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Power Sectorhurdles India's Economic Growth

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Abstract

Energy plays a key role in a country's economic growth and socio-economic development. This study is related to how the power sector hurdles India's economic growth. As the proliferation of every nation's economy is reliant on the availability of energy. Energy security is mostly affected by the availability of resources and intuitive policy changes in the power sector. This study analyses the dependency on coal as an energy source and the shortage of power arising due to an imbalance in power sector infrastructure, which includes energy deficits and loss in revenue.

Introduction

Today, most countries are on the path to achieving high economic growth. As we know, for any nation, its growth is constrained by different sectors of the economy. Although many sectors contribute to economic growth, regulators must emphasize the most essential ones. Thepower (energy) sector is one of them. The demand for energy in several sectors of the economyhas surged in the last decade.. The growing use of energy resources (fossil fuels) has resulted in global environmental deterioration. As a result, the challenge that arises is to combat climatechange while sustaining economic growth. It includes a list of issues that hurdle India's economic growth directly or indirectly.

India's energy needs are mainly driven by fossil fuels such as coal. It is inexpensive, regionallyabundant, and maybe priced politically, but it has long-term availability problems. Concerns regarding fuel availability, the financial viability of electricity distribution companies and environmental challenges have resurfaced. In the meantime, growing expenses may impede thefeasibility of new initiatives. The energy sector is still extremely vulnerable to political influence. Dependency on imports and sustaining energy security are under the radar of the policymaking view of the Indian energy sector. Recent policy changes are aimed at transitioning the sector through ongoing reforms.

Our present development and evolutionary reform routes are expected to increase the difference between energy supply and demand, thereby diminishing the expected growth objectives. If no substantial improvements are made to the existing pattern, India's budgetary burden linked to energy security and sustainability may rise.

Pressing Issues Of Power Sector With growing energy demand, India is trying to shift from conventional to renewable energy sources, but the fact is that a significant amount of energy generation is still coming from

thermal (coal, oil, gas) plants.

Coal is the major constituent of thermalpower generation, accounting foralmost 70% of total capacity, and its production from the "last decade (2010-2020) showed a CAGR of 3.58%" (Energy Statistics, 2021).In the renewable energy sector, there is a significant decline in "growth from 2018-19 to 2019-20 from 24.47% to 9.14%" (CEA, 2020). Figure 2

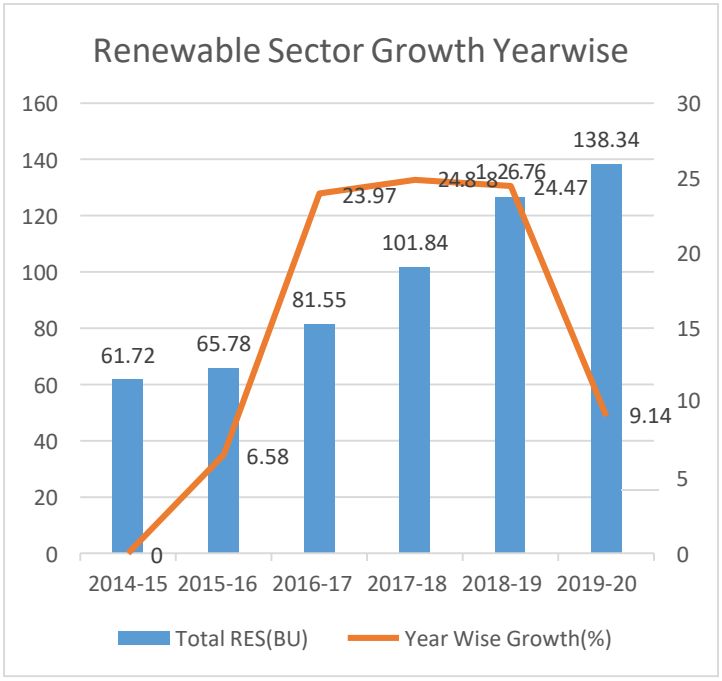

Figure 2

Source: Adapted From (Central Electricity Authority, AnnualReport 2019-20, p. 34)

Rising imports in recent years to meet energy demand, which is essential, butnot a way to compromise with detrimental climate change. The energysector is monotonously dependent on imported coal to meet its indigenous demand to fill the rising gap in power shortages. "The generation loss accumulated due to inadequate supply of coal is about 30 billion units for 2019-20" (CEA, 2020).

The trend in coal imports is substantially high, which can be seen "as the CAGR (2010-2020) of coal imports is nearly 15.32%", which shows an increasing trend for a prolonged period (Energy Statistics,2021). Figure 3

From the scheduled "capacity additionof 12186 MW for the period 2019- 2020, only 7065 MW was added as ofDec 2020, including 6765MW of thermal power", which also aggravates the concerning issue of coal dependency and the low pace of renewable energy production (CEA, 2020).

