





How Can Pakistan Transition Towards Renewable Energy?

Setting the Context

In 2023, fossil fuels made up

of Pakistan's installed fuel-wise capacity

Source: Pakistan Economic Survey, 2024

Environmental Consequences

> Disrupts Pakistan from Achieving

Reduction in Carbon emissions by **2030**

Source: Pakistan's Updated Nationally Determined Contributions, 2021

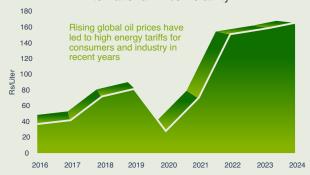
petroleum products imported

total imports

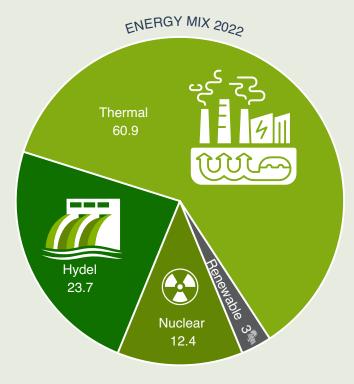
Source: Business Recorder, 2023

Pakistan's Oil Prices

International Price Volatility



Source: Oil and Gas Regulatory Authority, 2024



Source: Ministry of Energy (Power Division), 2022

■ Thermal ■ Hydel ■ Nuclear ■ Renewable

Approximately

of Pakistan's annual GDP is spent on capacity payments

Source: NEPRA, 2022

Key Challenge for the Energy Sector

Pakistan is locked into multiple long term (up to 2030 or 2040) and fixed Independent Power Producer (IPP) contracts with steep tariffs. These contracts lack flexibility in terms of innovation, market shifts, or technological advancements in energy generation. The government remains obligated to purchase power from IPPs and make fixed capacity payments. leading to a fiscal drag.

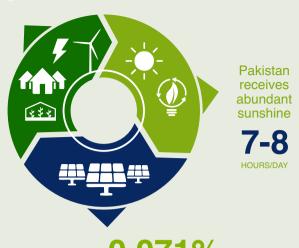
Potential to Go Green

Potential Benefits From Sustainable Energy



Source: Achieving Sustainable Energy, World Bank Group, 2023





By utilizing **U.U71%** of its total area for solar power generation, Pakistan could have met its **2020** electricity demand.

Source: World Bank, 2020

Enabling the Green Transition - A Way Forward

CHALLENGE

 The primary constraint to solar power adoption is the high initial cost of capital a significant challenge for investment in Pakistan.

SOLUTION

 Expand the size and scope of financing schemes to incentivize investment in solar power generation needs expansion as solar power installation costs decrease globally.

CHALLENGE

 The current national grid infrastructure in Pakistan faces limitations in integrating renewable energy sources efficiently.

SOLUTION

 Improve and expand its national grid transmission system to handle a greater share of renewable energy.

CHALLENGE

 Currently interest rates in Pakistan hover above 20%, a stark contrast to its neighbours, such as India (8%) or Vietnam (7.5%).

SOLUTION

• Leverage mechanisms for accessing international climate finance while providing policy support for solar power generation which can also result in the early retirement of thermal power plants, promoting a transition towards clean energy.

CHALLENGE

 A key limitation in solar power generation is the long-term nature of current fossil-fuel power plant contracts which limit the space for adding solar power to the generation mix.

SOLUTION

- Establish a competitive market for electricity that ends the singlebuyer model and incentivizes production of cheap, renewable energy.
- Encourage government and private investments into renewables, explore opportunities for international climate finance and renegotiate terms of existing fossil-fuel plants.