as an oil and gas firm, can be attributed to all the companies involved in the process. This creates confusion in terms of the emissions or footprint of each sector, and therefore in where to invest and where not to; this can be exacerbated by poor accountability and implementation of disclosure regulations.

Chapter 4

Policy Recommendations

Green finance can potentially alleviate many of Pakistan's environmental, social and economic woes. However, it requires long term planning to fully reap the virtues of green finance and use them to the country's advantage. To this end, taking into account all sectors in the country, a number of policy recommendations pertinent to increase Pakistan's access to green finance are discussed in this chapter.

Develop an official definition for 'green finance' along with a green taxonomy to avoid greenwashing

The Ministry of Climate Change, the Ministry of Energy, SBP, and other related bodies should pool in their expertise to put forward a **suitable and transparent definition for the term 'green finance**' that can be applied on a national level. Following this, the government should form a well-equipped task force, which works in collaboration with relevant stakeholders to **develop a solid green financing framework and strategy**. It should include the development of green standards and certifications, as well as guidelines for tools such as green bonds, nature bonds, debt swaps, etc.

Side-by-side, taking heed from the European Union's Green Taxonomy, the government **should set up a technical expert group to develop a common taxonomy** that defines and steers sustainable activities and investment practices across all sectors within the country. This is crucial to provide **clarity on what constitutes a green and sustainable investment** in order to avoid greenwashing and misallocation of green finance. The task force may include representatives of apex bodies such as the chambers of commerce, microfinance associations, and agriculture and technology incubators along with regulators, policy makers and academia.

Initiate an all-encompassing awareness campaign that caters to all stakeholders

The government, along with financial institutions and green developers, such as SBP, SECP, PSX and the Alternate Energy Development Board (AEDB), should work on the **dissemination of information on green finance to increase public awareness** on the concept and enhance its implementation within the country. **Information instruments, such as advertisements, workshops and seminars may be employed** for this purpose.

It is also important that project developers and bank/FI employees are aware of green principles and in particular, Pakistan's various covenants and protocols signed with international bodies (MEAs). SBP and SECP can oversee this effort as well, being the regulators of banks and NBFIs.

Explore a broader range of avenues for green financing and initiate local research on relevant tools

Research clusters and consortia, comprising technical experts and policy makers from the public and private sector, should be established and supported by the government to **facilitate the design and development of green financing tools**, and their associated implementation mechanisms, suitable for Pakistan. The cluster may include representatives from the government, economic development organizations, financing institutions, energy sector organizations, technology and research institutions, environmental and regulatory bodies, academia, development organizations, think tanks, civil society organizations, etc.

Another initiative that could go a long way in making advancements on the subject and devising solutions tailored to Pakistan, is **redesigning the academic curriculum to align it well with new and emerging trends such as green finance and ESG principles**. Educational institutes and regulators, such as the Higher Education Commission should work on this to ensure that the curriculum is updated regularly and takes into account sustainable development and climate goals.

Create a database on green financing instruments and sources available to Pakistan

The government should **create and manage an open access database** that puts together information on green financing instruments and opportunities available in the national as well as international markets. It should also include the requirements laid out by each facility and highlight local institutions that may assist in fulfilling them (e.g. in acquiring relevant permits and documents).

Improve Pakistan's energy and economic outlook and create a favorable investment climate

The government should take effective measures **to improve its management of public finance and investment** to improve the country's outlook and build investor trust in Pakistan's financial ecosystem. The government should introduce policies and regulations, such as tax holidays and concessionary rates for the import of equipment used in green projects, to increase investor appetite and tilt, both local and foreign, investment towards green opportunities. Simultaneously, the government should incentivize foreign investors, capable of providing technical expertise to local developers of green products, to support the indigenization of the industry to make it cost-effective.

Furthermore, the Ministry of Climate Change and Environmental Protection Agency should act as a liaison between relevant organizations and private investors to create opportunities for financing institutions and business developers interested in building a green financing portfolio. This will help build efficient green investment pipelines, eventually contributing to resilient and sustainable economic development as well.

