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Situation Brief

Greening Pakistan's Future:
Facilitating Loans for Electric Vehicles and Distributed Solar PV

Acknowledgment

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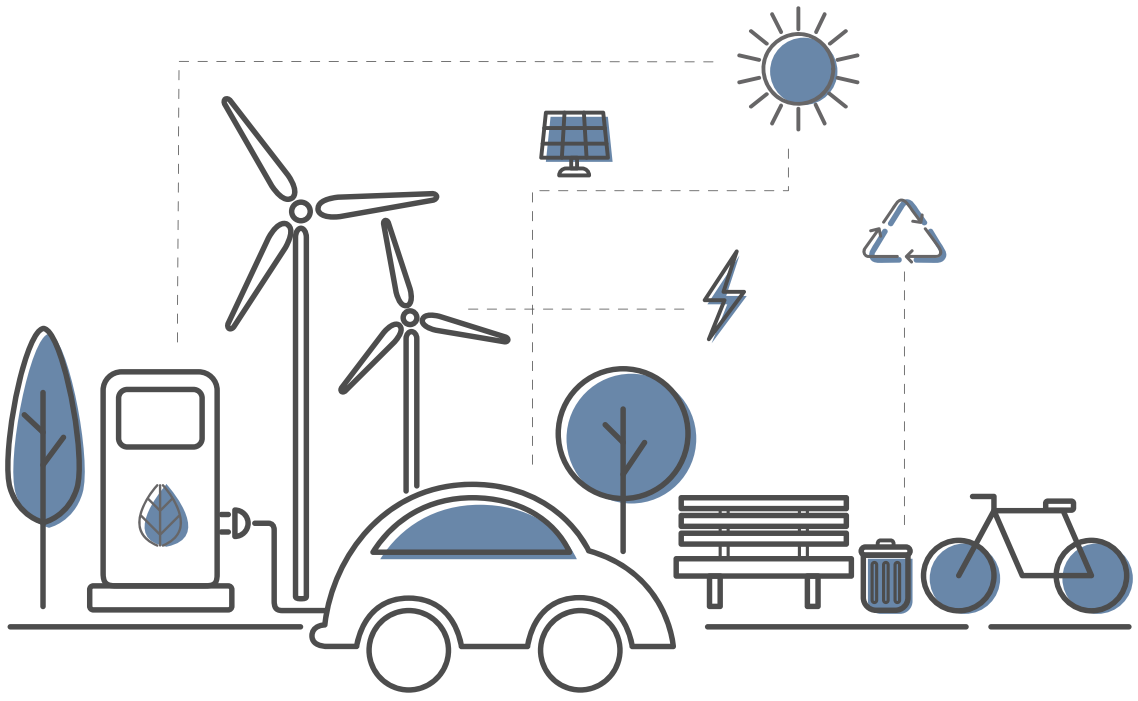

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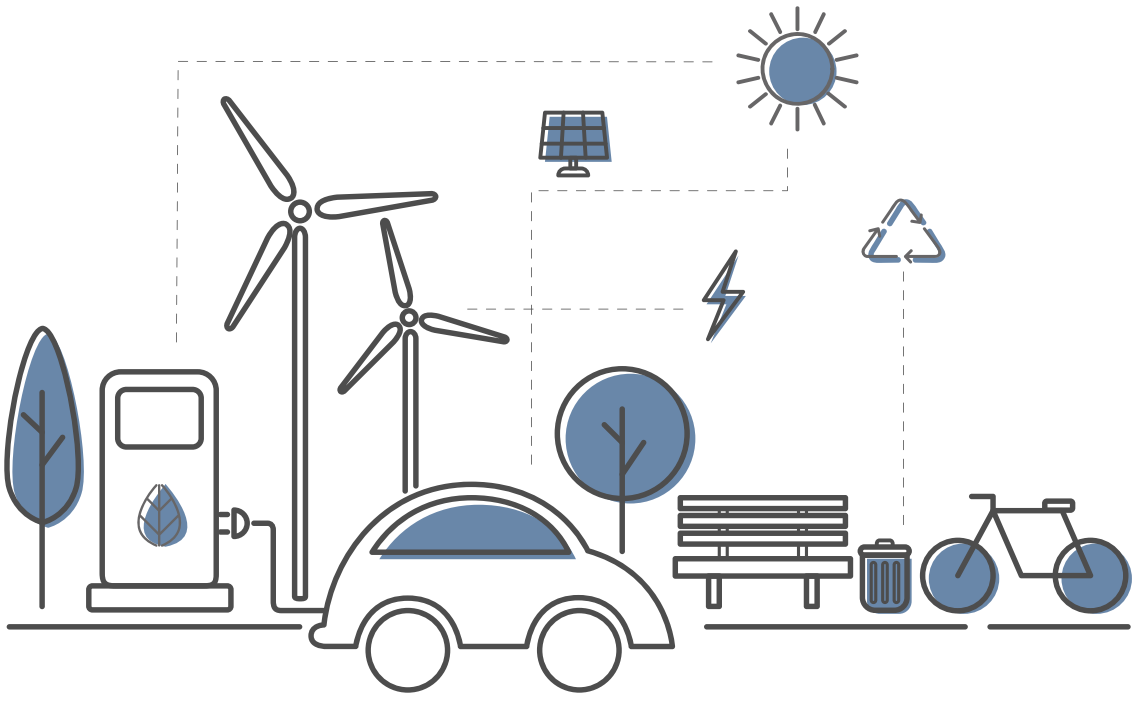

