Energy Crisis in Pakistan: Socio-Economic Implications and the Way Forward

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**ABSTRACT**

Pakistan has been trapped by a blend of problems such as political chaos, economic turmoil, social unrest, religious extremism, rampant corruption, unemployment, pervasive poverty, child labor, moral degeneration, etc. The energy crisis has added fuel to the fire; it has created many more socio-economic issues for the whole nation. This research study has highlighted the impact of the energy crisis in Pakistan particularly on its society and economy. It has enunciated that the energy crisis has deteriorated the social setup in Pakistan as it has disturbed the domestic routines, institutional schedules, health facilities, transportation system and educational procedures. Similarly, the crisis has pushed Pakistan into an economic decline. Most of the local and foreign investors have migrated to other states due to the non-availability of electricity, gas and petroleum products. Resultantly, Pakistan is experiencing the lowest ebb of Foreign Direct Investment (FDI). Unannounced load-shedding has not only discouraged the industrialists but also has decreased the ratio of production- a severe setback to the rate of exports. Non-availability of energy has decreased the ratio of agricultural productivity that has a significant share in the gross domestic product (GDP) of Pakistan. The cottage industry has also fallen victim to the energy crisis. In this way, there is a restrained flight of foreign capital to the country. In the end, the study has recommended some policies which can be formulated and practiced by the ends of both the government and the public to discard the energy crisis.

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1. Introduction

Today, energy has become one of the most significant needs of man. Dwelling, trade, agriculture, industry, transport and even every range of human activity revolves around energy. In return, energy has played a crucial role to overcome fundamental socio-economic issues including poverty, disease, hunger, illiteracy and environmental degradation. In short, energy is the backbone of all human activities. Its demand has increased with the evolution of civilizations particularly due to a dramatic increase in population, modernization and urbanization. Electricity is worth mentioning here as an important form of energy in modern times that has revolutionized the world. It has supported man to settle his social and economic problems quite easily. Man is trying to make the right use of available natural resources to boost his status along with preserving the environment (Khan, Begum & Sher, 2011).

The next question is where energy can be obtained? It is extracted from various natural and artificial resources which can be classified into fossil fuels, nuclear power and renewable energy. Scientifically, fossil fuels are the deposits of the organisms once living in the world; consisting of Carbon and Hydrogen bonds. These are further categorized as coal, oil and natural gas. Fossil fuels are much more expansive for the sake of energy production. Therefore, most countries are trying to replace these fuels with cheaper resources. Nuclear energy is obtained through chemical reactions known as nuclear fission and nuclear fusion. The latter is claimed as future technology as all of the nuclear power comes from this reaction. Resources of renewable energy are natural ones and cheaper as compared to the earlier ones. These resources include wind power, solar energy, hydropower, biomass energy and geothermal energy. According to an author, until 2011, renewable energy resources were meeting almost 13.5 percent of the global primary energy requirements (Khan, Begum & Sher, 2011). In view of the nature of all three mentioned resources of energy, the renewable resources should be selected on a priority basis as these are easily accessible and environmentally friendly.

Among all the mentioned resources, when the shortage of oil, natural gas, electricity and other natural resources occurs it is known as the energy crisis. Under the process of globalization, the world has faced many problems and the energy crisis is significant among these. The crisis has covered many countries and caused an irreversible loss to their social transformation and economic growth. Anywhere in the world, energy is supposed to be the backbone of an economy which plays an important role in improving the social structure and erecting an economy on a strong basis. But, when a nation undergoes an energy crisis it witnesses a negative impact on its social and economic spheres especially. The public faces difficulties in maintaining their daily routines at their houses, educational institutions, hospitals, traveling and communication. From an economic perspective, they observe lower agricultural yield, decreased industrial products, lower Gross Domestic Product (GDP), higher inflation, unemployment and poverty (Naseem and Khan, 2015).

Unfortunately, Pakistan lies on the list of those states which are experiencing the worst form of the energy crisis. Almost for three decades, its political elite has not made satisfactory efforts to generate energy despite population growth, economic uplift and soaring demand. Moreover, power theft and line losses due to outdated infrastructure have worsened the situation. With time, energy demand is increasing and seems to touch the higher levels in the years to come. Figure 1
presents a clear picture of energy demand in Pakistan from 2002 to 2030. The figure predicts a lower growth of energy as compared to the higher increase in demand.