Conduct risk assessments to understand vulnerabilities and develop de-risking mechanisms to protect assets and stakeholders

Relevant research organizations and academic institutions should work together to **conduct risk assessment studies** to map out Pakistan's vulnerabilities in different sectors as well as the geopolitical potential to set up green projects. This is a vital step in increasing the country's preparedness to climate change, while also ensuring that the resources directed as green finance are spent effectively.

Since economic volatility is a major hurdle in drawing investments and developing projects in Pakistan, it is important that the government and other relevant institutions such as SBP, SECP, and PSX pool in their expertise to **develop a de-risking framework for green finance** and associated products and services. Development financing institutions should **introduce de-risking mechanisms relevant to currency devaluation**, such as Currency Exchange Funds, for larger projects undertaken with foreign investors.

Moreover, **project developers should prioritize engaging in financing contracts that provide funds in the local currency**. The government and regulators should also ensure the provision of incentives and a favorable investment climate for such investors. The government, through **SBP, should open a revolving account**, dedicated to providing sovereign guarantees for medium to large scale green projects of national interest.

Furthermore, the **Banking Association should be brought on board as a partner in the government's efforts towards green finance**, since all banks, in particular microfinance banks, are impacted significantly by climate related detriments to asset quality (rise in NPLs due to floods, droughts, etc.). The government, under the stewardship of the central bank may consider a mezzanine-level climate risk fund, pooling resources from various stakeholders, which will help banks mitigate these risks. Other instruments, like climate-dedicated risk-sharing facilities, can be set up. Microfinance apex institutions such as the Pakistan Microfinance Investment Company (PMIC) can be brought into the fold along with multilateral bodies and beneficiary banks to collaborate on a sustainable structure.

Develop robust systems of accountability and transparency

The Ministry of Climate Change, together with policy makers and regulators, should work on the **development of a robust MRV (Measurement, Reporting, and Verification) system for green financing tools to increase transparency and credibility**, and to ensure that investments are directed towards the right projects. This is also essential to building investor confidence in adaptation, mitigation, and development projects in Pakistan.

Undertake capacity building activities across all sectors to fill institutional gaps

Technology developers need to be able to discern between various green financing tools and instruments available in the market and identify the ones that will serve their purpose best. This may be accomplished through awareness sessions and **capacity building workshops by local and international experts**; it is essential to ensure that these workshops are customized to fit the local context. Similar **sessions should be organized for banks and financing institutions to build their capacity** and create awareness on projects that fall under the umbrella of green finance.

Government agencies and other stakeholders should be provided training on developing strategies and **roadmaps for the proper implementation of green financing** mechanisms. The capacity of regulators and supervisors should be enhanced so they can ensure effective implementation of the proposed strategies. Industrial and corporate officers should be trained to identify and quantify risks and develop forward-looking scenarios related to climate change and green finance to support their decision-making processes.

Basic climate finance training should be incorporated in the standard directorship trainings by the PICG, ICAP, etc. Whereas, project developers should be taught the essentials of making their projects bankable to investors. Relevant stakeholders should be trained to address and overcome the technicalities involved in applying for project-based investments and grants, such as under GCF, which is often dependent on filling complicated application forms and fulfilling rigorous criteria.

Draw attention to the underlying business opportunities presented by green projects

Public and private sector entities, particularly developmental and financing institutions, should **develop green policies and sustainability targets within their organizations**. This could include dedicating an appropriate portion of their budgets to supporting green initiatives, and actively declining collaborations with entities engaging in unsustainable activities. The boons from sustainability efforts should be presented as a business case rather than a social responsibility effort. Information about successful global and local practices should be disseminated across all organizational tiers for a successful 'management change' approach and better buy-in.