Introduction

In recent times, the declining costs and improvements in the quality of renewable energy sources have considerably enhanced the feasibility of displacing fossil fuels, particularly within the realm of Electric Vehicles (EVs) and Distributed Solar Photovoltaic (DSPV) systems. Compared to traditional conventional sources of energy procurement or vehicles—although DSPV and EVs are beneficial in terms of the total lifecycle cost, they are more capital intensive and come with a higher upfront cost. To overcome this cost barrier, financial institutes therefore perform a crucial role.

Globally, we do see a surge in policy and financial instruments aimed at scaling up green products—and for easing this financing challenge for end-users. For example, a group of central banks and supervisory authorities initiated the Networking for Greening the Financial System (NGFS) in 2017 with the larger objective to enhance the evaluation and mitigation of climate and environment-related risks within the financial sector. Furthermore, many central banks in their role as guardian of financial institutes formulated green financing guidelines and rolled out tailored concessionary green lending facilities to incentivize sustainable investments. In 2016, the central bank of Pakistan—called State Bank of Pakistan (SBP)—also introduced a tailored financial facility/ scheme called 'SBP Financing Scheme for Renewable Energy'[1] (SBP REF) to promote renewable energy transition. This concessional lending program extends financial support to various categories of investors and borrowers. Specifically, Category II of the scheme is designed for investments in renewable energy technologies, targeting small-scale investors such as sponsors as well as end-users. Notably, the scheme offers loans at interest rates below the market average and flexible terms (see table.1). However, this Scheme is voluntary which means that it is entirely the discretion of the banks to initiate financing under the facility. The process for availing finance under the Scheme therefore begins with the collaborative role of commercial banks. Once a bank decides to introduce financing under the facility, they design their own 'Terms of Reference' (TOR's) featuring details on the tenor of loans, collateral requirements, and eligibility criterions etc. for potential borrowers. The interest rate however is standard for these loans fixed at 6 percent. These TORs are then either explicitly published on the bank's website or are shared with borrowers once they get in touch with the banks.

Additionally, the National Electric Vehicle Policy (NEVP), implemented in Pakistan in June 2021, aims to propel the adoption of electric vehicles (EVs) nationwide. The policy targets a transition of 30% of the automotive sector to electric power by 2030, escalating to an ambitious 90% by 2040. Addressing this target, the Ministry of Industries and Production launched a financing scheme in 2023 for electric two-wheeler bikes and electric three-wheelers based on different subsidy models.2 Ministry of Industries and Production stated that given the prevailing economic scenario and limited financial resources, the Ministry proposed Scheme 4 (as shown in figure 1 below) is the most viable option to enhance demand for E-Bikes and E-Rickshaws in the domestic market. To implement the fourth scheme, a portion of already allocated funds for PMYB&ALS may be set for the uptake of E-Bikes/ E-Rickshaws in the country. The Economic Coordination Committee (ECC) approved proposed scheme 4 for up to 15,000 e-bikes/ rickshaws

1 https://www.sbp.org.pk/Incen-others/Rene.asp

2 https://profit.pakistantoday.com.pk/2023/04/13/ecc-approves-loan-scheme-model-for-e-bikes-e-rickshaws/

Table 1: SBP Financing Scheme for Renewable Energy

Features	Category I	Category II	Category III
Max Loan	Rs 6 billion (for a single project)	Rs 400 million (for a single borrower)	Rs 2 billion (for a single vendor/supplier/ company)
Tenor	12 years (Maximum)	10 years (Maximum)	10 years (Maximum)
Rate (Tot 6%)	SBP service charge: 3% Bank spread: 3%	SBP service charge: 2% Bank spread: 4%	SBP service charge: 3% Bank spread: 3%
Down payment	100% of total financing for projects up to 20 MW 50% of total financing for projects between 20-50 MW	100% of total financing	
Repayments	Principal: Quarterly/Half yearly Markup: Quarterly	Principal: Monthly/Quarterly/Half yearly Markup: Monthly/Quarterly	Principal: Monthly/ Quarterly/Half yearly Markup: Monthly/Quarterly

