

# Exploring Pakistan's Myopic Energy Policies Leading to an Energy Crisis: Lessons for the Way Forward

Sumeralqbal

Ph.D Scholar School of Public Affairs,  
University of Science and Technology China-Anhui Province-China

CHU Jianxun

Associate Professor at School of Public Affairs,  
University of University of Science and Technology China- Anhui Province-China

Shafei Moiz Hali

Assistant Professor at Department of Government & Public Policy,  
National Defense University- Pakistan

Muhammad Abdullah Abbas

Graduate Student at Department of Government & Public Policy,  
National Defense University- Pakistan

## Abstract

Pakistan is faced with a multifaceted power demand and supply gap which is compounded due to losses in the system which account for almost a quarter of the production. Over the years the Government of Pakistan (GoP) has failed to harness indigenous resources to devise long-term and effective policies. This study analyzes the major energy policies of Pakistan so far. Pakistan's first formal power policy came about in 1994, which is almost 47 years after Pakistan's independence. This shows the lack of concerted efforts of the government machinery to address power issues. The analysis reveals that Pakistan's energy policies have focused mainly on the supply side and have given little attention to the demand side, which prescribes the development of a system promoting energy efficiency. The policies devised were myopic in nature as they were formulated in the absence of cohesive energy planning which demands the use of modeling tools like Energy PLAN which is an energy technology systems analysis program of MARKAL/TIMES. The study further reveals that, the current mega investments within Pakistan's energy sector under the umbrella of China-Pakistan Economic Corridor (CPEC) are based upon more upon political decisions rather than informed ones based upon MARKAL/TIMES as once more, focus is tilted towards the supply side, rather than energy efficiency and the core causal factors of the energy crisis of Pakistan are being neglected. Energy infrastructure investments under the CPEC are long-term projects and the study suggests that course correction and integrated energy planning and modeling is necessary to eliminate the power/energy crisis of Pakistan.

**Keywords:** China Pakistan Economic Corridor; CPEC; Energy Crisis Pakistan; Power Crisis; Transmission Losses; Pakistan Energy Policy 2014, Energy System, Energy Planning

## Introduction

### The Power Crisis of Pakistan

For the past 10 years, Pakistan has faced the dilemma of power shortage in the country, which is overlapped with a demand for electricity swelling each year by 2.55%-5% each year (Vats, 2016). The issue of Electricity Shortage can't be taken easy hearted as it directly affects the economy of Pakistan (Khalid Mustafa, 2016). This is reason why the development of energy sector has been prioritized by the decision makers in both China and

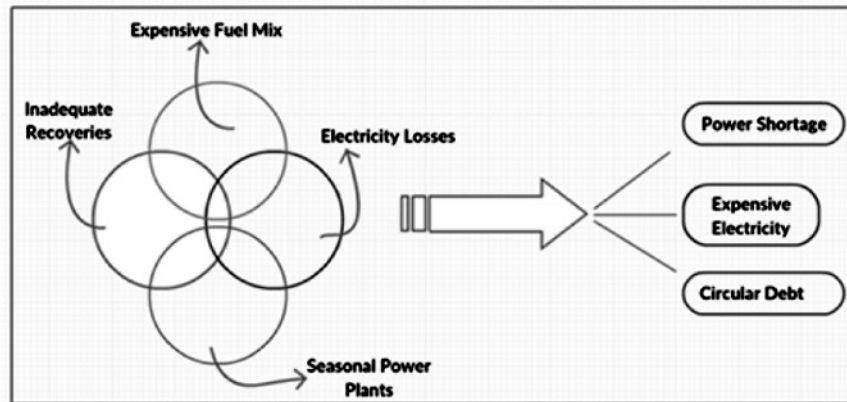
Pakistan in the primary phase of CPEC. The country faces power cuts or load shedding of upto 8 hours, as the massive figure of 2,500 to 3,000 Megawatts electricity is lacking from the system (Khalid Mustafa, 2016)

Being of prime priority among different development sectors of CPEC, US\$34 Billion have been apportioned so far for the power sector. It is hoped that the investments in the power sector will help curb the problem as 16,400 Megawatts of power is expected to enter the System (Hourelld, 2015). In reality energy crisis is not just a child of

low production capacity as Pakistan's installed capacity for electricity production is 22,797 Megawatts and the country's total demand amounts to 17000 Megawatts. The problems in fact are multifaceted from bad governance, poor resource management, and obsolete installed technology to it being coupled with lack of recoveries and

the dependence upon an expensive fuel mix for power generation causing power generation between 12- 13000 Megawatts only (ShafeiMoizHali, 2017). The figure below explains how these problems lead to the crisis Pakistan faces today.