Encourage the involvement and growth of the private sector in green finance

The government and policy makers should focus on introducing effective policies and **incentives to safeguard the interest of private sector entities**

and SMEs (Small and Medium Enterprises) and increase their contribution to green projects within the country. Commercial banks and financing institutions should **develop a framework to enable a more widespread adoption of private equity funds in the country, as an alternative to foreign debt financing.**

The private sector should use its financial resources, technical expertise, and networks to promote green financing mechanisms in Pakistan. For example, the private sector could work together to develop a carbon offset and trading ecosystem within the country whereby, the hard-to-abate sectors can reduce their carbon footprint and improve their performance on the Sustainable Development Goals (SDGs) by leveraging green finance for sectors seeking to develop green projects and eco-friendly products.

The organization of International Investment Conferences should be encouraged to unlock a wider range of green financing avenues and increase the involvement of the private sector in such ventures.

Include green finance principles in corporate governance protocols

Green finance principles should be added to the corporate governance protocols implemented by the private and public sectors in Pakistan. To facilitate this, at least one director from a company should have a specialization in the subject, and should be heading a green finance committee. The committee would oversee a group of key individuals representing the management. It would work on facilitating finance to green projects, 'self-greening' initiatives by organizations, and identifying risks related to projects low on the green spectrum through an Environment Risk Rating (ERR) mechanism.

Increase local/national sources of green finance

In addition to increasing private sources of finance, public sources should also be allocated for the purpose. The government should dedicate an appropriate amount of **financial resources in the national and provincial budgets to facilitate green projects** and activities. The amount disbursed to provinces should be compatible with their vulnerability to climate change and potential for developing green projects.

The government should incorporate green financing tools and mechanisms with both, existing and potential projects and policies, such as CPEC, the Clean and Green Pakistan project, the Alternate and Renewable Energy Policy, Electric Vehicle policy, NDCs, etc.

In light of recent climate-induced events in Pakistan, the government, supported by a network of organizations working on adaptation and disaster risk reduction (such as NDRMF, NDMA, WWF) should introduce incentives and policies to divert more investments and funds towards adaptation in Pakistan. This may be provided in the form of grants and insurances to mitigate disaster risk and build climate resilience particularly in vulnerable areas of the country.

Broaden the scope of green banking and expand the role of banks and financial institutions

The government, through the Ministry of Finance and SBP, should take measures to **incentivize commercial banks and strengthen the role of green banking** in the development and implementation of green finance. The financing of unsustainable and environmentally harmful projects should be discouraged and penalized.

SBP should work on analyzing the feasibility of gradually decreasing non-green finance and integrating more with the private sector to promote green financing. As a next step to its financing scheme for renewable energy, SBP should extend its policy to include projects pertaining to green housing, electric and hybrid electric vehicles, and green industries. **Commercial banks** and other development financing institutions should be instructed and equipped to **provide soft loans or credit lines for technology transfer**, particularly for renewable energy projects on a small scale or for individual use.

To increase the involvement of businesses and corporations in green financing activities, **PSX should establish a 'green corner' within the stock exchange,** which would be exclusively **dedicated to exploring, improving, and strengthening green financing** and **investment opportunities**, while encouraging the listed companies to adhere to and report on ESG principles.

Form/Join binding alliances and networks pertaining to green finance

Organizations from **various sectors and industries should come together to form networks and binding alliances that obligate the setting and achievement of climate goals**, while providing support (in the form of green finance, technical assistance, etc.) and imposing self-governing penalties based on performance. Adequate, credible and mutually acceptable assessment techniques would have to be implemented to ensure wide-spread acceptability. International certification programs can support this effort as well.

Chapter 5

Way Forward for Green Finance in Pakistan

For a developing country, with a struggling economy like Pakistan's, green finance represents a lifeline that can support its development ambitions, while reducing its vulnerability and contribution to climate change. However, the acquisition of green finance in Pakistan is conditional to overcoming the challenges associated with the development and implementation of green financing mechanisms. Pakistan needs to put in substantial effort on this front, as inaction is likely to push the country back in the global competition. Given the country's economic situation and institutional capacities, an effective strategy would be to move forward in a series of small, well-calculated steps. Therefore, a three-phase plan, as detailed below, may be adopted.

