Policy Brief

partnership for economic policy pep

No. 286 October 2024

How can MDBs better support green energy transition in Pakistan?

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Key messages

- Economic Impact: Transitioning from coal-based electricity generation to solar energy by 2030 could boost Pakistan's long-term GDP by over 11%.
- Investment Requirements: Achieving this transition requires approximately $8 billion in public investment.
- Emissions Reduction: The solar shift could reduce CO_2 emissions by over 45% in the coal sector, 40% in the oil sector, and 9% in the gas sector by 2030.
- MDB Support: Multilateral Development Banks (MDBs) can provide green loans, favorable terms, and guarantees to reduce investment risks, mobilizing local capital through a green bond market.

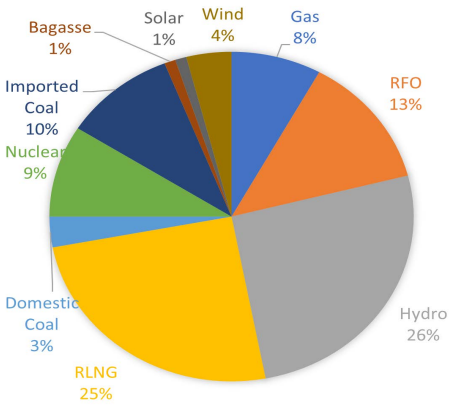
Energy crisis and solar solution in Pakistan

Pakistan faces a pressing energy crisis that threatens both economic stability and environmental sustainability (Khan and Ahmed 2015, Zeshan and Ahmed 2013). As part of its commitment to a sustainable energy future, the government aims to generate 30% of its electricity from renewable sources by 2030.

The solution is clear: an urgent transition to solar energy. Analysis shows that by shifting from coal to solar power, Pakistan stands to 1) boost its GDP by over 11% by 2030, 2) slash CO2 emissions significantly, and 3) reduce dependence on costly fossil fuel imports.

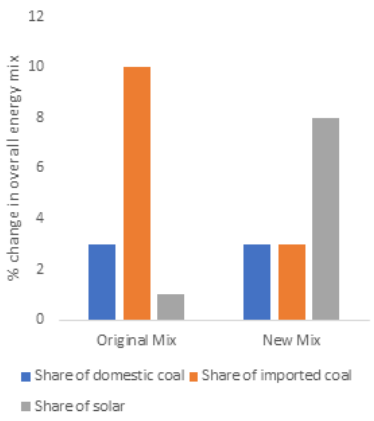
This transition isn't just an opportunity but a necessity. However, the challenge lies in the massive $8 billion investment required and the lack of comprehensive medium term policy provisions to attract this colossal amount.

Figure 1 Pakistan Fuel Mix, 2022



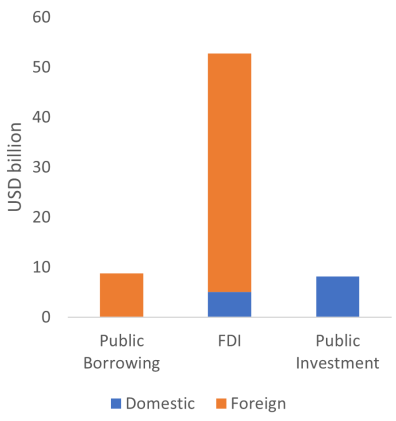
Source: Cheema et al. 2022

Figure 2 Proposed shift in energy mix by 2030



Source: Authors' calculations

Figure 3 Investment requirement by 2030



Source: Authors' calculations

Role of Multilateral Development Banks (MDBs)

MDBs can play a pivotal role in overcoming these obstacles. Indeed, MDBs are uniquely positioned to support Pakistan's green energy transition, particularly in the solar sector. Their involvement spans several critical areas:

• Financing and Investment: MDBs offer green loans and bonds with favorable terms, reducing risks for private sector investment in solar projects. They also help foster a green bond market, mobilizing local capital for sustainable energy.

• Technical Assistance: MDBs facilitate knowledge transfer by connecting Pakistani stakeholders with solar technology experts, promoting initiatives like solar panel recycling and waste management, and providing support for sustainable solar technology adoption.

• Policy Collaboration: Collaborating with the Pakistani government, MDBs help design regulatory frameworks that promote solar adoption while maintaining grid stability. This includes setting standards for recycling content and establishing producer responsibility programs.

Risk Mitigation: MDBs provide guarantees and insurance to attract private investment and address issues like currency fluctuations, making solar investments more appealing for smaller investors.

• Capacity Building: MDBs support training for government officials and local industry, empowering them to enforce environmental standards and build a skilled workforce for the solar sector.

Recommendations for the Ministry of Energy, Government of Pakistan

MDBs can actively support the Ministry of Energy and relevant departments in Pakistan by focusing on the following areas:

1. Innovative Financing: Provide green loans with terms that appeal to private solar project investors. MDBs could also support the development of a domestic green bond market, leveraging local capital for renewable energy initiatives.
2. Technical Support: Facilitate technology transfer and pilot projects, connecting Pakistan with global solar technology manufacturers and ensuring sustainable practices in solar panel recycling and waste management.
3. Regulatory Development: Work with the government to create a regulatory framework that incentivizes solar energy adoption while addressing grid stability. Establish standards for solar panel recycling and producer responsibility programs.
4. Risk Management: Develop risk-sharing mechanisms and insurance options to reduce the impact of currency fluctuations and encourage private investment.
5. Capacity Building: Provide training programs for government officials on monitoring and enforcing environmental regulations and support educational initiatives to develop a skilled workforce for the solar sector.
6. Coordinated Efforts: Enhance collaboration between MDBs and Pakistan's federal and provincial governments, facilitating South-South cooperation for knowledge sharing and best practices in solar energy adoption (see also Ahmed et al. 2013).

Conclusion

By following these recommendations, Pakistan can transition to solar energy, reducing its dependence on fossil fuels while contributing to global climate goals. MDBs will play a critical role in providing the necessary financial,technical, and policy support to ensure Pakistan's green energy transition is both immediate and sustainable. The regulatory environment that liberalizes domestic energy supply chain for greater competition can also be supported by MDBs (Ahmed 2023). Through this collaborative approach, Pakistan can achieve a sustainable and economically beneficial solar-powered future.

Road map

A phased implementation strategy is recommended to ensure a smooth transition:

1. Immediate Steps (0–6 Months):

- Establish a Solar Transition Task Force within the Ministry of Energy to draft a solar energy roadmap, setting specific targets aligned with Pakistan's Renewable Energy Policy 2030.
- Simplify regulatory processes with a "one-window" operation for all solar-related permits.

2. Short-Term Actions (6–12 Months):

- Begin upgrading the national grid to accommodate increased solar integration, with early investments in high-priority areas.
- Develop solar technology parks and announce incentives like tax holidays to attract manufacturers (Manzoor et al. 2019).

3. Medium-Term Objectives (1–3 Years):

- With MDB support, build a robust green bond market and initiate pilot financing projects.
- Establish quality standards for solar equipment to boost reliability and consumer confidence.

4. Long-Term Goals (3–5 Years):

- Launch sustainable waste management initiatives, including recycling programs for solar panels.
- Implement a monitoring system to assess the economic and environmental impact of solar adoption, refining policies as needed (Ahmed 2017 and Ahmed & Maaz 2022).

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This work wa carried out with financial and scientific support from the Partnership for Economic Policy (PEP) through funding provided by the Center for Global Development.

To find out more about the scientific research methods and findings, read the full PEP working paper.

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