INSTITUTE FOR POLICY REFORMS

IPR REPORT

August 2020

Energy and Power for all: sustainable, affordable, and reliable

About IPR

Institute for Policy Reforms is an independent and non-partisan think tank established under Section 42 of the Companies Ordinance. IPR places premium on practical solutions. Its mission is to work for stability and prosperity of Pakistan and for global peace and security. IPR operations are supported by guarantees from the corporate sector.

This report is a summary of an online panel discussion held by IPR on 15 August 2020. The speakers were:

- *Mr. Nadeem Babar, SAPM Energy and Minister of State*
- *Engineer Rukhsana Zuberi, Senator*
- *Mian Anjum Nisar, President FPCCI*
- *Dr. Saleem Ali, Professor University of Delaware*
- *Mr. Humayun Akhtar Khan, Chairman & CEO, IPR*

Moderator: Ashraf M. Hayat, IPR

Introduction

The goal of the panel discussion was to offer a common platform to policy makers, business representative, and academic expert to exchange ideas and build understanding on how to provide sustainable power and to build energy security.

4- Shami Road, Lahore Cantt, Pakistan

UAN:111-123-586

http://ipr.org.pk
'https://www.facebook.com/InstituteforPolicyReforms
https://twitter.com/IPR_Pakistan

Longstanding issues in the energy and power sectors impose a heavy economic and social cost on Pakistani businesses and citizens. Power outages and supply interruptions along with high cost of power are unresolved issues that have caused much harm to the economy.

Introducing the topic Mr. Humayun Akhtar Khan raised the issues that the sector faced:

- Availability of reliable energy and affordable power is critical for businesses to flourish and citizens to thrive. It is an urgent and vital area for the country to reform if Pakistan is to emerge out of its perennial economic challenges.
- Reforms are needed through the supply chain from selecting input options, raising domestic production, allocating to competing uses, bringing efficiencies in generation, and reducing distribution losses and revenue leakages.
- "Pakistan's power supply is one of the most unreliable in the world". In the World Economic Forum's Competitiveness Report 2019, Pakistan ranks 111th of 141 countries in access to electricity and 99th in quality of supply. And about one-third of our people have no access to power.
- Years of underinvestment in transmission capacity too is a limiting factor in reliable power supply. Similar constraints exist at the distribution stage.
- World Bank estimated that power shortage resulted in a loss of 6.5% of GDP. Businesses have suffered, exports have taken a hit. Lack of power effects citizen welfare. Studies show that households connected to the grid have a host of secondary benefits. They have higher incomes with better education outcomes and women employment rates.

- Energy is a major source of environmental degradation. Pakistan has high levels of air pollution. Fossil fuel–based power is an important source as is high vehicular emissions. We all know about the urban smog or high ground level of ozone that builds up in winter months. Our energy consumption patterns have also caused greenhouse emissions.

Mr. Nadeem Babar

Observations:

- Historically, the power sector has operated as a controlled monopoly by the state. Private power generators were only introduced 20 years ago. Tariffs are determined entirely by the state without allowing open market competitiveness. The basis of tariff is cost plus, because of which efficiency in generation takes a back seat.
- The government provides subsidies in order to meet the gap between revenue and cost. It is a blanket subsidy without having a focused target.
- About 43% of Pakistan's power generation relies upon imported fuels. As the exchange rate fluctuates, the cost of imports rises further contributing to increasing the costs of power generation.
- There are substantial losses due to leakage, non-recovery and theft.
- Energy production has not risen in the last several years, despite growing demand. Furthermore, gas production is declining at a rate of 9.5% annually. The supply side needs to grow to meet the rising demands of an increasing population.

Recommendations:

- The power sector should be opened up, and the government monopoly should be broken. Regulatory reforms should be instituted to create an open trading environment for electricity. Market forces of demand and supply should be allowed to regulate the prices, and instill competitiveness and efficiency within the sector.
- The government plans to bring about changes to the fuel mix. Domestic sources of energy

will be developed, using Thar coal and hydroelectric power plants. By 2025 the government plans to use 60-75% of domestic inputs to generate power.

- Old defunct plants must be shut down, and the existing oil refineries must be upgraded. To address the growing problem of air pollution, the government will be improving the quality of fuel being imported. Pakistan has been importing high sulphur fuels, (Euro Standard 2 with 500 parts per million (ppm) of sulphur, and even higher sulphur levels). From September 1st 2020, all petrol imports will have to comply with Euro Standard 5, which is a low-sulphur fuel reducing emissions to less than 50 ppm). By January 1st, 2021, all diesel imports will have to comply with Euro Standard 5.

- Piped gas is only available to 28% of the population. More people rely upon LPG, which is priced at a higher rate. The cost of LPG must be lowered and its availability across the country should be increased.