Phase 1: Planning and Pre-implementation Phase

The first phase of the process, lasting 6-12 months should focus on planning and preparing for the road ahead. Pakistan needs to overcome the inefficiencies and challenges that currently engulf its industrial, financial and legislative sectors. Furthermore, the government should define a concrete strategy to shutdown fossil fuel based power plants and reiterate their commitment towards a just energy transition, gaining credibility in the eyes of international investors.

The government, in collaboration with all relevant stakeholders, should work on **clearly defining and developing all terms and concepts relevant to sustainable development and the acquisition of green finance.** It should focus on capacity building of aforementioned institutions and stakeholders to ensure they are well prepared for the implementation phase. The first phase should take care of conducting accurate risk assessments to identify areas that need to be prioritized, and developing different green financing tools and sensitizing stakeholders on their economic potential.

Phase 2: Testing and Voluntary Implementation Phase

In the second phase, which would last around 1-2 years, a solid strategy to implement green financing mechanisms in Pakistan should be developed. This should include drafting and rolling out guidelines and reporting procedures relevant to the process. However, during this phase, adhering to the guidelines and regulations should be voluntary to encourage adoption on a larger scale and slowly develop a market for green financing tools. Once they become more mainstream, they should be made mandatory as part of the next phase.

Phase 3: Mandatory Implementation Phase

The third and final phase should see the **guidelines and disclosure mechanisms formulated in the previous phase being adopted and implemented in their true essence and be made mandatory for all stakeholders.** Following this, the country should move from green finance to sustainable finance, by including ESG principles into the already established green financing mechanisms, as it is vital to dealing with climate change and energy transition holistically.

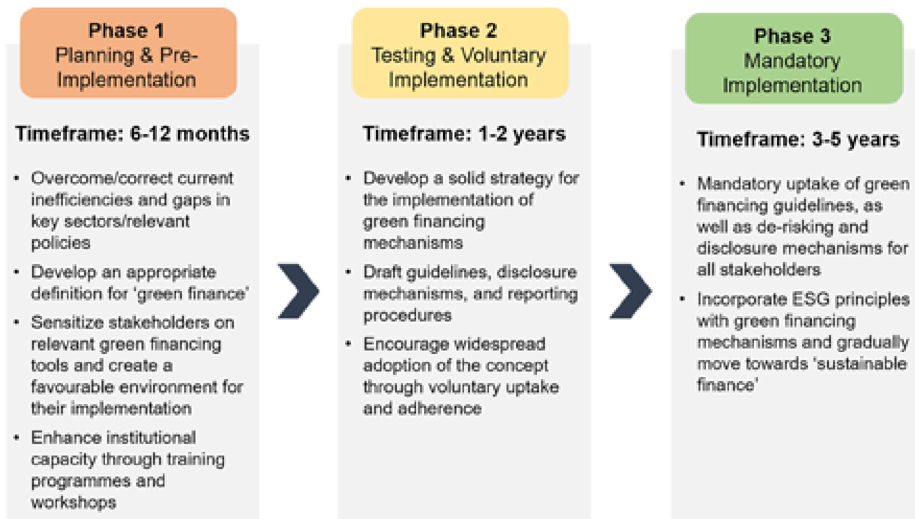

FIGURE 7 | Way Forward for Green Financing in Pakistan

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Annexure 1

Summary of Key Challenges & Recommendations for the Implementation of Green Financing Mechanisms in Pakistan

This Annexure includes a correlated summary of the challenges (Section 3.4), policy recommendations (Chapter 4), and way forward (Chapter 5) relevant to the implementation of green financing mechanisms in Pakistan. Each individual recommendation in this section is derived from the broader set of recommendations presented earlier, to depict a more precise relation with each key challenge.

