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Imbalance of energy mix in Pakistan and its Consequences

1. Introduction

Thesis Statement: Disparity of energy is an alarming call to secure the state's energy resources due to limited supplies and rising demand of energy. Rational measures are urgently require to bar and replace the dependent by independent resources.

2. Disproportion of energy mix and its associated impacts in Pakistan.

3. Major contributing factors to cause an imbalance of energy mix in Pakistan

- a.) Russia-Ukraine conflict plunder the global economy
- b.) Global energy politics ransack the nation's procurement network.
- c.) Lack of investment due to political biased renewable energy policies.
- d.) Over dependency on indigenous resource to

fulfill consumption demands.

e.) Increase in energy demands owing to rapid urbanization and rising population.

f.) Impact of Covid-19 and Climate change on energy intake.

g.) Resources conflicts with neighbouring States.

4. Consequences in Pakistan due to imbalance of energy mix

a.) Weakening foreign relation, hence effecting trade activities.

b.) Imports of fossil fuels at exorbitant price, increases circular debt.

c.) Pause on exports goods and its production due to energy shortage.

d.) Social disparity leads to increase in crime

e.) Biased implementation of policies to facilitate specific group of people.

f.) Deepen political conflicts quelling foreign investment.

5. Solutions to tackle imbalance of energy mix

- a.) Gradually shift the load from ~~non-renewable~~ power plant to renewable power plant.
- b.) Set up short term goals, free from political changes, to boost production capacity
- c.) Attract foreign investment ~~by~~ in energy sector by ~~incentivizing~~ incentivizing
- d.) Promote individuals by easing the installation of solar plant on rooftop, for domestic purpose.

There is a saying that dependency kills the credibility in you. Therefore, be independent.

Currently, Pakistan is mired in multiple issues and the root cause is single; over dependency upon others. State's over dependency upon others is gradually planning its strategic death. One of the dire issue of Pakistan that demands drastic actions is disproportion of energy mix.

Major driving forces which are negating the proportion of energy mix are: global conflicts which disturb the procurement network and favouritism, political influenced policies; lack of investment; over dependency upon indigenous non-renewable resources; climate concerns and rapid urbanization to facilitate growing population. Serious measures need to be launch, else it will vandalize economy, foreign relations and most importantly the living environment. Disparity of energy mix is an alarming call to secure the state's energy resources due to limited supplies and rising demand of energy. Rational measures

are urgently require to bar and replace the dependent by independent resources.

Energy demands are increasing internationally due to the economic activities, population growth and rapid technology transformation. On the top of it, all the global politics is centered around the energy circle, as it is the potential pre-requisite of becoming Superpower. In this context, all the influencing states are negotiating with one another, peacefully or fearfully. Therefore, it is really important for Pakistan to glance over the energy related dependencies and adopt alternates to fulfill the energy demand, as well as earn exporting capabilities, in order to become Spheric state.

One of the critical factor which disturbed the energy market is the eruption of Russia-Ukraine war, whose outcomes can be manifestly visualize in global economy. The formal act of

Russia to quelled the oil supplies to Europe, had been burdenizing the Arab countries to fulfill the enormous demands. The situation went worse, when Ukraine allies opposed sanctions on Russia and its allies. As an outcome, the oil prices shooted up along with the associated commodities and inflation rised across the globe. As per OECD report, 5% economic growth was projected for 2022 before Russia-Ukraine war, but after the war, it reduced to 3.1%.

Global energy politics have vandalized the nation's longlived procurement network and enforced to seek new vendors in order to maintain continuity of fossil fuels in sequence to fulfill the nation's demand. Most of the oil companies directed toward US and European market to generate enormous profit because of the rise in demand and more purchasing power of states, as compare to Pakistan. Switzerland's companies like Grunvor and Sni SpA rejected to supply fossil fuels to Pakistan after Russia-Ukraine war.

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to meet the demands of European states and generated a profit of \$2.4 billion, in 2022. Such rejections from trustworthy vendors at ~~the~~ ^{such} critical time frame left Pakistan helpless, to purchase over priced fossil fuels, for its energy demands.

Another major reason which is a hurdle in balancing the energy mix, is the political instability, which actually violates the policies and eventually demagnetize the investors. Mainstream design long oriented policies in regard to renewable resources adaptation which are either violated or eradicated by the successive government. Unpredictable uncertainty portrays a blurry image in investor mind which at the end make them feel reluctant in investing. ARE policy 2020, aimed to attract investment for infrastructure investment, but unfortunately could not magnetize investment due to political sensitive long term policies. Therefore, there is a great significance of stable political system to magnetize investment for any development project.