Source: SBP, 2019[3]

3 https://www.sbp.org.pk/Incen-others/Rene.asp

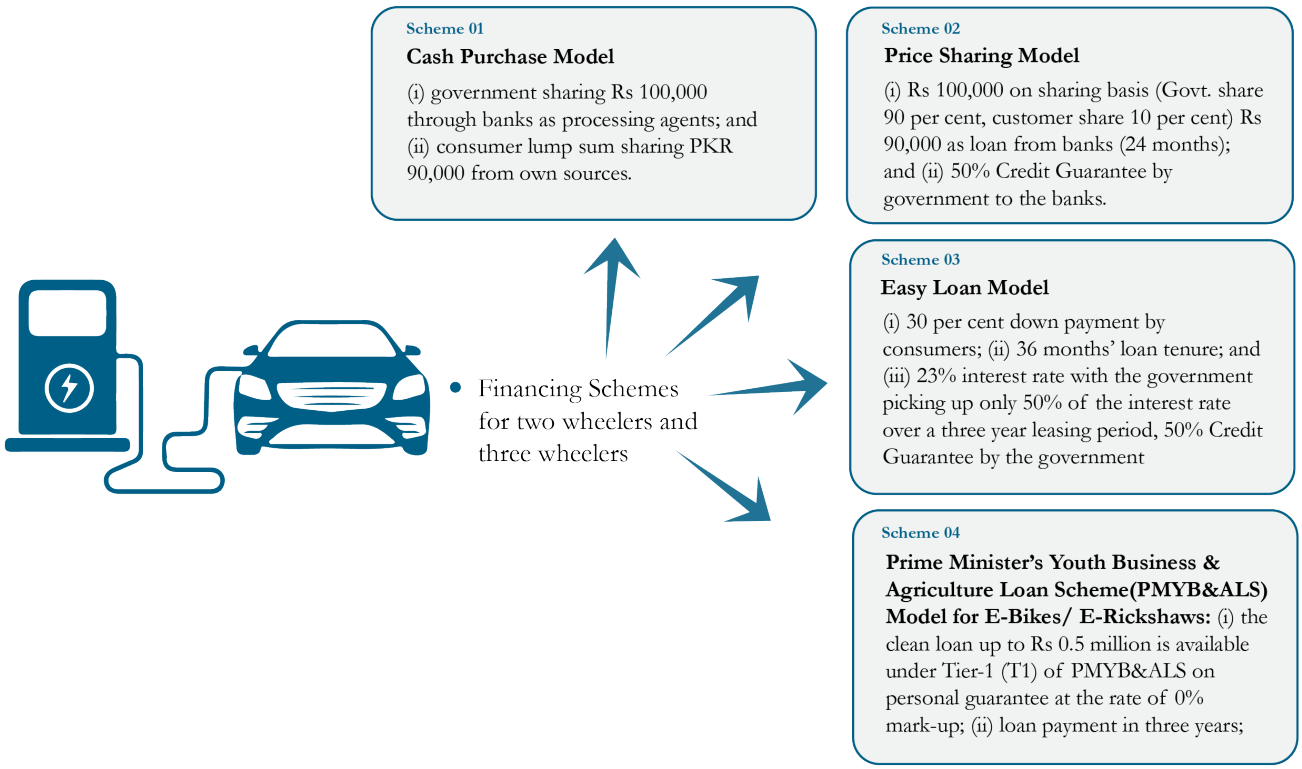

Figure 1: Financing Schemes for two wheelers and three wheelers (Proposed Schemes) [4]

Despite the introduction of these tailored financing facilities—many challenges including implementation lags, regulatory shortcomings, as well as complex bureaucratic processes have prevented its widespread adoption. Additionally, existing financing models perpetuate inequities in access to financing, undermining the effectiveness of renewable energy (RE) financing in achieving equitable distribution of financial resources. While in the wake of all these challenges, no proper monitoring or evaluation mechanism for assessing the progress of financing under the facility has been developed. Overall, the above analysis shows that discursive tensions can be found in the socio-technical financial system, and so renewable financing continues to be in its infancy. A decentralized clean energy transition drive (co-)owned by consumers necessitate removing these barriers in a systematic way.