![Supply Demand Gap in Pakistan 2002-2030](image)

**Figure 1: Supply Demand Gap in Pakistan 2002-2030**

Multiple causes have created so many hurdles in the smooth running of the energy sector and have not allowed the sector to meet the demands of energy. These may include an imbalance in the energy mix, lesser utilization of the local energy resources, a restrained investment in power, political instability, failure of the energy policy and high costs for energy production. A political confrontation over mega-energy projects, corruption among the producers and consumers and traditional and out-dated infrastructure to exploit the natural resources have even worsened the situation (Kanwal, Khan & Rauf, 2020). Some of these causes are being analyzed here to assess the restrictions and hurdles in the performance of the sector.

First and foremost, rampant corruption lies are the major cause behind the emergence of the energy crisis in Pakistan. The practice can widely be seen in the oil and gas industry which is often known to be prone to corruption. The corruption in licensing processes, permit applications and the subcontracting of parts of a company’s operations has become the order of the day. According to various reports, in 2017, national and multinational oil and gas companies had embezzled 134 billion Pakistani rupees from 2012 to 2015. The companies which were awarded oil and gas exploration licenses in 2002 neither had invested money nor had constructed oil wells (Jenkins & Kukutscka, 2018). So, in 2018, the National Accountability Bureau (NAB) was investigating 19 cases of alleged corruption, abuse of authority and misappropriation in the sector. All the cases illustrated the range of integrity risk and included:

1. “Collusive contracting by officials at Pakistan State Oil.
2. Manipulated evaluation reports in which assets acquired by the state-owned enterprise Pakistan Petroleum Limited were enormously overvalued in exchange for kickbacks.
3. The misuse of public money to pay exorbitant salaries to favored officials.
4. Illegal appointments and promotions in regulating agencies” (Jenkins & Kukutscka, 2018).

Similarly, governance challenges in the energy sector have pushed Pakistan into a chaotic situation. The efforts of the government as well as the NEPRAs, regarding an improvement in the power sector, have not been very successful. The government, political and other pressure
groups have continued to interfere in the smooth working of the companies and their management’s authority has been curtailed. Resultantly, the poor operational and technical performance of these companies did never allow the power sector to flourish in Pakistan. This sector has not seen improvement in key performance indicators. It has not reduced the losses and theft, and efficiency in public sector generation plants as quickly as they have been examined in the neighboring states (Aziz & Ahmad, 2015). Further, the energy sector in Pakistan is marred with fragmented energy governance. Almost six ministries and a substantial number of ancillary organizations are involved to manage and regulate the sector. The collusive behavior of these players does not allow the private entities to enter this management. The case of the private sector in this regard can be analyzed in the following way:

“Even with certain profits for the existing private power sector entities, it is difficult to expand and raise investment owing to slow progress of power policy implementation and the existence of preferential treatment and distortions through Statutory Regulatory Orders (SROs)” (Khan & Ahmed, 2015).

Last but not the least, the use of conventional methods of producing energy has not caused an improvement in the sector rapidly. In this age of perfection and specialization, Pakistan still sticks to the centuries-old infrastructure. There is no latest machinery for the exploitation of natural resources nor have new methods been introduced for reprocessing the available natural resources. According to EAW 2013, Pakistan was heavily dependent on oil and natural gas which count for 35 percent and 29 percent of energy production respectively. The share of hydro energy was 36 percent and 0.1 percent was associated with coal-fired plants (Naseem and Khan, 2015). Recent surveys and reports show that the share of traditional sources to generate power is slightly different which can be expressed in figure 2.

