

Q1. What are the major reasons behind the persistent energy crisis in Pakistan? Propose viable solutions for sustainable energy security?

Energy crisis is one of the major issues Pakistan faces today, hampering the country's economic growth. The term energy crisis refers to the short fall of oil resources leading to expensive electricity production, which is not even enough to meet the demands. Pakistan is facing persistent energy crisis for almost two decades not only because of internal issues but also because of international challenges.

### 1. Major Reasons:-

Ever since, Pakistan gained independence, it has been facing multiple issues due to the un equitable distribution of resources. These added to the miseries of the newborn country that still fights for sustainable development & growth.

#### 1.1. Demand and Supply Gap

The enormous challenge of bridging the supply

and demand gap has gotten the energy sector in great trouble. According to recent reports the energy demand is 30,000 MW while the supply never exceeds beyond this range of 20,000 to 23,000 MW, leading to short fall.

### 1.2. Lack of Infrastructure :-

Pakistan's energy transmission and distribution infrastructure is outdated and ageing. 11-18% of energy is lost during transmission. Pakistan has a capacity of 42000 MW energy production and yet only 22,000 MW can be transmitted through this system.

### 1.3. Rise in International fuel Prices:

Due to Russia-Ukraine War, international oil supply chains are disturbed. Russia is the third largest producer and exporter of oil across the globe. Due to the US & EU sanctions on Russia, the international oil prices spiked that adversely impacted the energy sector of Pakistan.

### 1.4. Reliance on Fossil Fuel :-

According to 2023 reports Pakistan rely

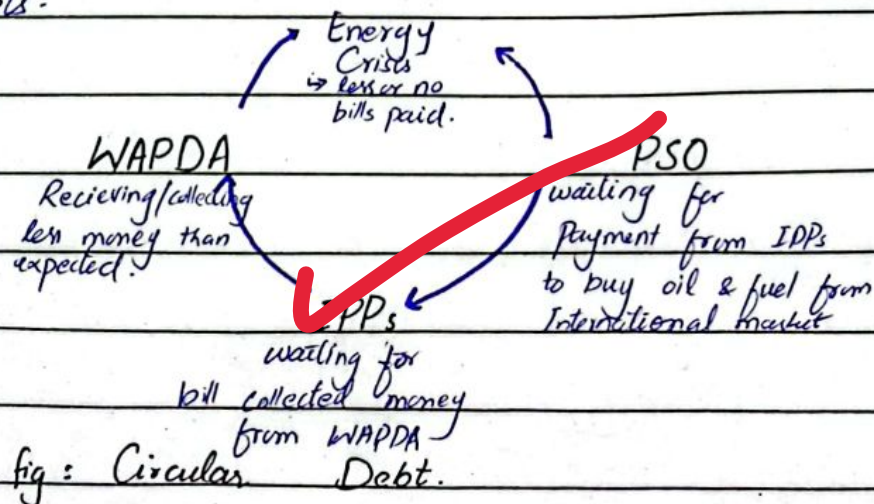
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Highlight the references. Add the source against it as well

mainly on thermal energy production. 65% of the total energy produced is obtained from fossil fuel, mainly oil and gas. Every year Pakistan has to import worth billions dollars of oil for this purpose.

### 1.5. Circular Debt:-

The vicious cycle of Debt has crippled the energy sector. Pakistan has to pay a debt of PKRs. 2.6 Trillion. Govt subsidizes the electricity, keeping its prices low artificially. Less money is collected in the forms of bill & government has to take loans in order to pay debts.



### 1.6. Governance & Policy Making:

The hyping corruption in WAPDA, NEPRA &

other power management institutions is due to the lack of effective governance and strong public policy. Government has made "Capacity based" agreements with IPPs leading to a burden on economy in the form of increasing debt.

## 2. Solutions for sustainable energy security:

Although, energy crisis is a very serious threat to Pakistan's economy as it impact all major sectors including industry, service & agriculture, yet this issue can be mitigated by taking necessary measure.

### 2.1. Diversification of energy sources:-

Pakistan has a potential of 50,000 MW of wind energy and a couple of million of MW of solar energy, yet Pakistan only produces 5-6% of total energy from renewable sources.

By relying more on renewable energy sources and diversifying the options against fossil fuel will lead to a more sustainable energy production method.

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### 2.2. Upgrading Infrastructure:-

Pakistan needs to upgrade its energy transmission infrastructure in order to minimize the transmission loss. By modernizing the infrastructure, Pakistan can save up to 150 billion rupees annually.

### 2.3. Building Dams:-

Pakistan needs to build dams to store water and use it for hydrothermal electricity generation. Building Diamer-Bhakra Dam & Dasu Dam will add 9000 MW of energy to national grid. Moreover, Government should resolve Kalabagh Dam dispute, which can add 3500 MW of energy to the system.

### 2.4. Addressing the issue of Circular Debt:

Pakistan needs to break this vicious cycle of circular debt. For this we need to revise the contracts with IPPs. The contracts should be user based not capacity based. Pakistan needs to minimize the subsidies of energy

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sector and improve the revenue collection system.

## 2.5 Public-Private Partnership:-

Pakistan is in dire need to switch from Independent Power producers to Public-Private Partnerships (IPPs to PPs). CPEC energy project has already added 5230 MW of energy, we need to work on their domain.

## 2.6. Regional Cooperation:-

Due to its strategic location, Pakistan has a leverage of making effective cooperations with the neighbouring countries. CASA-1000 is one such project. Pakistan can go for such cooperations like IP gas pipeline and TAPI project.

Add more arguments

## 3 Conclusion:

Pakistan's persistent energy crisis can be mitigated by adopting sustainable solutions like upgrading infrastructure, diversifying the energy sources, implementing strong governance policies and promoting regional cooperation. These measure will ensure a sustainable future.

Good structure and arguments