So, although we do see a surge in policy and financial instruments aimed at scaling up green products globally—these initiatives largely overlook the real barriers to green lending and difficulties in accessing finance for renewable energy technologies. Within the context, this situation brief focuses more on the governance dynamics inherent in financially restricted contexts, where the challenges of energy affordability, poverty, and resource scarcity intersect in the context of RE financing. We investigate the status quo of green product lending in Pakistan and highlight some of the key inadequacies. We devote attention to particularly the two concessionary Schemes rolled out for scale up of EVs and DSPVs (mentioned in Table 1 and Figure 1).

For our analysis, we used mixed-methods approach, which included both qualitative and quantitative research methods—including document analysis and interviews with key stakeholders from commercial banks, central banks, and energy departments.

4 https://www.brecorder.com/news/40239094

The status quo of DSPV and EV lending facilities

Tracking implementation of the SBP REF Scheme: State of the play

Presently, only a few banks in Pakistan are extending finance for Distributed Solar Photovoltaic (DSPV) systems under the SBP REF Scheme. As noted earlier, to avail financing under the "SBP REF scheme," it is essential for a commercial bank to introduce the facility and begin lending as part of the scheme. However, because participation in the scheme is voluntary, not all banks have opted to offer finance through this facility. In Figure 2, we illustrate that only 41% of banks are extending loans for the DSPV under the SBP REF Scheme.

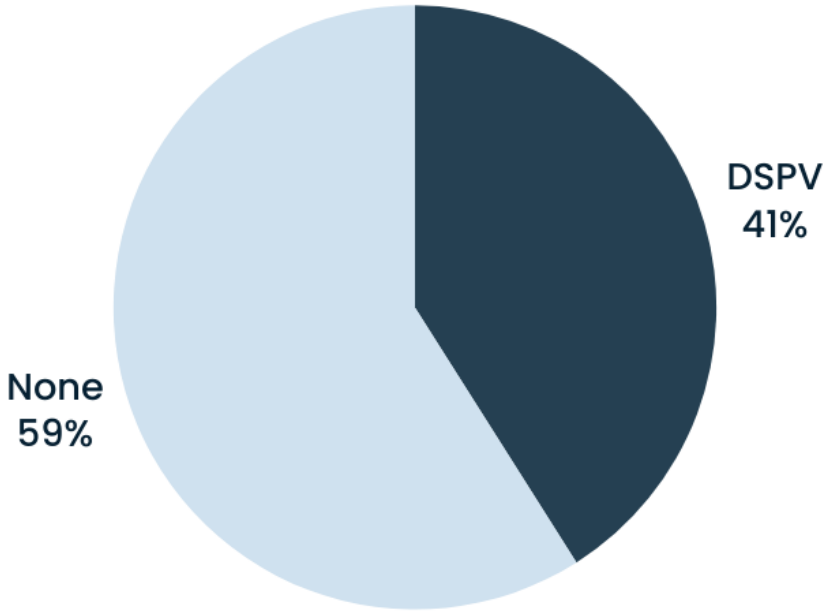

Figure 2: Financial Institutes engaged in DSPV lending under the SBP Scheme. Source: Authors own calculations.

Additionally, the State Bank of Pakistan (SBP) has discontinued allocations to banks under this concessional facility. The year 2021 saw the final disbursement of renewable energy financing under the Scheme, with subsequent limitations imposed by the amended SBP Act Section 20(5A) effective January 28, 2022, prohibiting quasi-fiscal operations and thereby ceasing new allocations. Although it was advised that the scheme must be extended till June 30, 2024.[5] Many banks have already exhausted their quotas for renewable energy financing, resulting in the current cessation of financing for Distributed Solar Photovoltaic (DSPV) systems under this facility.

It's important to note that the restricted public access to data on the disbursement of the RE scheme hampers a clear understanding of its overall impact and effectiveness. This lack of transparency is a challenge for assessing the true reach and success of these financing initiatives in advancing Pakistan's renewable energy goals.

5 https://www.sbp.org.pk/smefd/circulars/2022/CL9.htm

Status of EV lending

The situation regarding EV lending appears notably dire. Currently, only a small number of financial institutions are providing loans for Electric Vehicles (EVs). Our analysis indicates that just 4% of banks in Pakistan are actively involved in financing EVs, as depicted in Figure 3. This underscores a significant disparity within the banking sector regarding support for renewable energy initiatives, with 96% of banks abstaining from EV lending. Although the Ministry of Industries and Production has introduced a financing scheme for electric two-wheeler bikes based on subsidy models, this scheme has not yet been put into effect.