**Figure 1 Energy Crisis**



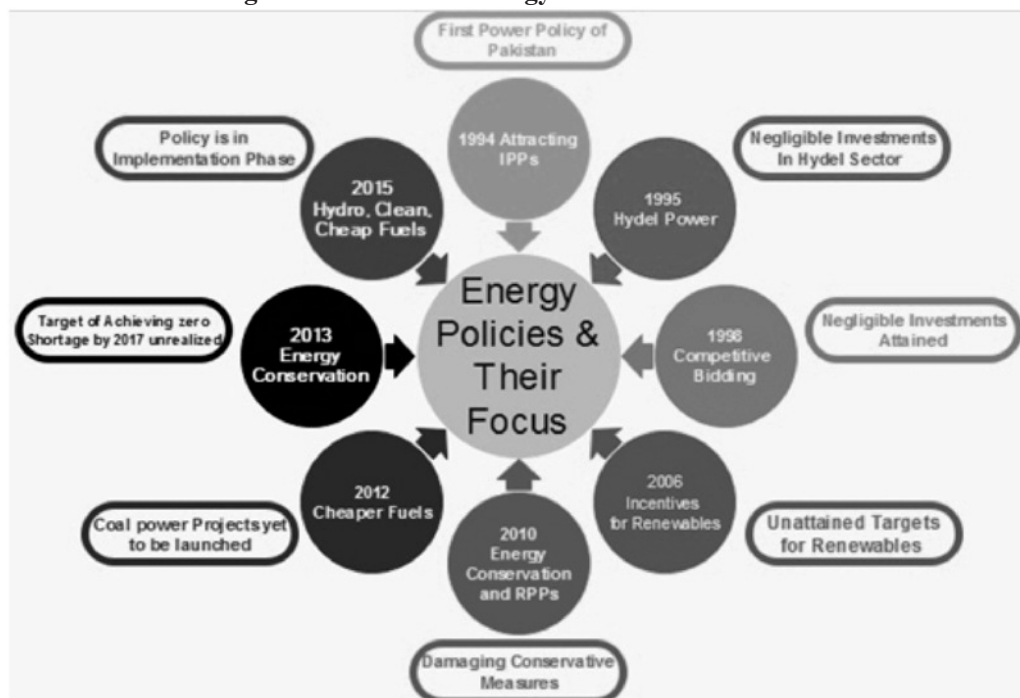
Source: (Shafei Moiz Hali S. I., 2017)

### Energy Policies of Pakistan

For a developing country like Pakistan, the energy policy is critical to the development and nourishment of the economy. The GOP has issued policies pertaining to energy, however, these policies have failed to address the power crisis in Pakistan, which has been brewing over the

past couple of decades and the absence of long term policies to address the issue have contributed to the crisis. The study takes a look at various energy policies over the years and analyzes them through the lens of the Five – E approach of analyzing policies and tries to decipher whether these policies were myopic in nature or not and suggest a way forward.

**Figure 2: Pakistan's Energy Policies over the Years**



**Table 1: Summary Review of Pakistan's Power Sector Policies Since 1994.**

	1994	1995	1998	2006	2010-12	2013	2015
<b>Reasons for Adoption</b>	Increase the access of power for citizens	Encouragement for the utilization of Hydel resources	Creation of competitive power market	Less dependence on energy import	To minimize load-shedding which cause national scale protests	Minimize demand-supply gap	To encourage investors
<b>Desired Policy Outcomes</b>	Generate 1,300 MW	Improve the thermal-hydro mix from 75:25 ratio in order to produce cheaper energy	*Development of an independent regulatory authority (NEPRA). *Privatization of distribution companies. *Investments for Coal and Hydel Power Plants.	Increase the deployment of renewable energy technologies; produce minimum of 9,700 MW by 2030	Creation of Rental Power Projects and reduction of energy consumption	Decrease supply demand gap from 4,500 – 5,000 MW today to 0 by 2017	Sufficient production of power at the least cost
<b>Actual Outcome</b>	16 IPPs were hired with installation capacity of 6,000 Megawatt	Ambiguity in the development of Hydro Power Projects	The policy proved to be inefficient, other than the establishment of NEPRA other goals were scarcely met.	Lack of meaningful implementation (only one renewable power plant was constructed was in 2009, namely, Jhimpir Wind Power Plant)	Energy conservation was introduced. while RPPs involved huge corruption	Short-fall of 3000 MW still prevails even in winter	The cost of power production dropped by a massive 50% in November 2016, due to shift away from import oil