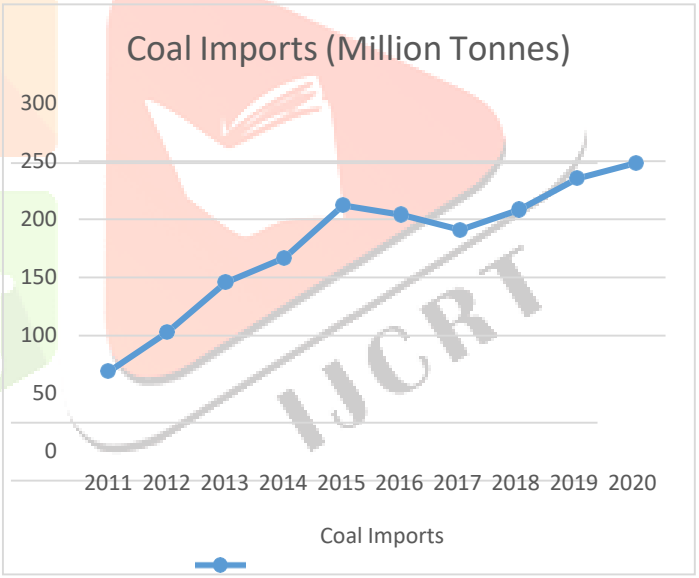

Figure 3

Source: Adapted From (Energy Statistics, 2021, p. 42)

In the year 2019-20, "27 thermal power plants with an installed capacity of 2462 MW were retired" (CEA, 2020).It is essential to comprehend the pattern of energy demand and its utilization among different activities and sectors of the economy. Electricity consumption showsan increasing trend with a CAGR of 6.74%for the period (2010-2020). "The usage increased from 6,94,392 GWh to 12,91,494 GWh". Figure 5 The dominating sector in consumption is industrial, followed by domestic and agriculture. Figure 4

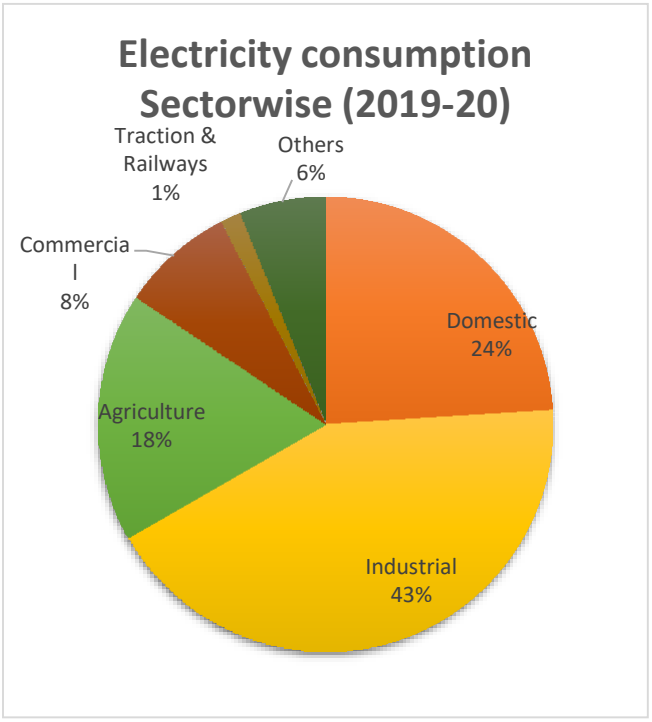

Figure 4

Source: Adapted From (Energy Statistics, 2021, p. 59)

Cumulatively, these three sectors account for around 80% of the total energy demand of the country and their growth is also essential for overall economic growth. Year by year, energy usage in the industrial sector is on a rising trend and its growth is somewhat constrained by the energy sector also.