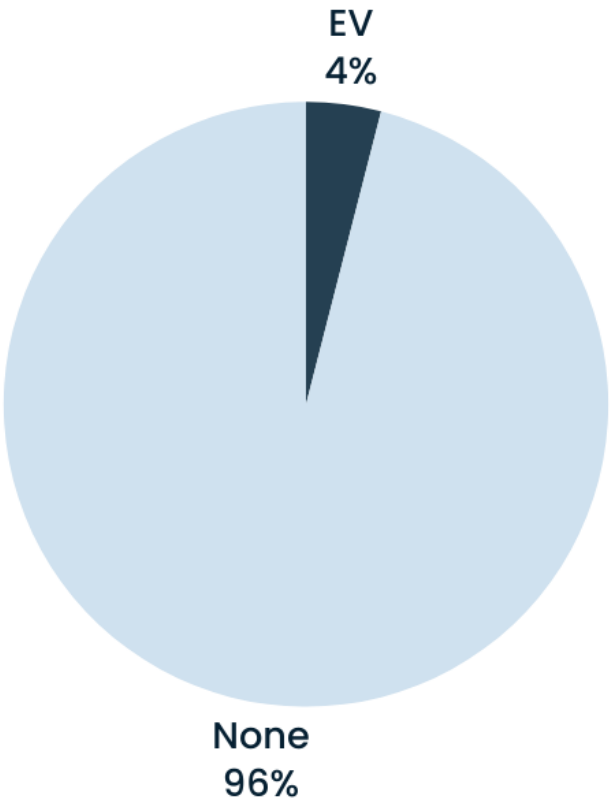

Figure 3: Financial Institutes engaged in DSPV lending under the SBP Scheme. Source: Authors own calculations.

Major Roadblocks Impeding DSPV and EV Lending

Critical limitations within regulations of green lending hinder broader renewable financing initiatives

The central bank of Pakistan introduced a concessionary renewable financing scheme with good intentions to support RE uptake. However, majority banks in Pakistan distanced themselves from this lending facility. Arguably, the voluntary regulations for the implementation of the Scheme have been a key factor in its partial introduction, and this is why renewable energy lending continues to be in its infancy.

Further the Scheme also has limited scope. The SBP REF Scheme targets only a limited number of green products i.e. distributed and utility scale solar PV and Wind. EVs and other renewable energy technologies do not fall under its jurisdiction. In the case of EVs, there was a recognized need to introduce another financing facility which has not yet been implemented. So the taxonomy-related problems in terms of narrow scope of these facilities, as well as the need to introduce separate facilities for different product is another key regulatory limitation adding a further layer of complexity.

While in the wake of all these challenges, there is also a significant deficiency in terms of robust monitoring or evaluation mechanism to effectively track and assess the progress of financing under the facility. In the absence of a proper monitoring or evaluation mechanism, there was no assessment on these challenges surrounding green lending.

Finally, when the Scheme was gradually gaining traction, the SBP ceased allocations under the facility leading to its complete cessation. Also, as discussed earlier the devised EV financing facility has encountered significant setbacks in execution. The stated changes in regulations and supportive policies have therefore increased the uncertainty for financial institutions and borrowers. To sum up, voluntary regulations of the tailored financing facilities, taxonomy issues, changes in regulations, as well as implementation lags etc. have been a key constraint.

Main barriers at the operation level

A notable feature of the SBP REF Scheme has been its concessionary scope i.e., lower than market interest rate; and favorable conditions in terms of financing amount, loan tenor and debt to equity requirements. The specific provisions outlined under Category II of the Scheme are detailed in Table 1.

As previously mentioned, the interest rate set by the central bank for renewable energy lending remains consistent across institutions. However, banks have the flexibility to determine the remaining features of financing according to their preferences, provided they adhere to the maximum or minimum benchmarks established by the SBP. Consequently, the features of renewable energy financing vary from one bank to another. This variability encompasses factors such as minimum down payment requirements, maximum loan duration, collateral prerequisites, and eligibility criteria. We have collated and categorized this information to gain insight into the individual bank requirements for accessing financing under the Scheme. Figure 4, presented below, elucidates the strategic design of three pivotal features by banking institutions – Collateral, Loan Tenor, and Down payment.