- Losses due to non-recovery, leakage and theft must be addressed. Better technological systems should be implemented to monitor the consumption and delivery. The writ of the state must be established in order to prevent theft and further loss.

- Untargeted subsidies should be revised and replaced by targeted subsidy structure. The government is using the Ehsaas program and other collected data to determine the deserving sections of the population to whom the subsidy should be targeted towards.

- More private energy terminals should be set up. Trading in oil should be by paying a toll to access the pipelines, and they may resell. This will also force state-run companies to become more efficient and competitive.

- Supply must be increased to reduce costs and to meet the increase in demand. Energy ministry's SARA Pakistan programme offers energy for all. The S stands for sustainable, the A for affordable, R for responsible use and conservation, and A for availability, which translates into reliability.

Senator Rukhsana Zuberi

Observations:

- The government should increase the share of renewable energy, instead of boosting coal fired generation. The latter brings major environmental consequences.
- Solar power is now more affordable than it has been previously, and the government has not announced enough initiatives to popularize solar power.
- There is no integrated planning or coordination among ministries and departments.
- There is an apparent lack of transparency in the pricing structure.

Recommendations:

- Government should prioritize efficiency and conservation. Currently public buildings are inefficient power guzzlers. There should be standardized practices across government buildings to implement efficient, low-energy consuming lighting and heating/cooling. Given the visibility of public buildings, they should act as an example for others to follow.
- The pricing structure must also be reviewed and made more transparent as there are hidden and unexplained costs. Making it more transparent would be more helpful for the consumer.
- The ministries of Science and Technology and Engineering departments should be engaged to work on research and development. We must be increase domestic reliance on equipment and support services.
- The government must work fast to legislate and carry out effective reforms to ameliorate the burden on the people of Pakistan who have long borne the high costs of power, and have suffered from shortages in power and unreliable supply.

Mian Anjum Nisar

Observations:

- Pakistan's industries have suffered greatly due to inconsistent power supplies and shortages. Within the region, the power costs are the highest, making it difficult for Pakistani producers to be internationally competitive.
- Power supply providers (WAPDA, KE, DISCOs) are leaving faulty supply feeders unmonitored, leading to unchecked tripping and outages instead of maintaining them. If the power trips, the entire factory line process is halted causing delays with heavy costs. Line losses are estimated to be as high as 35%
- There appears to be a lack of a standardized rate sheet with wildly fluctuating rates across IPPs.

Recommendations:

- Power costs must be brought down to at least the same rates as those in the region to allow Pakistani products to have a fighting chance in the market, and for production, jobs, and economy to grow.
- The power supply providers must ensure consistent supply and put an end to frequent outages. Supply feeders must be regularly checked and maintained to ensure that they are running properly, not overheating, or breaking down. Line losses need to be curtailed.
- The time to enact reforms is now. For far too long, the industries have suffered due to exorbitant power costs pushing up operating costs, causing factories to operate at lower capacity, and less job creation. Otherwise the industries will not be able to survive, further jobs cannot be created, Pakistani products will remain uncompetitive and the trade deficit will rise, causing the economy to retract.

Dr. Saleem Ali

Observations:

- Pakistan has a highly developed institutional structure when it comes to energy planning and transmission.
- In the need to be more self-reliant when it comes to energy production, the government is becoming less efficient.
- There is a need for smart grids and to improve the pipelines in areas of energy density. The pipeline infrastructure deserves more attention.
- During the winter or other times when the demand for power is low and the supply is consistent, there is a disparity between demand and supply.

Recommendations:

- There needs to be a systems approach from the point of view of energy density and efficiency. The government should look into where and how it can source the raw materials for its power generation most effectively. As it builds its self-reliant capabilities to become more resilient, it simultaneously must explore and build better international alliances to obtain the required resources at cost-effective prices.
- During the period of low demand, the government can sell the excess electricity to neighbouring countries. This can generate goodwill regionally for Pakistan via energy diplomacy.
- Smart grids should be developed where certain areas can hold large storage capacity where there is low demand and high supply. This has previously been done in other parts of the world, notably Nigeria, which shares some economic similarities with Pakistan. It has previously been carried out experimentally, on a smaller scale, but it potentially be scaled up to a larger scale to be able to store power, to prevent wastage.

- The pipeline infrastructure must be considered carefully. Maintenance requires high costs, and the focus should be on areas of energy density. To connect remote areas that are far-flung would be an act of political good will, but not one of economic efficiency.
- We must remind ourselves that prioritizing the energy sector is of utmost importance. According to a ranked list of global problems drawn up by Nobel Laureate Richard Smalley, people ranked energy as the largest problem to be addressed. Energy ranked above food, and water, and education and poverty. This should remind the government of the urgency of the task at hand.