![Figure 2: Share of conventional sources for power generation in Pakistan](image)

According to this figure, 38 percent use of oil to generate power dominates all the remaining resources. 29 percent share is associated with each gas and hydro production. The percentage of nuclear power is 3 while coal shares only 1 percent. Arguably, this 29 percent hydropower should replace the production through gas and oil collectively if Pakistan wants to stable its energy sector.
2. Social Implications

Strategically and geographically, Pakistan is an important player in the South Asian region being one of the most populous countries in the world. It is quite rich in metallic and non-metallic minerals which can be used to produce energy in large quantities. Unfortunately, due to political ill-will and mismanagement of the energy sector, the particular targets to generate electricity, ensuring the availability of oil and increasing the supply of natural gas have become only a dream. Currently, the country has become a victim of the energy crisis and facing many challenges which are mediating many difficulties in facilitating the social problems and preventing social evils (Daily Times, January 24, 2019). Some of these problems have adversely affected social activities in Pakistan. People are fed-up with the shortage of electricity and load-shedding of gas. Their business activities are not growing very well. They are suffering from many implications regarding traveling. Many have become psychological patients and the remains can be seen on the road while protesting against the policies of the government. The research has expressed some prominent social implications resulting in the grim situation of the energy crisis.

To begin with, load-shedding of gas and electricity and the non-availability of oil for transport have tarnished the image of Pakistan in the comity of nations. Most foreigners are reluctant to visit Pakistan’s beautiful scenery. The media’s presentation of local negativities has made the tourists frightened as it highlights the frustration of the Pakistani public more severely. With these views, the majority of tourists do not want to visit Pakistan rather they tag it as a country of crisis. This has declined tourism in Pakistan which has a significant share of the GDP of Pakistan (Bint Faheem, 2016). Even the Pakistanis cannot have easy access to the fuels like Compressed Natural Gas (CNG), petrol and diesel to travel to the northern areas, the most attractive scenery for the tourists around the globe.

Similarly, the uncertainty of necessities of life in a state gives birth to numerous psychological problems among its masses. Similarly, unannounced load-shedding in Pakistan has paved the way for such issues; most people have got frustrated. It has brought them to the roads to unbridle their frustration on public and private property. During different protests, they raise slogans, making some of the most terrible sense of coarseness. Such a havoc situation not only Creates mental distractions among the natives but also leaves a bad impact on the foreigners when they watch all this on various national and international media channels (Bint Faheem, 2016). As a result, Pakistan has to bear a large number of frustrated people who usually violate the rule of law to create disturbances for the whole nation. They damage immovable property i.e. shops, banks, stalls, hotels, marriage halls, etc.

Accordingly, since the arrival of Covid-19, the masses in Pakistan have been facing many troubles due to the shortage of oil. This shortage has disturbed the transportation system the most. In the early phase of the pandemic, lower prices of the oil were supposed to be facilitating the transporters. Then a sudden rise in these prices not only deprived the transporters of fuel but also initiated a blame game between the government and oil companies. In April 2020, India told state-owned oil firms to bolster reserves when ‘global rates fell to a two-decade low’. The imports were slashed which resulted in a damning indictment of the government’s planning. It was difficult for refineries to adjust the prices every two weeks instead of once a month, protecting them from price fluctuations. On the other hand, the government blamed oil companies, like ECC, for rejecting a new price mechanism proposed by Petroleum Division (The Express Tribune, June 09, 2020). The tussle between oil companies and the government has forced transporters and the public to organize protests against the inaccessibility of fuels.
Closely, the energy crisis has polarised the society in Pakistan. In broader terms, this crisis has aired provincialism in Pakistan which is a big threat to national integration. The Public is being divided into the Punjabis, Sindhis, Balochs and Pashtuns because of unequal distribution of resources. The producers of oil, gas and coal are not being awarded according to the percentage of the concerning production. This ignorance on the part of the government has incited these producers to adopt some illegal ways to claim their due share. An example of Khyber Pakhtunkhwa can be quoted in this connection. A senior official of Sui Northern Gas Pipe Line (SNGPL) records that:

“Half of the total volume of the gas being produced in KP (400MMCFD) is being stolen by the people of the areas close to gas fields. They have their networks to steal gas, claiming it a matter of their right as the gas is being extracted from their areas,”

(Dawn, December 23, 2019).