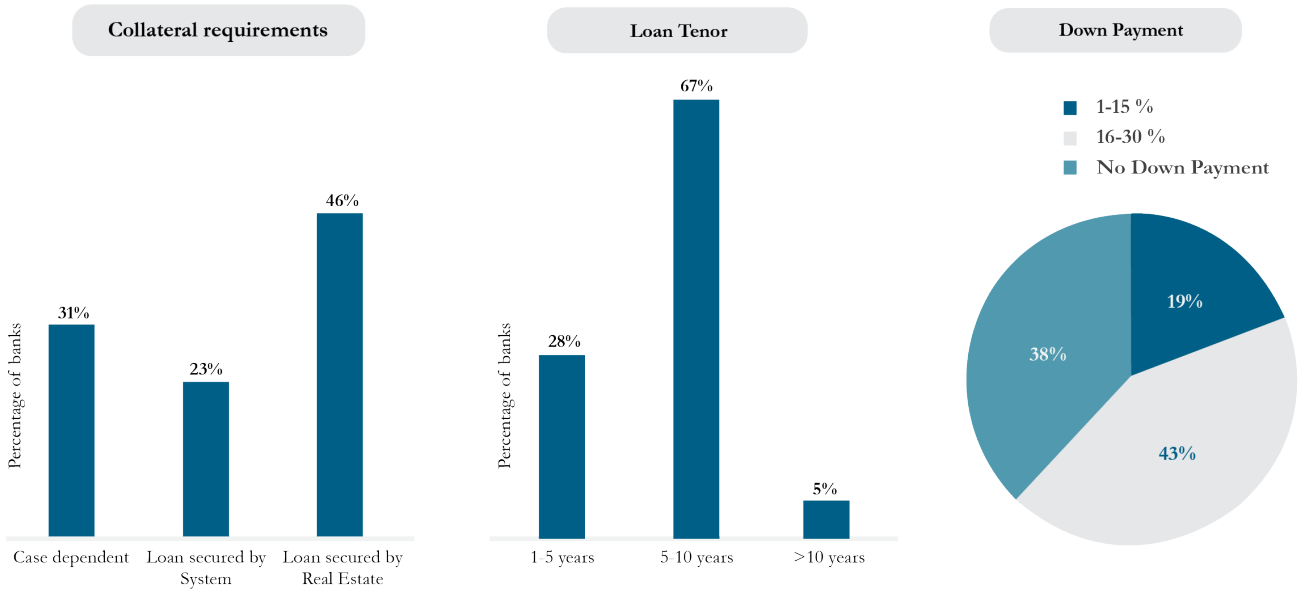

Figure 4: Breakdown data on securitization of loans. Source: Authors own calculations.

While standardization and securitization can increase efficiency and reduce risk— it limits the eligibility of applicants. So we do observe a distinct set of additional challenges associated with the concessionary green lending facility in terms of a heavily regulated process characterized by extensive stringent eligibility criterions in terms of collateral requirements and upfront payments, thus undermining the desired outcome of a more balanced distributional gain and transformation.

Significant lack of interest from banks—Perceived concerns regarding green lending

The transition towards financing green products necessitates a departure from conventional lending norms. However, Electric Vehicles (EVs) and distributed Photovoltaic (PV) systems possess unique characteristics, including higher upfront costs, extended payback periods, and evolving regulatory landscapes. These factors compel financial institutions to reassess their risk assessment processes, collateral valuation methods, and loan structuring methodologies. And so, despite the potential benefits of renewable energy investments, financial institutions may hesitate to engage in green lending. This is also what we observe in our study.

Our interviews with the banks (see Figure 5) illustrate the prevailing perception among the majority of banks with regard to renewable energy technology. According to majority banks, green lending entails high risk and offers low returns. This apprehension stems largely from concerns about default risk, the absence of secondary markets for resale value, and high transaction cost of processing loans. Further, since under the SBP facility, green product loans are offered at concessional rates—this further dissuades financial institutions due to the perceived low returns. These concerns within the financial institutions—who are the key incumbents when it comes to providing capital and channeling loans under the concessionary facilities—act as significant barriers, limiting the widespread adoption of the Scheme.