Challenges	Recommendations	Key Players	Timeframe
Absence of a clear definition for green finance	Develop a suitable and transparent definition for the term 'green finance' that can be applied, without exception, on a national level.	MoCC, Ministry of Energy, SBP	Short term
	Set up a technical expert group (including representatives from the chambers of commerce, microfinance associations, technology incubators, regulators, policy makers, academia, etc.) to develop a common taxonomy that defines and steers sustainable activities and investment practices across all sectors in the country.	GoP	Short term
Integration with fiscal planning	Focus on mainstreaming green finance by initially introducing voluntary guidelines for the implementation of green financing tools, such as bonds and carbon credits, and then making them mandatory at a later stage depending on the response they receive.	GoP, SECP, Commercial banks and financing institutions	Medium-to-long term
	Incorporate and synergize green financing tools and mechanisms with both, existing and potential projects and policies, such as CPEC, the Clean and Green Pakistan project, Alternate and Renewable Energy Policy, Electric Vehicle policy, NDCs, etc.	GoP	Short term

Challenges	Recommendations	Key Players	Timeframe
Volatility of the global market	Prioritize engagement in financing contracts that provide funds in the local currency; incentives should be provided to create a favorable investment climate.	GoP, Regulatory Bodies, Project Developers	Short-to-Medium term
	Introduce de-risking mechanisms relevant to currency devaluation, such as Currency Exchange Funds, for larger projects undertaken with foreign investors.	DFIs	Short term
	Develop a framework to enable a more widespread adoption of private equity funds in the country, as an alternative to foreign debt financing.	Commercial banks and financing institutions	Medium term
Political and economic instability	Take effective measures to improve the management of public finance and investment to increase the confidence of foreign investors in Pakistan's financial ecosystem.	GoP, Regulatory Bodies	Short-to-medium term
	Open a revolving account, dedicated to providing sovereign guarantees for medium to large scale green projects of national interest.	GoP, SBP	Short term
Shortcom-ings in the Energy Tran-sition Strat-egy	Opt for more stringent, unambiguously defined policies and targets related to climate change mitigation and the energy transition, ensuring that they follow a robust MRV framework that facilitates investments and grants from donors and multilaterals.	GoP, Thinks Tanks, Policy Makers	Short term
	Introduce policies and regulations, such as tax holidays and concessionary rates for the import of equipment used in green projects, to create and foster a favorable investment climate, for local and foreign investors, alike.	GoP, Regulatory bodies	Short term
Inadequacy of data and risk assessments	Develop a de-risking framework for green finance and associated products/services.	GoP, SBP, SECP, PSX	Medium term
	Conduct risk assessment studies through specialized institutions to map out Pakistan's vulnerabilities in different sectors as well as the geopolitical potential to set up green projects.	Public & Private Research Institutions, Academia	Short term

Challenges	Recommendations	Key Players	Timeframe
Budgetary constraints and misplaced priorities	Divert a larger portion of climate action funds to disaster risk reduction and adaption to build climate resilience. These funds should ideally come from diverse sources, including grants and insurances depending on their relevancy to the situation.	GoP, NDRMF, NDMA, DFIs, Insurance companies	Short-to-Medium term
	Dedicate an appropriate amount of financial resources in the national and provincial budgets for the facilitation of green projects and activities. The amount disbursed to provinces should be compatible with their vulnerability to climate change and potential for developing green projects.	Federal and provincial governments	Short-to-long term
	Analyze the feasibility of gradually decreasing non-green finance in various sectors and integrating more with the private sector to promote green financing instead.	SBP	Medium-to-Long term
	Introduce green policies and sustainability targets within public and private sector organizations; these may include initiatives such as dedicating an appropriate portion of the organization's budgets to support green initiatives, and actively declining collaborations with entities engaging in unsustainable activities.	Corporates, DFIs	Medium term
	Establish a national carbon offset and trading ecosystem through which the hard-to-abate sectors can reduce their carbon footprint and improve their performance on the (SDGs) by leveraging green finance for sectors seeking to develop green projects and eco-friendly products.	Private Sector	Medium-to-Long term