### The 5-E-Approach To Analyse Energy Policies Of Pakistan

When public policy is to be analyzed, two main aspects of the policy demands particular attention. Those two aspects are the “effects” of the policy and “implementation”. The effects part helps gauge the effectiveness of the policy in terms of addressing the problem it intended to address. Since many policies are brought about with good intentions and on paper seem effective but fail to address the problems, due to deficiencies within the implementation phase of the policies. The 5-E approach of policy analysis is one of the basic models of analyzing public policies and within this approach the policies are measured up to five

benchmarks; Effectiveness, Efficiency, Ethical Considerations, Evaluation of Alternatives and Establishment of Recommendations.

In this study, the various energy policies of Pakistan have been briefly explained in the sections above to help build an understanding of the state of affairs at the time of their implementation. From table1, which provides a summary of all the energy policies, we can infer both their performance in terms of their respective effectiveness and implementation and analyze them according to the first 4 aspects of the 5-E Approach and after the analysis recommendations will be provided in the end as a way forward.

**Table 2: Performance of Pakistan's Energy Policies Based on the 5-E Approach.**

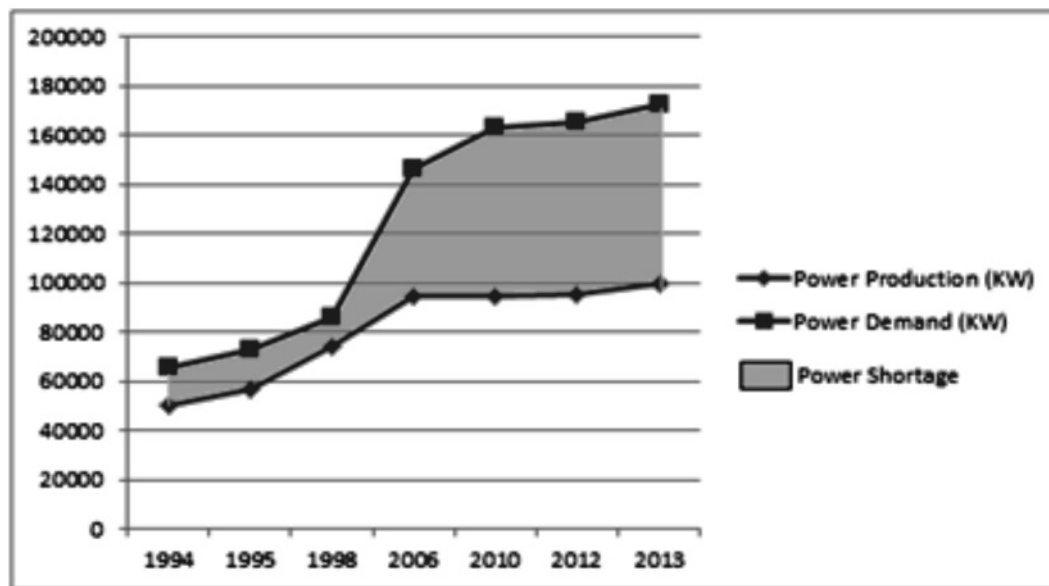
Year	Time Period Before New Policy	Electricity Demand & Supply Gap	5 –E Policy Analysis
1994	<b>1 Year</b>	<b>14718 KW</b>	<ul style="list-style-type: none"> <li>✓Effectiveness</li> <li>✓Efficiency</li> <li>✓Ethical Consideration</li> <li>✓Evaluation of Alternatives</li> </ul>
1995	<b>3 Years</b>	<b>16475 KW</b>	<ul style="list-style-type: none"> <li>✓Effectiveness</li> <li>✓Efficiency</li> <li>✓Ethical Consideration</li> <li>✓Evaluation of Alternatives</li> </ul>