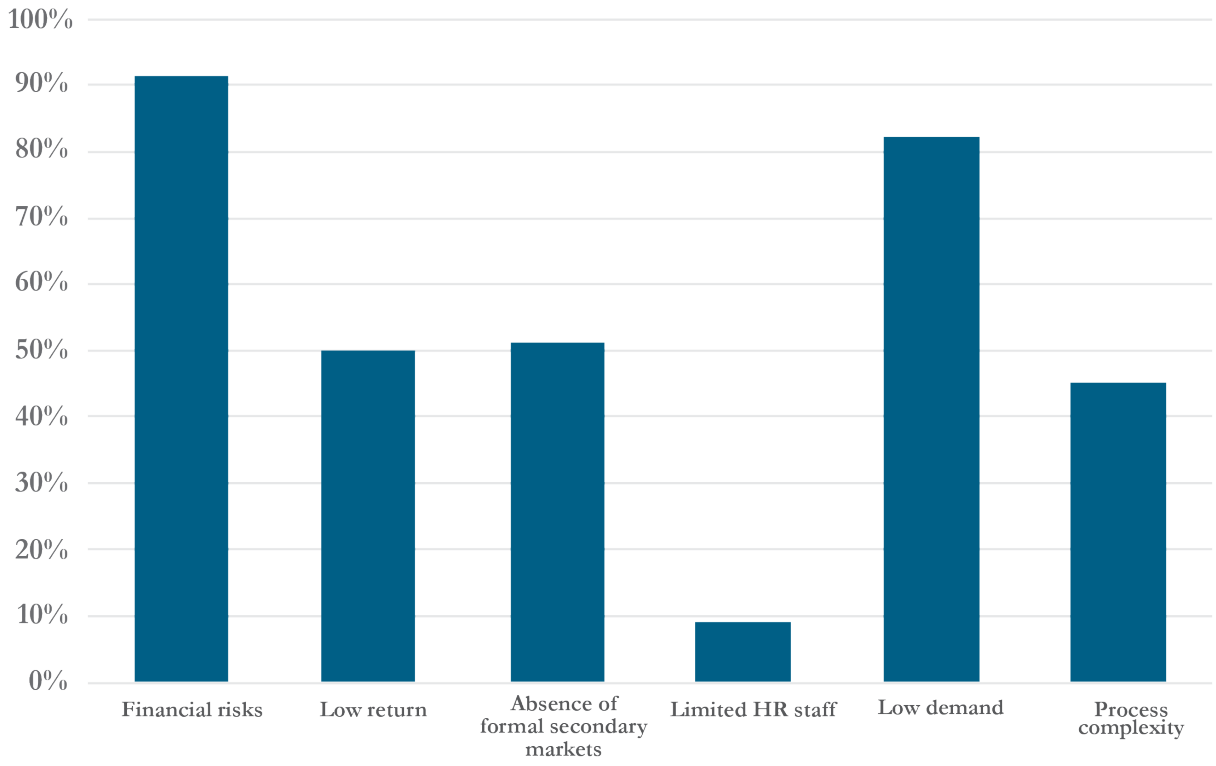

Figure 5: Perceived concerns of banks with regard to green lending. Source: Authors own calculations.

Conclusion & Policy Recommendations

The analysis reveals that distributed solar PV (DSPV) and electric vehicle (EV) lending in Pakistan is still in its infancy. Despite the increasing prominence of sustainable energy solutions and the growing global emphasis on transitioning towards cleaner sources of power, the reluctance of the majority of banks to extend financing for EVs and DSPV systems indicates a noteworthy gap in the market. This shortfall not only highlights a missed opportunity for financial institutions to align with environmentally conscious consumer preferences but also underscores the broader hesitance within the banking industry to embrace and promote sustainable energy initiatives.

In a nutshell, we do see a major delivery gap where green lending options are available, but implementation and access issues persist. In the case of EVs, the concessionary financing facility has yet not been implemented. In the case of SBP REF Scheme, majority banks in Pakistan are uninterested at best, and unaware at worst, to introduce lending under the facility. Arguably, the voluntary regulations for the implementation of the Scheme have been a key factor in its partial introduction. Resultantly, majority banks have not yet embraced it and so distanced themselves from renewable financing while continuing to relocate their services in products which has low risk and high profit. Whereas those who have engaged in solar lending have designed operational processes and its features—in terms of administrative processes, eligibility criterions, collateral valuation etc—such that it has reversed the policy support for a more equitable distribution. While in the wake of all these challenges, no proper monitoring or evaluation mechanism for assessing the progress of financing under the facility has been developed. A decentralized clean energy transition drive (co-)owned by consumers necessitate removing these barriers in a systematic way.

To address these challenges, a nuanced and adaptable approach is needed, shifting towards ecological sustainability and prioritizing environmental and societal benefits alongside financial returns. The transformation towards a more capital-intensive energy system through clean energy investment therefore demands careful consideration of innovative financial strategies that effectively address all these challenges to ensure the speed and affordability of this shift.