Challenges	Recommendations	Key Players	Timeframe
Lack of awareness, initiative and will	Increase public and institutional awareness on green finance through the dissemination of information, using information tools, such as advertisements, workshops, and seminars.	GoP, SBP, SECP, AEDB, DFIs, Information and Media Outlets	Short-to-medium term
	Create a well-managed, open-access database that gathers information on green financing instruments and opportunities available in the national and international markets. It should also include the requirements laid out by each facility and highlight local institutions that may assist in fulfilling them (e.g. in acquiring relevant permits).	MoCC, Ministry of IT and Telecommunication, SECP, DFIs	Short-to-medium term
	Organize International Investment Conferences annually to open a wider range of green financing avenues and increase private sector involvement in green ventures.	GoP, Chambers of Commerce	Continuous
	Establish a 'green corner' within the stock exchange dedicated to exploring, improving, and strengthening green financing and investment opportunities in the country, while encouraging the listed companies to adhere to and report on ESG principles.	PSX	Short term
	Present the benefits reaped from sustainability efforts of corporates as a business case rather than a social responsibility effort and disseminate information on successful global and local practices across all organizational tiers for a successful 'management change' approach and better buy-in, to further promote their use.	Public and Private enterprises, DFIs	Continuous

Challenges	Recommendations	Key Players	Timeframe
	Add green finance principles to the corporate governance protocols of private and public sector entities in Pakistan whereby, basic climate finance training is incorporated in the standard directorship trainings.	SBP, SECP	Short term
	Deliver awareness sessions and capacity building workshops to technology and project developers to enable them to discern between various green financing tools and instruments available in the market and identify the ones that will serve their purpose best. These workshops should be customized to fit the local context and curated by national and international experts. Similarly, the capacity of these stakeholders should be strengthened in order to develop project proposals that are bankable and ready to be presented to investors.	All Stakeholders	Short term
Poor institutional capacity	Organize training sessions for banks and financing institutions to build their capacity and create awareness on projects that fall under the umbrella of green finance as well as on de-risking mechanisms to safeguard their operations.	SBP, Commercial Banks, DFIs	Short term
	Provide trainings to stakeholders and regulators on developing roadmaps for the proper implementation of green financing mechanisms along with building capacity to ensure their effective implementation.	GoP, Regulatory bodies	Short term
	Provide training to industrial and corporate officers to help them identify and quantify risks and develop forward-looking scenarios related to climate change and green finance to support their decision-making processes.	Private sector	Short term
	Organize regular training programs to equip stakeholders with the knowledge and skills necessary for filling out applications for project-based investments and grants, such as under GCF, and overcoming the technicalities involved in the process.	Project Developers, DFIs	Short term

Challenges	Recommendations	Key Players	Timeframe
Insufficient coordination between sectors	Use a focal institution to act as a bridge and bring together relevant organizations and private investors to create opportunities for financing institutions and business developers that are interested in building a green financing portfolio.	MoCC, EPA	Short-to-medium term
	Research clusters and consortia, comprising technical experts and policy makers from the public and private sector, should be established and supported to facilitate the design and development of green financing tools, and their implementation mechanisms, suitable for Pakistan.	GoP, All Stakeholders	Short term
	Bring together organizations from various sectors and industries to establish networks and binding alliances that obligate the setting and achievement of climate goals, while providing support (in the form of green finance, technical assistance, etc.) and imposing self-governing penalties based on performance.	All Stakeholders	Short-to-Medium term
	Include the Banking Association in the government's efforts and plans on green finance. The government, under the stewardship of the central bank, may consider a mezzanine-level climate risk fund, pooling resources from various stakeholders, to help banks mitigate calamity related hits to asset quality. Other instruments like climate-dedicated risk-sharing facilities can be set up as well.	GoP, Pakistan Bank's Association	Medium term
Delayed focus on indigenization and local actors	Provide incentives to foreign investors capable of providing technical expertise to local green product developers and support indigenization of the industry, making it cost-effective in the long-run.	GoP	Medium term
	Focus on introducing effective policies and incentives to safeguard the interest of private sector entities and SMEs (Small and Medium Enterprises) and increase their contribution to green projects and finance within the country.	GoP, Policy Makers	Short-to-Medium term
Poor accountability and disclosure mechanisms	Develop a robust MRV system for green financing tools to increase transparency and credibility, and to ensure that investments are directed towards the right projects.	MoCC, Policy Makers, Regulatory Bodies	Medium term