1998	8 Years	18566 KW	✓ Effectiveness ✓ Efficiency ✓ Ethical Consideration ✓ Evaluation of Alternatives
2006	4 Years	51224 KW	✓ Effectiveness ✓ Efficiency ✓ Ethical Consideration ✓ Evaluation of Alternatives
2010	2 Years	68364 KW	✓ Effectiveness ✓ Efficiency ✓ Ethical Consideration ✓ Evaluation of Alternatives
2012	1 Year	69812 KW	✓ Effectiveness ✓ Efficiency ✓ Ethical Consideration ✓ Evaluation of Alternatives
2013	2 Years	72688 KW	✓ Effectiveness ✓ Efficiency ✓ Ethical Consideration ✓ Evaluation of Alternatives

Table 1 and 2 above show us that Pakistan's energy policies have not performed well over the long-term as can be seen in the figure 3 below that Pakistan's power supply and

demand gap has been steadily widening and none of Pakistan's energy sector policies have impacted in reducing this gap for the past 25 years.

**Figure 3: Pakistan's Power Supply and Demand Gap 1994-2015.**



Source: (Hydro Development Institute of Pakistan -2016)

#### **CPEC a solution for the energy crisis in pakistan?**

In November 2015, the CPEC Committee pledged to complete 14 energy projects by 2018, but things on the ground suggested otherwise (Vats, 2016). The Secretary of Ministry of Water and Power in Pakistan is Mohammad

Younus Dagha who issued a statement that, "By 2018 the production capacity would be 30,938Megawatts whereas demand would be 25,961Megawatts and availability would stand at 26,590Megawatts", but upon a closer look at figures and the development of projects it becomes clear

that the 2017 targets of reaching electricity production rate of 25,080 Megawatts to meet the targeted demand figures of 24,262 Megawatts seems exaggerated as the available production capacity has reached only 21,096 Megawatts because so far only 2,665 Megawatts have been added in to the entire system in the past three years (Vats, 2016). Later on, the Minister himself admitted his mistake, when he was thoroughly questioned by the media regarding progress of the CPEC energy projects at the National Assembly Session (Radio Pakistan, 2016).

Almost all the enhancements planned by the government fall under the China Pakistan Economic Corridor (CPEC). Very little foreign investments from other countries are coming into Pakistan. The funding design for these projects is distinctive, funds for these projects will be dispatched to private Independent Power Producers through the Exim Bank of China, and the responsibility of setting up these electricity plants lies with the independent electricity producers, thus highlighting the fact that neither the Chinese government, nor the Government of Pakistan is going to be responsible for the setting up of the projects. The interest rates for these investments to sponsor production is set between 5-6%, the Government of Pakistan will buy electricity from these projects at pre-negotiated rates (Rehman 2015). The CPEC will greatly inherit the benefits as well as the dividends from the overall Chinese dream provided Pakistan fixes its electricity infrastructure (Shafei Moiz Hali 2015).

### Conclusion and Recommendations

Pakistan's economy is not growing at its potential, and this major snag in growth is owed a lot to the energy crisis, while conducting the review of the literature various studies focusing on the case of Pakistan indicated that Pakistan's economic growth potential is tremendous but structural problems and inefficient use of resources hold Pakistan back. Long term Energy Policies are requisite for energy security, sustainability and greater certainty. Pakistan has followed a trend of short term energy policies that have been low on the mark of being effective and efficient, which have come at regular intervals of 2 to 4 years. The ever widening gap between electricity demanded and electricity supply over the past few decades is proof of the ineffectiveness of these policies. Many times, Pakistani Government has changed the energy policies, due to public pressure for example: back in 2012, when Government reversed the decision, made in the 2010 energy policy and resorted to nationalization, the constant change in policies creates a situation of uncertainty, redundancy in efforts and creates hurdles for development of energy security and sustainability. Investment in Energy Sector is important, as Pakistan's recent Energy Policies

have encouraged private sector for power generation. Long term policies are the foremost testimonial and backing of the state that even if the political scenarios in the state changes the direction remains the same. Thus the long term policies help build trust among the investors that a certain environment for investment welcomes them.

In the future, yet alone even in our present times our energy demand is increasing. With the upcoming technology boom, we are in need of more and more energy which needs to be provided through modern technologies.

For sustainable energy sector growth, long term policies are the end solution, they aim high and have strategies that work to meet with the demand while keeping in sight the ethical considerations. Short term policies often look for an immediate solution without really focusing on the sustainability and climate concerns. Short-term solutions may aggravate long-term problems which have happened in the case of Pakistan.