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Unfortunately, non-realistic analysis and poor decision making authorities, increased the dependency on indigenous resources, to cater more than value of the energy demands. Almost 45% of energy needs were dependent on natural reserves. The situation went alarming when depletion intake of reserves initiated and Pakistan sought to import fossil fuels, rather than other in-hand utilizing in-hand energy resources. As a consequence, fossil fuels imports extract a large portion from fiscal budget, which is also increasing steeply year by year. As per Pakistan Economic Survey, oil import increased by 95.9%, petroleum by 121.5%, crude oil by 25.3% and LNG by 82.9%, in 2022. Pakistan's economy is highly sensitive to the international oil market which can harm the dignity of Pakistan.

Moreover, rapid urbanization to facilitate the necessities of growing population is another cause which is creating an imbalance of energy mix. Growing population and rapid urbanization

are demanding energy resources, which is a challenge to deliver for the developing countries due to its rising demand globally and international politics over it. The hike of demands are basically generated from industrial and agriculture sector, while domestic and commercial are utilizing the same portion. As per Pakistan Survey reports 2022, domestic and commercial demands staged the same but agriculture and industrial demands raised by significant ratio. Therefore, the rising requirement is the prime factor of importing fossil fuel at exaggerated cost, to maintain the development growth.

Furthermore, Covid-19 and climate issues provided a new dynamic of energy mix. On one side, the energy demands significantly increases after Covid-19 and on the other side, energy production through renewable plants are promoted and encouraged, for humanitarian beneficials. This circumstances turned out to be very problematic for the developing states, who

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invested billion dollar to build infrastructure, but cannot utilize it at peak due to its global warming associated impacts. Pakistan being climate activist seeks new friendly environment method to produce energy over instock 170 million tonnes coals that have the capacity of generating energy for decades. Economic recovery from the covid-19 combined with weather condition led to sudden imbalance of energy mix.

There are multiple impacts of imbalance energy mix in Pakistan. Among them the most critical one is the dwindling of dilapidated foreign relations, which will vandalised the trade and trust factor between the countries. The exporters of fossil fuels are limited, whereas the importers of it are in huge quantity. Under current situations, where energy demands are extremely high, provides an open platform to the exporters to violate old

agreements, in the influence of market demands. Multiple dilapidated Pakistan vendors of fossil fuels like SOCAR and Gunvor denied to provide fossil fuels because they are receiving higher demand at a better price from Europe and US. Such unpredictable changes in critical situation is a serious threat, that owns the potential of exploiting trade and trust, which eventually weaken the bonds within countries.

Depletion of indigeneous energy reserves and disruption of international oil market enforce Pakistan to sought loans on exorbitant interest, to purchase costly fossil fuels at hefty rates in sequence to facilitate approximately 45% of its fossil fuel dependent consumers: in result increases circular debt. As an outcome, deficit in balance of payment occur, as the rising circular debt negates the revenue, burdenizing the economy. As per World Bank report, circular debt increased by 3% in 2023, ranging to ~~Rs~~ 2.31 Trillion rupees

supersede to power sector. Trading at unfavourable conditions disturb the fiscal budget by contributing a big portion of it to minimize the circular debt, which actually leads to economy crisis. •

Due to over-reliance, imbalance of energy mix causes a shortage of energy in Pakistan: quelling the production of exports goods and services. Industries, agriculture and other sectors failed to cover up the expenses due to decline in production capacity. Moreover, a small proportion tried to reduce the quality to achieve break even, but vain due to inacceptance of the goods in international market. In the essence, owing to insufficient electricity supply at high tariff led to closure of multiple industries and other businesses. As per economy report, majority of the industries, small enterprises businesses and many other sectors could not survive, when the cost of unit increased by Rs. 7.5/-, and had to face the darkness. Over

dependency on highly fluctuating resources have certainly changed the Pakistan economy dynamics.