Challenges	Recommendations	Key Players	Timeframe
Lack of long-term planning and foresight	Develop a solid green financing framework that clearly defines aspects such as green standards and certifications, as well as implementation guidelines for green financing instruments and tools; a well-rounded task-force may be formed for this purpose.	GoP, SECP, SBP	Medium term
	Extend the current concessional finance and re-financing scheme for renewable energy to include projects pertaining to other sectors, such as green housing, electric and hybrid electric vehicles, and green industries, as well.	SBP and commercial banks	Short-to-Medium term
	Provide incentives to commercial banks and strengthen the role of green banking in the development and implementation of green finance. This should be accompanied by measures to discourage and penalize the financing of unsustainable and environmentally harmful projects.	Ministry of Finance, SBP	Short-to-Medium term
	Provide soft loans or establish credit lines for technology transfer, particularly for renewable energy projects on a small scale or for individual use.	SBP, Commercial Banks, DFIs	Short-to Medium term
	Redesign the curriculum to identify and put into practice how each discipline can contribute to sustainable development and climate goals. It should be continually updated to align well with new and emerging trends, such as green finance.	Higher Education Commission, Educational Institutions	Medium term

Annexure 2

Key Initiatives taken under Green Banking by selected Commercial Banks in Pakistan

In the years immediately following the introduction of SBP's GBG, nearly all commercial banks in Pakistan readily embraced the concept of Green Banking and started working on its full-scale adoption within their institutions. In this context, the first step has generally been to set up a Green Banking Office with a properly defined organizational structure. In addition to this, these banks have been acting as the major instrument for SBP's Financing Scheme for Renewable Energy and using it as a means of implementing the 'green business facilitation' element of the GBG. Nonetheless, various other initiatives, especially for 'own impact reduction', have also been taken by different banks in adherence with the guidelines and their quest towards sustainability. These are highlighted below:

Commercial Banks	Initiatives under Own Impact Reduction	Other Initiatives
Habib bank Limited *(Habib Bank Limited, 2021)*	• Establishment of the 'Green Operations Unit' that has introduced measures such as systems automation and remote monitoring to manage the use of resources and reduce the overall impact of HBL's operations • Setting of a 'Net-zero' target for own impact reduction as a member of the Agha Khan Development Network (AKDN). The feasibility of expanding the target to the supply chain and customers is also being explored • Introduction of a 'no new coal' policy at the institutional level, which now obligates the bank to refuse any new projects from the coal and mining sector • Incorporation of LEED/IFC standards in major office buildings, such as the HBL Tower in Karachi • Installation of solar panels in over 170 locations, with a combined capacity of 525 MWh/year, to reduce the cost of electricity and provide a backup source of energy for offsite ATMs. This action has resulted in an annual reduction of 373 MT of CO_2.	• Acted as a key facilitator in the development of SBP's GBG • Acted as a co-manager for the issuance of Pakistan's first Green Euro Bond for WAPDA, in 2021 • Collaboration with WWF on green financing for the Recharge Pakistan program • Working on the development of a green taxonomy, which is aligned with the international 'common ground taxonomy' and is expected to be implemented soon at an institutional level in HBL • Signatory of the 'Green Investment Principles, China', which is designed for green investments in the Belt and Road Initiative (BRI)