The Foreign Direct Investment under the umbrella of CPEC is a major opportunity for Pakistan (Shafei Moiz Hali T. S., 2015), especially in the arena of resolving Pakistan's energy crisis but theoretically it can be seen that, once again most of CPEC's investments in the power sector are targeted towards the power generation side and less focus is given to the distribution and demand side. It is evident from the energy policy review section that the 2013 energy policy proposes the implementation of structural reforms but, despite the presence of such a policy negligible investment under the umbrella of CPEC is directed towards aiding in the implementation of this policy and in improving and modernizing Pakistan's power transmission system. Similarly, only a marginal share is allocated towards the development of hydro power plants in Pakistan, under the umbrella of CPEC. Whereas, Hydel power generation demands considerable attention in Pakistan, in-order to make Pakistan's energy-mix more sustainable. In terms of Pakistan's policies directed at managing Pakistan's energy needs, a comprehensive policy framework targeting energy efficiency is deficient to tackle problems of electricity wastage, cost and usage. The major concern regarding the long-term performance of the CPEC backed energy projects is that, once these projects become operational, they will contribute towards Pakistan's power sector in the form of Private or Independent Power producers from which electricity will be bought by the government and the electricity will have to be distributed through Pakistan's state owned and highly inefficient distribution companies and their network which is prone to annual losses of 25%, which by all standards is very high. However, it is not a cause for alarm, as the CPEC is a mega project and its culmination and delivery will take



a long-time and there are annual joint review meetings between the two governments. In joint meetings, projects are added and subtracted each year and results from such researches will help recommend plausible policy recommendations which will help steer the FDI for the development of CPEC in the right direction so that the energy crisis in Pakistan can be effectively resolved.

### References:

- Hydel policy 1995. (1995). Retrieved from waterinfo: <http://waterinfo.net.pk/sites/default/files/knowledge/Hydel%20Power%20Policy%20Brief-%201995.pdf>
- Hourel, K. (2015, April 20). Reuters. Retrieved January 11, 2018, from reuters.com: <https://www.reuters.com/article/us-pakistan-china/china-and-pakistan-launch-economic-corridor-plan-worth-46-billion-idUSKBN0NA12T20150420>
- J.Mirza. (2015, October 15). Pakistan's energy sector needs \$25bln investment: World Bank. The NEWS, pp. <https://www.thenews.com.pk/print/67690-pakistans-energy-sector-needs-25bln-investment-world-bank>.
- Khalid Mustafa. (2016, May 05). Circular debt continues to haunt power sector. The News, pp. <https://www.thenews.com.pk/print/117604-Circular-debt-continues-to-haunt-power-sector>.
- N.H. Mirjat, K. H. (2017). A review of energy and power planning and policies of Pakistan. Renewable and Sustainable Energy Reviews. 79, 110-127.
- NEPRA. (1994). Policy Framework and Package of Incentives for Private Sector Power Generation Projects in Pakistan. Islamabad: NEPRA.
- NEPRA. (2013). National Power Policy 2013. Islamabad: National Energy and Petroleum Regulatory Authority Pakistan.
- R.Aziz, M. A. (2015). Pakistan's Power Crisis: The Way Forward. Washington D.C: United States Institute of Peace (USIP).
- Radio Pakistan. (2016, May 08). '2665 MW ADDED IN SYSTEM DURING LAST 3 YEARS: KHAWAJA ASIF. Retrieved Aug 28, 2016, from Radio.gov.pk: <http://www.radio.gov.pk/08-Jun-2016/2665-mw-added-in-system-during-last-3-years-khawaja-asif>
- Rehman, S. U. (2015, April 17). 1st phase of CPEC to bring \$35bn investment in energy: Ahsan Iqbal. Retrieved April 23, 2018, from breccorder.com: <https://www.breccorder.com/2015/04/17/238832/>
- ShafeiMoiz Hali, S. I. (2017). Impact of Energy Sources and the Electricity Crisis on the Economic Growth: Policy Implications for Pakistan. Journal of Energy Technologies and Policy Vol 07. No.2, 7-29.
- ShafeiMoiz Hali, T. S. (2015). One Belt and One Road: Impact on China-Pakistan Economic Corridor. Strategic Studies, 35(1), 147-164.
- Vats, R. (2016). China Pakistan Economic Corridor: Energy and Power Play. Institute of Chinese Studies ICS Analysis, No.43. <http://www.icsin.org/uploads/2017/05/12/6f85a6dcbfe146d2e332da7232ab185>