

Energy Crisis in Pakistan

Introduction:

Pakistan has long been grappling with multiple crises, including political instability, constitutional issues, security challenges, and severe economic downturns. Among these, the energy crisis stands out as one of the most urgent. The country struggles with inadequate electricity supply, leading to prolonged power outages, alongside rapidly rising electricity prices. This crisis severely impacts industries, agriculture, and daily life, necessitating immediate attention to mitigate its consequences on the nation's economy and well-being.

Operation of the Energy Sector:

The energy sector in Pakistan relies heavily on hydrocarbons for electricity generation, with oil, gas, and coal being the primary sources.

- **Oil Consumption:** In 2022-23, Pakistan consumed approximately 588,000 barrels of oil per day, of which 83,000 barrels were produced locally, and the remaining 500,000 barrels were imported.
- **Gas Usage:** The daily consumption of natural gas is about 1 billion cubic feet (bcf), with 36% being locally produced and the rest imported.
- **Coal Production:** In December 2021, 7.53 million tonnes of coal were produced, with 9,000 MW of electricity generated from coal – 2,500 MW from local coal, and the rest from imported coal.

Key Energy Providers:

- **Importers:** PSO (Pakistan State Oil), Shell, Attock Group.
- **Producers:** OGDCL, POL, MOL.

Hydrocarbon Distribution: PSO is responsible for distributing refined oil to various sectors like electricity producers, fuel pumps, and industries. Unrefined oil (crude) is sent to refineries such as Attock, Karachi, and Hub refineries.

Gas distribution is handled by:

- **Sui Southern:** Serving Sindh and Baluchistan.
- **Sui Northern:** Serving Punjab, KP, AJK, and GB.

Electricity is managed by the **NTDC (National Transmission Dispatch Company)**, which oversees the supply from the generator to the local grid. Local distribution is managed by **DISCOs** like IESCO, LESCO, PESCO, FESCO, HESCO, and K-ELECTRIC.

Regulatory Bodies:

- **NEPRA (National Electric Power Regulatory Authority):** Oversees decisions related to electricity.
- **OGRA (Oil & Gas Regulatory Authority):** Oversees decisions related to oil and gas.

Problems in the Energy Sector:

1. Loadshedding:

- Pakistan has faced a severe energy shortage, especially in summer months. In 2023, the shortfall reached over 7,000 MW, and load shedding in urban areas lasted 4-5 hours daily, while rural areas saw 10-12 hours of load shedding.
- The main causes of load shedding include:
 - **Delayed bill recovery:** Areas with lower recovery rates experience more load shedding.
 - **Payment delays to IPPs:** The government's failure to pay Independent Power Producers (IPPs) leads to a reduction in electricity generation.
 - **Dollar shortage:** Pakistan's foreign exchange reserves are insufficient to import the required oil, gas, and coal, thus impacting power production.

2. Expensive Electricity Generation:

- Pakistan produces the most expensive electricity in Asia and the third most expensive globally. The cost varies based on usage:
 - Domestic electricity costs range from 24 to 72 PKR per unit, depending on the slab.
 - Commercial users pay between 48 to 90 PKR per unit.
- The primary reason for expensive electricity is the reliance on imported hydrocarbons like oil, LNG, and coal. The global price surge, especially after the Ukraine war, combined with the depreciation of the Pakistani rupee, has further exacerbated the cost.

3. IPP Agreements and Overcapacity:

- Agreements with IPPs have locked Pakistan into paying for a capacity greater than the actual demand. In the summer of 2023, the maximum demand was around 28,000 MW, while in winter it dropped to 14,000 MW. Yet, the government is obliged to pay IPPs based on the agreed maximum capacity, which leads to substantial payments regardless of actual usage.

4. IMF Conditionalities:

- The IMF has imposed conditions for financial assistance, including

the removal of electricity subsidies, an increase in fuel prices, and the devaluation of the Pakistani rupee. These measures have contributed to the hike in electricity prices.

5. Transmission and Distribution Losses:

- The outdated transmission infrastructure leads to significant losses, with around 17% of electricity lost in transmission – one of the highest in Asia. Additionally, there is a 16% loss in the distribution system, largely due to theft (primarily through the Konda system), especially in industrial and rural areas.

Implications of the Energy Crisis:

1. Impact on Industry:

- The industrial sector, especially textile, leather, and sports goods production, has been severely impacted by the energy crisis. The rising cost of electricity has made it difficult for Pakistani products to compete in international markets, leading to a decline in exports. Over 200 industries have closed in the past three years due to energy shortages and increased production costs.

2. Impact on Agriculture:

- Agriculture, particularly farming reliant on tube wells and dig wells powered by electricity, has faced setbacks. The increasing cost of electricity and the erratic supply of power have significantly raised the cost of agricultural production, leading to higher prices for crops.

3. Balance of Payments Crisis:

- With increased imports of hydrocarbons and the rising cost of electricity, Pakistan faces a growing balance of payments crisis. The energy sector's inefficiencies contribute to a larger trade deficit and depleting foreign reserves.

Conclusion:

The energy crisis in Pakistan is a multifaceted problem involving over-reliance on imported hydrocarbons, outdated infrastructure, excessive agreements with IPPs, and inefficient management of resources. The consequences of these issues are far-reaching, affecting industrial growth, agricultural productivity, and the national economy. Immediate reforms are required to reduce energy imports, improve efficiency in energy generation and distribution, and address the financial burdens of IPP agreements. Without addressing these fundamental issues, the country will continue to face crippling energy shortages and rising costs, severely hampering its overall economic development.