

Question 3

Expensive agreements with IPPs, Overwhelming dependency on hydrocarbons, Line and other losses in the transmission and distribution sector have caused massive hike in electricity prices having far reaching implications on industry, Domestic and other crucial sectors. Analyse the statement and give possible recommendations.

Analysis of IPPs

Start with the summary of the answer as introduction

IPP, Independent Power Producer, is a private sector company in Pakistan, ~~that~~ that produces or generates electricity and sell it to government and other customers/consumers. These companies generate electricity since 1994 in Pakistan. They utilize a variety of energy sources, including thermal (natural gas, oil, coal), hydroelectric, and renewable sources (wind, solar) etc. Recently, some ~~issues~~ ~~problems~~ ~~disputes~~ happened between IPPs and governments regarding electricity, circular debt, capacity payments, transmission and distribution losses, fuel supply problem etc. Hence, some analysis which we will discuss regarding IPPs.

1) Expensive agreement with IPPs:-

Agreement with IPPs include Capacity ~~including~~ ~~payments~~ ~~regardless~~ of utilization of electricity which is burdening the government and consumers. From this agreement poor people were affected, due to high price of electricity. However, in 1994 and ~~2000~~ ~~2001~~ Pakistan's ~~1994 and~~ power policies locked the government into fixed Capacity Payments.

For Example:- The Hub Power Company (HUBCO) and other IPPs receive payments even when plants are idle,

Increasing electricity costs-

2) Dependency on Hydrocarbons:-

Our energy is mainly based on hydrocarbons. The biggest importers of hydrocarbons in Pakistan are

- Pakistan state oil (PSO)

- Attock

- Shell

Apart from these three major importer of hydrocarbons - there are others minor importers of hydrocarbons as well

- Atlas Autos (PVT) limited - Citropak limited etc.

There are two types of hydrocarbon 1st is crude oil and 2nd is refined oil which are imported by

Pakistan. Pakistan mostly imports oil from UAE, Abu Dhabi and Saudi Arabia either in the form of crude or refined form of oil. Pakistan State oil (PSO) also imports gas in the form of LNG. Around 60% of Pakistan's energy mix depends on imported LNG, oil, and ~~coal~~ coal.

However, dependency on hydrocarbons refers to a heavy reliance on fossil fuels such as oil, natural gas, and coal for energy production. This dependency has several implications-

1) Price volatility:- Imported fuel prices are subject to fluctuation in the global market. **For Example:-** In 2022, prices were fluctuated due to geopolitical tension like Russia - Ukraine war or OPEC decisions can cause sudden spikes in oil and gas prices, directly in that directly increasing electricity production cost.

2) Foreign Exchange Constraints:-

By importing hydrocarbons places a significant burden on a country's foreign reserves. Pakistan spends billion annually on fuel imports, straining its foreign exchange reserves and increasing the trade deficit.

3) Environmental Challenges:-

The burning of carbon hydrocarbons emits greenhouse gases like CO₂ that contributing to the climate change, air pollution, and health problems.

Dependency on hydrocarbon requires reducing diversifying the energy mix with renewable sources like solar,

wind, and hydro power -

3) Transmission and Distribution Losses:-

The country's aging grid infrastructure leads to substantial losses that reduce the efficiency of power delivery. Another major problem is electricity power theft. In Pakistan, theft or Kunda System like practices occurs. Also, Pakistan faces approximately 17% Transmission and Distribution losses annually.

For Example:- In 2023, the K-Electric network reported losses impacting Karachi's Power Supply stability and affordability.

4) Industrial and Domestic Impact:-

High electricity costs make production more expensive than reducing the competitiveness of industries in global markets also they discouraging foreign and local investment and leaving households with less money to spend on other needs.

For Example:- High Energy Costs make Pakistan's textile exports less competitive compared to regional players like Bangladesh and India. For domestic users, frequent tariff hikes push many households into Energy Poverty.

Recommendations:-

To address the issues with IPP agreements and improve Pakistan's power sector, several steps can be taken:

1) Renegotiate with IPPs:-

Renegotiate existing agreements to lower high-capacity payments and adjust the return on equity to reflect circular debt.

2) Introduce Competitive Bidding:-

Introduce competitive bidding for new projects to secure better terms, lower costs, and increase efficiency, while ensuring transparency to build confidence.

Add more arguments in this part

Minimum description under a heading should be 5 lines

3) Diversification of Energy Sources:-

Diversify energy sources by investing in renewable projects like wind, solar and hydropower, and support the use of indigenous resources to reduce reliance on imported fuels.

4) Improvement of Contractual Flexibility:-

Improve contractual flexibility by including mechanisms for adjusting tariffs based on price changes and setting clear performance and maintenance standards.

5) Address Environmental Concerns:-

Address environmental concerns by enforcing strict environmental regulations and promoting cleaner technologies.

6) Enhance the regulatory framework:-

Enhance the regulatory framework by strengthening oversight and dispute resolution mechanisms.

7) Improve Financial Management:-

Improve financial management by tackling circular debt and developing balanced financial models.

8) Foster IPPs:-

Foster IPPs to leverage resources and share risks and rewards.

9) Investment in Infrastructure:-

Invest in infrastructure to upgrade transmission and distribution networks and enhance grid management.

10) Engage in long term planning:-

Engage in long-term planning by creating a comprehensive energy strategy and continuously monitoring and evaluating the sector's performance.

11) Reduction in system losses and wide spread theft

12) Investment in transmission network.

13) A shift towards cheaper renewable energy sources.

14) Government should Privatize the distribution Companies.

These measures can help Pakistan enhance the efficiency and sustainability of its power sector while balancing the interests of IPPs and the government.

Add and highlight references/examples against these arguments

Incomplete answer