The energy crisis has contributed to unemployment and poverty as well. The decline in industrial and agricultural growth because of the energy crisis has raised the number of unemployed Pakistanis. All the wicked conditions have resulted in aggravating the level of poverty. In 2016, almost 40 percent of Pakistanis were living below the poverty line and that numerical figure was increasing daily (Bint Faheem, 2016). The crisis got the worst shape in the years to come which affected all domains of life in Pakistan. New employment opportunities had been seized due to the closure of industry and lower agricultural productivity. The already employed manpower was being shredded by the employers to increase their profit ratios. Overall, unemployment, shackling industrial growth and lesser agricultural yield had resulted in increasing poverty. In 2017, 60 million Pakistanis were living below the poverty line (The Patriot, April 26, 2017) and this ratio was not expected to be restricted shortly. Currently, the energy crisis has forced all the small and larger industries which is not a good prospect for Pakistan as it can increase the ratio of unemployment and poverty at a dramatic pace. Sufficient control of the energy crisis on a priority basis can lead Pakistan to alleviate this poverty.

The shortage of electricity and gas has created many hurdles in the performance of educational institutions and the health sector. Because of load-shedding, the students start facing issues from their houses and find these on the four walls of their institutions as well. Especially, in medical colleges and universities, the researchers cannot continue their research and complete them in the given time. In summer, the difficulties for academic staff and students even increase to a larger extent. In the case of hospitals, the medical and paramedical staffs are unable to regulate their operations and treatment. There are so many medical instruments and machinery which is run by electricity, but load-shedding disturbs the functioning of these machines. The serious patients have to wait for a long time to get their reports and many others wait for months for the particular treatment.

3. Economic Imputation

After a deep observation of Pakistan’s politics, one can argue that it has been tumultuous with rival political parties struggling for power. Imran Khan’s victory in the 2018 elections has ushered a new political era in Pakistan. His political party Pakistan Tehreek-e-Insaf (PTI) has inherited a slowing economy and continuing energy crisis (The Economist, August 02, 2018). Six months later, Khan’s Pakistan was again marked as a poor country with per capita gross domestic product (GDP) of US $ 1909 (The Daily Star, March 20, 2019) with 58 million people lacking access to electricity. Now, the energy demand is growing day by day in the wake of growing incomes, population and urbanization which has placed pressure on domestic resources.
Undoubtedly, Pakistan is rich in natural gas, renewable and coal resources but due to mismanagement and bad governance, it has become dependent on imported fossil fuels (Ichord, 2020). This dependency has directly affected the national treasure in a bad manner.

Load-shedding has disturbed the economic activities in Pakistan as capacity utilization in some key industries has fallen to almost 50 percent. The fertilizer industry is the worst affected because it has faced interruptions to its gas supplies that have forced its closures in various areas. As far as the fertilizer industry is concerned, Pakistan has the capacity of producing more than one million tons of exportable surplus urea but the energy crisis has decreased the level of this annual production and Pakistan is supposed to import urea. As a result, a decrease in urea exports has eroded the country’s foreign exchange and entailed the payment of millions of dollars in subsidies ‘being the difference between the cost of local produce and the imported urea’ (The Diplomat, August 31, 2013). In the absence of electricity, oil and gas, most of the industrial units are not being opened. Those which are in functioning conditions are gradually moving towards the closure or being shifted to neighboring and other states Patriot, April 26, 2017). This is not going to be in favor of Pakistan at all. If the energy crisis is not manipulated on an urgent basis the Pakistanis will have to be dependent on most of the foreign industrial materials.

Agriculture is the backbone of Pakistan’s economy because it shares more than 20 percent of the national GDP. Almost 70 percent population of Pakistan is living in rural areas and is directly involved in agricultural activities. The major crops such as wheat, cotton, maize and sugarcane have been contributing efficiently against the set national targets of payment collection. Right now, the agricultural sector is facing problems that are closely linked to the discontinuity of irrigational water. Construction of more dams and maintenance of already existing ones are suffering from a delay and lack of policy formulation (The Nation, December 10, 2016). Akin to that, unscheduled shutdown and termination of electricity have affected agricultural productivity badly. This productivity profoundly depends on the electronic machinery like tube wells etc. the load-shedding has also hindered the production of insecticides, pesticides and fertilizers and has pushed the sector into decline (Bint Faheem, 2016, p. 11). It is a fact that the higher energy supplies earn a higher agricultural yield. But in Pakistan, the economic progress is hampered because of the deterioration of the specific sector. There is not enough energy for running tube wells and other machinery. With the closure of fertilizer and pesticide industries, productivity is decreasing day by day (The Patriot, April 26, 2017).