To enhance the effectiveness of green lending and accelerate the transition to sustainable energy, the following policy recommendations have been proposed which also include lessons from peer regional countries that Pakistan can undertake

Revisiting Regulatory Frameworks: The regulatory framework governing green financing needs reconsideration to ensure a people-centered transition. This entails strengthening existing regulations through improved taxonomy, obligatory financing, and effective implementation. Countries like Bangladesh, India, and China have already revised their regulatory frameworks governing renewable energy financing schemes. For instance, the central bank of Bangladesh, Bangladesh Bank, has extended schemes for green products offering attractive interest rates of 5-6% with a tenor exceeding 8 years, featuring a broader taxonomy and flexible terms.[6] Similarly, India's Faster Adoption and Manufacturing of Electric Vehicles (FAME) provides direct subsidies and focuses on establishing public charging stations, promoting widespread adoption of eco-friendly transportation.[7] Similarly, in Thailand , the Government Savings Bank's scheme for Solar Rooftop, EV Cars, and Energy Efficient Appliances, with fixed interest rates and a unique 'Solar to Zero' initiative offering 0% interest with no collateral, showcases an innovative financing approach.[8]

Confidence-Building Measures: To address banks' concerns regarding risks of defaults in renewable energy financing, confidence-building measures are essential. This encompasses establishing effective risk-sharing mechanisms and formal secondary markets for renewable energy products. Collaborative efforts aimed at developing robust risk assessment frameworks and cultivating vibrant secondary markets for green assets are paramount. By pioneering green finance, Pakistan can not only surmount the barriers to sustainable transitions but also pave the way for a resilient and prosperous future where economic growth aligns with environmental stewardship. In Germany, leasing is an innovative method to finance PV systems for self-consumption. Common in single-family residences and small to medium enterprises, it transfers operational responsibility and risks to the lessee, enabling qualification for self-consumption and exemption from the entire EEG surcharge.

Innovative Financing Mechanisms: Drawing from international best practices, Pakistan can explore innovative financing mechanisms such as green bonds, revolving funds, and specialized financing models with favorable terms to encourage participation. Thailand's Energy Efficiency Revolving Fund Collaboration uses green bonds and revolving funds as crucial risk mitigation tools. Similarly, in the global north, Germany and Sweden provide exceptional examples to follow in the context of green product financing. Swedish banks like SEB and Swedbank offer green mortgages with favorable terms for energy-efficient homes, providing lower interest rates for properties meeting specific environmental

6 https://www.tbsnews.net/economy/interest-rates-under-refinancing-scheme-green-products-decrease-464390

7 https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1942506

8 https://www.pattayamail.com/thailandnews/gsb-launches-loan-offer-for-solar-rooftop-installations-430957

standards. SEB's fixed 5.9% interest rate supports solar panels and energy-efficient heating equipment while offering no collateral, immediate fund transfer, special terms for vehicle purchase, and a 7.9% rate for all other eco-friendly investments, incentivizing consumers towards sustainable choices and a diversified scope.[9] In Germany, the Solar PLUS program, open to individuals, businesses, and community organizations, offers financial incentives, including a fixed 0.095 EUR/kWh feed-in tariff for 20 years, a one-time grant (up to 2,000 EUR), and a low-interest loan with a 0% rate for the initial five years, supporting solar financing.[10]

Public-Private Partnerships: Collaborating with international organizations and private entities can help Pakistan in incubating funding platforms, leveraging international funding, and implementing guarantor models for risk-sharing in EV charging infrastructure and DSPV projects. The Bangladesh's IDCOL SHS (solar home system) program employed a public-private partnership model with a dedicated credit line from international financial institutions and extending social collateral to consumers as a risk mitigation tool[11] . In India, the Surya Shakti Scheme and the Grid Connected Solar Rooftop Program exemplify effective public-private partnerships and a balanced approach, offering practical models for sustainable development.[12] Lessons include incubating funding platforms, leveraging international funding, and implementing guarantor models for risk-sharing in EV charging infrastructure.

Monitoring and Evaluation: Rigorous monitoring and evaluation mechanisms should complement green lending regulations to ensure effective implementation. Integrating monitoring and evaluation as integral components of regulatory frameworks enhances transparency, accountability, and effectiveness in driving the green lending agenda forward. Like Bangladesh, using the CAMELS rating system ensures transparency and performance assessment while also incentivising financial institutions to actively participate in green banking activities.[13] Valuable lessons for Pakistan include the need for a financial intermediary, rating mechanisms, and unique collateral mechanisms to enhance participation.

By implementing these policy recommendations, Pakistan can overcome the challenges associated with green lending, promote widespread adoption of renewable energy solutions, and contribute to a sustainable energy future.

9 https://www.swedbank.lt/private/credit/loans/solar?language=ENG

10 https://www.pv-financing.eu/wp-content/uploads/2016/04/PV-financing_WP3_D3.5_FS-guidelines_GERMANY_EN.pdf

11 https://idcol.org/home/solarv

12 https://suryashakti.bank.sbi:5443/SSC/login

13 https://www.bb.org.bd/pub/special/greenbankingbd.pdf