Commercial Banks	Initiatives under Own Impact Reduction	Other Initiatives
Allied Bank Limited (Allied Bank, 2020)	• Introduction of 'Solar-powered branches' as a key category for thematic branches; so far, 59 branches are operating under this • Investment of PKR 332 million in energy saving solutions, including the installation of inverters for back-up power in 1,191 branches across Pakistan • Reduction in the consumption of electricity by 15% and fossil fuels by 8% through maintenance of electrical equipment and energy efficiency measures (in the previous year) • Plantation of 1,000 fruit trees in the previous year as part of a tree plantation drive held in collaboration with the Punjab Forest Department, under the Clean and Green Pakistan campaign • Automation of existing processes to promote paperless banking	• Disbursement of PKR 2,986 million in the previous year under SBP's financing scheme for renewable energy • Setting up of a 'Green Advisory Services Desk' at the Head Office to advocate for and provide guidance on green business practices • Partnership with Karandaaz Pakistan for the financial inclusion of SMEs • Introduction of 'Allied Solar System Finance' as a green banking initiative
JS Bank (JS Bank, 2021)	• Solarisation of 113 branches (over 33% of total) • Introduction of carbon reduction measures at the institutional level, including the regulation of energy and paper consumption at all operating locations • Introduction of energy efficiency measures in the form of efficient appliances, such as LED lights and inverter ACs • Certification as a Green Office by WWF for nearly five years now • Segregation of waste in all offices to promote recycling	• Provision of solar panel financing solutions, for individuals and businessmen for residential, agricultural, and commercial needs, that include the end-to-end comprehensive installation through a network of 40 AEDB certified partners across Pakistan • Accreditation by GCF and approval of the 'Pakistan Distributed Solar Project' in May 2022. Till date, JS Bank is the only financial institution in Pakistan to be accredited by GCF • Introduction of an Environmental and Social Risk Management (ESRM) framework, in 2019, to create awareness on environmental and social risks involved in the extension of credit

Commercial Banks	Initiatives under Own Impact Reduction	Other Initiatives
Bank Alfalah *(Bank Alfalah, 2021)*	• Digitization of major HR processes in order to promote paperless operations. Automation and digitisation of other major functions is also underway • Plantation of 5,240 trees by employees under the bank's 'Go Green Initiative' • Conversion of 150 ATMs to solar energy • Introduction of energy efficiency measures, including the replacement of diesel generators with UPSs, traditional energy savers with low consumption LEDs, and conventional ACs with inverter ACs • Involvement in 8 commercial renewable energy projects (Bagasse = 3, Wind = 4, Solar = 1)	• Introduction of 'Alfalah Green Energy', which is a term financing facility for customers to install solar energy equipment with net metering in the capacity range of 4 – 1,000 kW • Establishment of an Environmental and Social Management System (ESMS), which essentially requires the review and evaluation of lending opportunities under IFC's exclusion list, and applicable national laws on environment, health, safety, social, and IFC performance standards.
Askari Bank Limited *(Askari Babk, 2021)*	• Digitization and automation to reduce paper consumption and printing • Replacement of conventional light with LEDs, which is currently underway • Conversion of select ATMs to solar energy (initiated as a pilot project)	• Prioritization of environmentally responsible initiatives for financing on an institutional level • Introduction of 'Askari Ujala Finance', under SBP's refinance scheme for SMEs and retail segments to offer subsidized financing for sustainable and environmentally responsible energy projects • Organization of 'Askari Bank Green Day', which is an annual plantation drive conducted across major cities to reiterate commitment to green banking

Commercial Banks	Initiatives under Own Impact Reduction	Other Initiatives
MCB Bank *(MCB Bank, 2021)*	• Introduction of measures to promote an energy conservation and efficiency at the institutional level, including exercising strict control over lighting in all branches and offices, replacing conventional light bulbs with LEDs, and discouraging late sittings in the offices • Installation of a Building Management System in Principal Office buildings to better control and manage heating and cooling • Installation of a cogeneration plant with waste heat recovery at MCB Centre, Lahore as well as a heat recovery system, with a capacity of 1,555 kW, at MCB Tower, Karachi for water and space heating and cooling • Introduction of digital banking services, such as internet banking, mobile banking, e-statements, etc. to reduce dependence on paper • Certification of MCB Centre, Lahore as a Green Office by WWF • Segregation and recycling of waste generated from offices	• Incorporation of Environmental Due Diligence in the bank's overall assessment of a borrower, to gauge the environmental impact of business operations.

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