Specifically, the emergence of the phenomenon of circular debt in the energy sector is because of the increased dependence on expensive thermal oil power generation. The slippages in the bill of payments, significantly on the part of public institutions, trigger off a chain of delayed payments for imported furnace oil, natural gas and other inputs to the thermal production. This delay in payments directly affects the working of power plants and results in less than ‘optimum’ capacity usage. Until July 2013, the circular debt for Pakistan had increased up to $ 5 billion which was a drag on the power sector and “a key factor impeding the efficient operation of Independent Power Procedures (IPPs)” (Aftab, 2014). The Nawaz Sharif government of 2013 decided on the retirement of circular debt on a priority basis and within five weeks, the particular administration announced the plans to overcome the issue. The amount of Rs. 161 billion in cash was paid to IPPs to clear the debt. Pakistan investment bonds were issued to the public sector entities responsible for the exploration of oil and gas and operating the marketing of petroleum products.
Furthermore, “non-cash payments” were issued to the Water and Power Development Authority (WAPDA) and the National Transmission and Distribution Company (NTDC) (Aftab, 2014).

In 2015, the International Monetary Fund and the government of Pakistan agreed that full cost recovery should be ensured for the energy sector so that circular debt could not accumulate again. In 2015, the debt stood at Rs. 280 billion while another Rs. 335 billion had been parked in the power holding company (Dawn, May 13, 2015). In 2016, despite many attempts, Pakistan could not minimize the amounts of circular debt that created doubts among the Chinese. China had already signed a couple of agreements with Pakistan to increase mutual energy cooperation through the China-Pakistan Economic Corridor (CPEC). But delayed payments restrained all these developments. In 2017, an executive with Power China told the Chinese media that China had refused to build any power plant in Pakistan “until Islamabad agreed to protect the Chinese investors and lenders from circular debt” (Downs, 2019).

In January 2019, the government of Pakistan claimed to reduce the circular debt of the power sector to Rs. 12 billion in a month while the Asian Development Bank (ADB) spoke of an increase of Rs. 21 billion at the end of August. In August 2019, a committee was constituted to identify and examine the causes of the high costs of electricity. The committee focused on the private power generation with a special reference to the Independent Power Producers (IPPS) and figured out the causes of circular debt (Global Village Space, January 8, 2020). Adding to that, a cartoon in Global Village Space reflects a thorough situation of circular debt in Pakistan. It shows that the burden of circular debt has emptied the national treasurer and the government is a frustrating to deal with.

In December 2019, Pakistan’s NEPRA observed a tariff hike of Rs. 2.44 per unit ‘on account of fuel cost adjustment’. The public had to bear another hike of Rs. 1.76 a month later. By March 2020, the price of electricity units was increased up to Rs. 1.61 while taking the electricity tariff to Rs. 24.47 per unit. These mentions are exceptional ones otherwise NEPRA has revised power tariffs 17 times in the wake of monthly fuel and quarterly adjustments (The Wire, June 02, 2020).
The reason behind that increased tariff was the capacity payments worth billions of rupees that were given to IPPs. It has increased the circular debt which is elaborated in such a way that:

“Pakistan’s ‘circular debt’ now exceeds PRs two trillion. This pile-up has not only endangered the viability of IPPs, but also the solvency of local banks – which will be crippled in case of defaults by the power sector” (The Wire, June 02, 2020).

4. The Way Forward

History reveals that Pakistan has been a host of many internal and external problems but the governing authorities and the masses did never lose heart and rather offered their services to manipulate these problems. Similarly, the whole nation can materialize the quotation ‘there is always a silver lining in the dark cloud’ to cope with the energy crisis. There is a need for quick and collective action in this connection. A change of attitude and a change of lifestyle is needed at the national level which could be triggered by the ruling elite and followed by all segments of the society that have access to electricity. The government should take initiatives to avoid the crisis and the public should obey the rules and laws to adopt austerity measures defined by the government. Selection and practice of the following remedies can be fruitful for approaching that mutual goal.