Undoubtedly, disproportion of energy mix owns the tendency to integrate social disparity in a society, which have the potential indeed, in rising the crime rate. Global politics have a direct influence on the national economy which causes inflation within no time. As a consequence, the price of the necessary commodities shoots up and the purchasing power of the citizen reduced steeply. Mainstream people, business owners and at some extent, government officials have the capability to adjust, but marginalized people get dire and face extreme level of difficulties, to own one time meal. As a result, for the sake of survival, get indulge in illegal means, condemn by society, to earn an living with necessities. As per the Global Crime index report 2023, the crime rate in Pakistan raised to 3.98. People explore alternatives like street crime, prostitutions or contract killing, to earn for themselves an amount -

Undoubtedly, welfare policies are made by the policy making authorities, but informal implementation of it, further burdenize the destitute people, as if they are the real culprit. Welfare policies are established to provide relieve to the people, but unfortunately, at the time of its implementation, the country usually faces inflation due to an energy mix issue. This oftenly led to informal implementation of policies and end up with a biased sharing of resources and subsidies. Recently, agricultural subsidies were announced, to provide relieve to the farmer. At the time of provision, the subsidies were provided to the agricultural industrialist, to ~~purchase~~ manufacture fertilizer and urea in order to control its shortage. Unfortunately, the fertilizer and urea were black marketed to farmers at hefty amounts, to enjoy unethical profit.

Political instability is one of the most disastrous consequence of energy mix issue, which is gradually chopping off all the

developing opportunities like foreign investment. Undoubtedly, fossil fuel is the need of every country, but being highly sensitive on global economy, much of the global as well as national politics are centre around it. Demand and Supply mechanism gets vandalized by instant incident like wars and countries gets bound to purchase fossil fuels at hefty prices, to obey the sanctions and maintain foreign relationship with allies. If ignored or not abided, then opposition parties are funded and provide strategies to topple down the governments. In Pakistan, the political conflict peaked when one political party leader approached a state to purchase oil at low cost, instead of purchasing at high price. As a result, his government lost the governance power. Hence, internationally and nationally, political conflicts are very likely to get ignited from energy mix issues.

One of the most effective solution to deal with the imbalance of energy mix is the shift of

lead
from non-renewable energy to renewable energy.

This solution have the potential to cater dual issue such as country's economy and climate issue. Almost, 47% of the country's energy requirement is fulfilled from fossil fuel power plant. The over reliance on the fossil fuel power plant for energy can be counter, likewise other countries, ~~as~~ by distributing major energy demands on the energy produced by renewable power plants like hydropower, wind power plant or solar power plant. China is one of the top energy manufacturers by renewable power plant, it produces energy of around 300 GW through solar power plant only. It turnout to be a wise solution to ~~be~~ safeguard ourselves from fluctuating global market.

As per the political situation of Pakistan, another intellectual solution to the problem is to set short term goals, in regard to improve the energy sector, so as to diminish political

influence and interference. Most of the energy projects were initiated, but due to long completion time, most of the projects are either paused or met crawling development, not due to the lack of resources, but because of political instability and interference.

Basha dam project is among one of the project which met the same fate, after the political party changed. Therefore, it is imperative to initiate power projects with roadmap that promises the completion of it, within the ruling party tenure.

Moreover, another solution is in collaboration with foreign investment: where aim is to attract investment in the energy sector, to improve the production capacity and upgrade the transmission networks in Pakistan. Indeed, Pakistan is not economically strong enough to spend on renewable power plants, but development, but yet can play a vital role in magnetizing foreign investment

by easing the trade^{and} business policies through incentivizing such as reduction in taxes, lower electricity tariff, profit out going, provision of land on lease etc. Policies like "Alternate and Renewable Energy Policy, 2019" must be announce aiming to provide promise supportive environment for renewable project, with an ambition of increasing the production capacity. Eventually, with incentivize policies, investment targeting energy sectors can uplift the economy by reducing the reliance on fossil fuels and its associating factors.

Furthermore, authorizing the citizens of Pakistan toward the utilization of energy and individual energy build capacity through awareness programs and incentives, can be a solution, to cater the domestic and to some extent commercial demands. Citizen can be bombarded with awareness an effective usage of electricity via digital platform. On the other hand, ease the^{start} installation processes and procedures, to boost the number of solar energy users. Such

practices will reduce the over reliance on the non-renewable energy. Policies like reducing the tax on the import of solar panels must be promoted. Associating components like invertors, cables etc must be made available on installment plans.

In the light of the above arguments, it can be concluded that the energy demands are steeply increasing globally due to economic activities, growing population and rapid technology transformation. Despite of enhancing energy demands, the energy mix become critical issues for Pakistan due to its over dependencies on other states, for its energy requirement. Concerningly, this dependencies are highly influenced by global politics, conflicts, social and climate issues. As a consequence, directly effect the fiscal budget, foreign relation, induce crime and destabilize politics of nation. Undoubtedly,

it is a main barrier toward the development,
which need urgent alterations in policies
and strategies, for prosperity of the country.