(1) Pakistan should assure its presence in the South Asian region as an active and cooperative neighbor. It should build cordial relations with India, China, Iran and Afghanistan. First, it should be indulged in peace deals with India and then show an inclination to exchange the energy materials. China’s “road and belt” initiative should be utilized positively to get maximum capabilities regarding energy. Pakistan should revise its relations with the United States regarding the ‘peace pipeline’ and security in Afghanistan. The revision of foreign policy will lead Pakistan to access fossil fuels from Iran, Afghanistan and even Central Asian states.

(2) Political stability within a state is the major solution to all forms of crises. Therefore, there is a dire need for ensuring political stability in Pakistan. There must be no concept of a blame game that gives birth to institutional clashes. When state institutions are in a war-like situation, they cannot pay attention to resolving national issues. So, a politically stable Pakistan can easily overcome the energy crisis.

(3) Pakistan is rich in oil, gas and coal; therefore, a special budget should be allocated to the energy sector to build an infrastructure for the exploration of these minerals. A huge amount is charged every year by foreign companies during the process of exploration. An effective policy in the annual budget can be supportive for standing our infrastructure to explore and discover almost 33 trillion tons of oil and gas reserves in Pakistan. Similarly, 175 billion tons of coal reserves in Thar can be extracted to maximize the performance of the energy sector.

(4) The government should work more on an urgent basis to get rid of the menace of militancy that will reduce the number of blasts of the gas pipelines and other energy resources. The dialogue with the terrorist factions can be the best diplomatic tool to save the larger resources of energy.

(5) The government should exempt custom duty on the imports of solar panels and related equipment like inverters, batteries, photovoltaic modules and solar lanterns. The
equipment can be beneficial for controlling the energy crisis, especially in summer, when the national demand for energy jumps to around 18 GW of electricity.

(6) Pakistan should go for alternative, renewable and cheaper sources of energy. 35 percent of hydro production should replace 62 percent of thermal power. The number of solar and wind power plants should be increased to generate power at cheaper rates. Biogas plants should be encouraged in rural areas for producing energy at minor levels.

(7) The government should build research centers at the regional level with the specific aim of conducting research on the issues of energy production and management. The researchers should be encouraged to complete their research projects in time and they should be awarded prizes in case of success.

(8) Prices of the energy raw materials should be changed according to the conditions prevailing regarding demand and supply.

(9) Undoubtedly, the construction of more dams in Pakistan can be an important factor behind the increased production of energy. But, not to speak of new dams, the already constructed ones are not maintained properly. If the dams were maintained Pakistan could avoid the floods of 2010 that could help to store water as well for energy-generating purposes. Therefore, there must be a focus on the construction of new dams but the older ones should not be ignored. Along with, power plants, transmission lines and other key infrastructure should not fall into serious disrepair.

(10) There should be a check and balance on the energy sector not to repeat the cases like Raja Rental. A separate investigation bureau should be established only to deal with the corrupt officers of the particular sector. In addition to that, there should be imposed a heavy fine for the power theft mostly results in line losses.

(11) There should be an end to the luxurious lifestyle among the elite and the privileged classes. Extra use of energy resources in transportation and routine life should be minimized. Additionally, in private and government offices a timetable should be set for the use of Air-Conditioners (ACs) and the officials should consider if one or two ACs can fulfill the requirement of the office the extra ones should be switched off.

(12) The media should play an active role in creating awareness among the public and should arrange different programs through concerned TV channels to inculcate a sense of austerity measures. The “Save Energy” campaign should be the top priority of the media to create awareness among the masses.

(13) An equal distribution of energy resources among all the provinces can work to get rid of the crisis. National Finance Commission award should be designed in such a way that none of the provinces has reservations over the specific distribution.

(14) Lessons can be learned from other countries to get rid of the energy crisis. Pakistan is not the only country that is facing the energy crisis; many other countries are also under the same menace. Most of the victim countries, like Kazakhstan, have manipulated the crisis. So, Pakistan should explore the strategies of Kazakhstan through which it has got succeeded, and should adopt these to handle the crisis.

(15) The closure of academic institutions, markets and marriage halls till 8 pm can be supportive for keeping balance during peak hours.

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