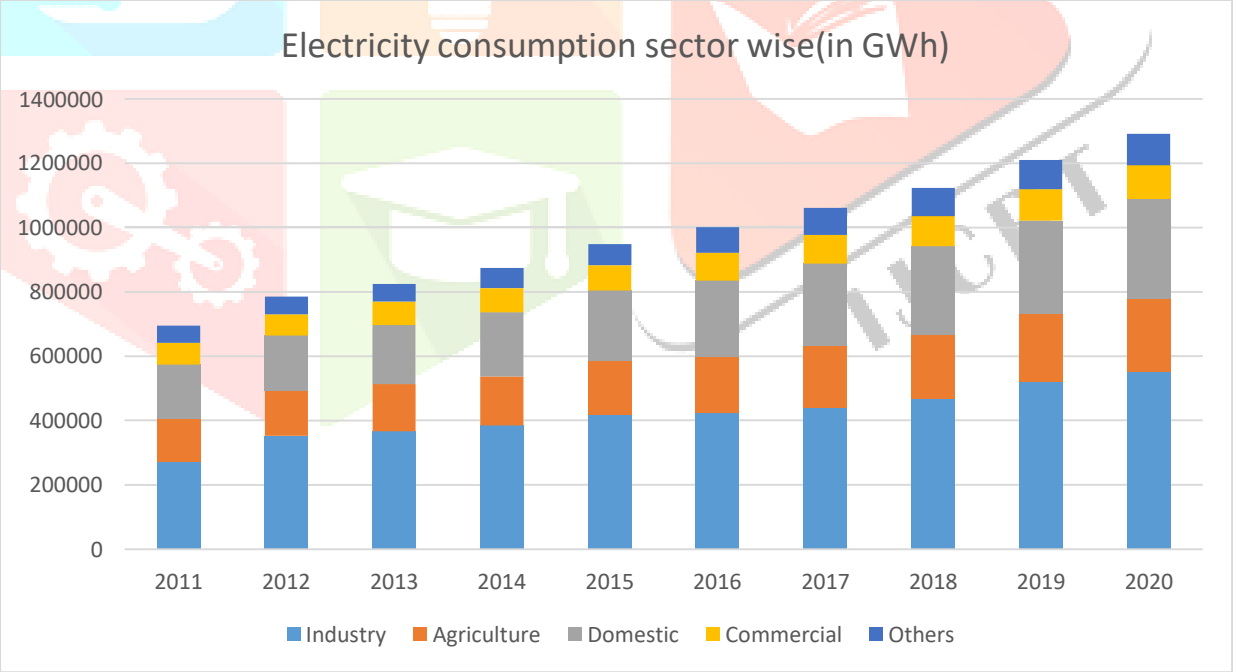

Figure 5

Source: Adapted From (Energy Statistics, 2021, p. 72)

Power Deficit and Loss Scenario

Energy deficit has persisted for a long period due to ingrained transmission and distribution losses (T & D losses), depicting a picture of barricades in economic growth and poorinvestment in power sector infrastructure. T & D losses from the last decade accounted for in the range of 20-23% annually and "the CAGR of T & D losses is 3.5% for the period (2010- 2020)". Figure 6 India's T & D losses are relatively very high in comparison to prominent economies like the USA, China, the UK, and France (CEA, 2020).

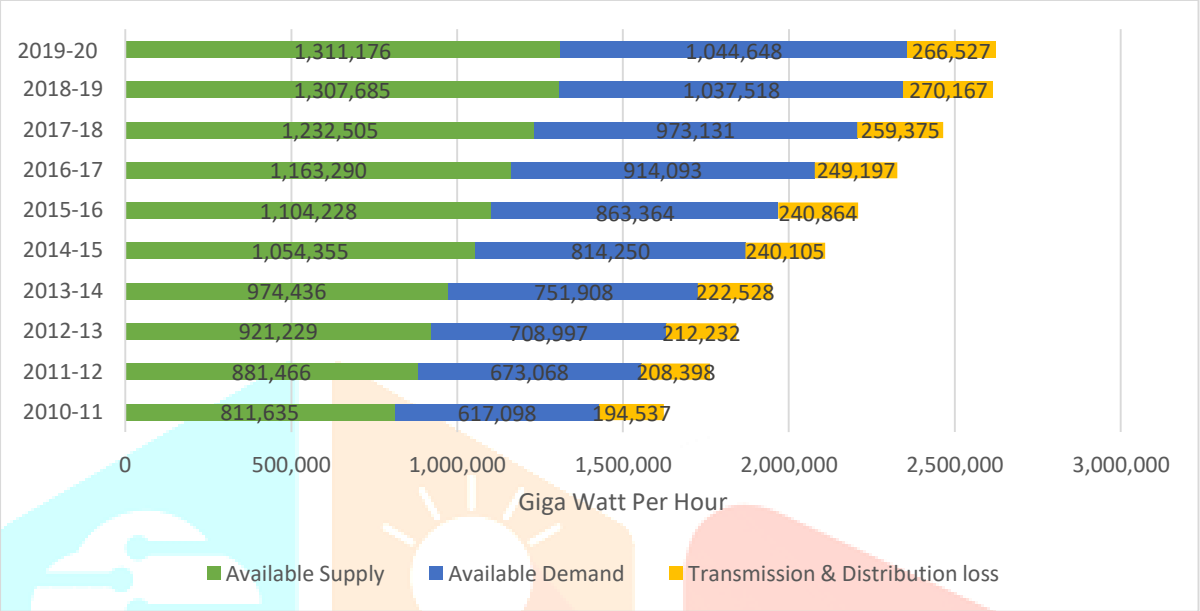

Figure 6

Source: Adapted From (Energy Statistics, 2021, p. 73)

After 2016, there was a relatively modest void between demand and supply of energy, "which for the period 2019-20 was around 1271 MW". Such a huge shortage has emerged due to underdevelopedinfrastructure (T & D Losses) (CEA,2020).

"Peak deficit also shows a trend similar to an energy deficit, which was about 0.7%(1280 MW)". Figure 7 In the current growth scenario, these two factors play a huge role asthe industrial sector accounts for most of the expanded energy demand.

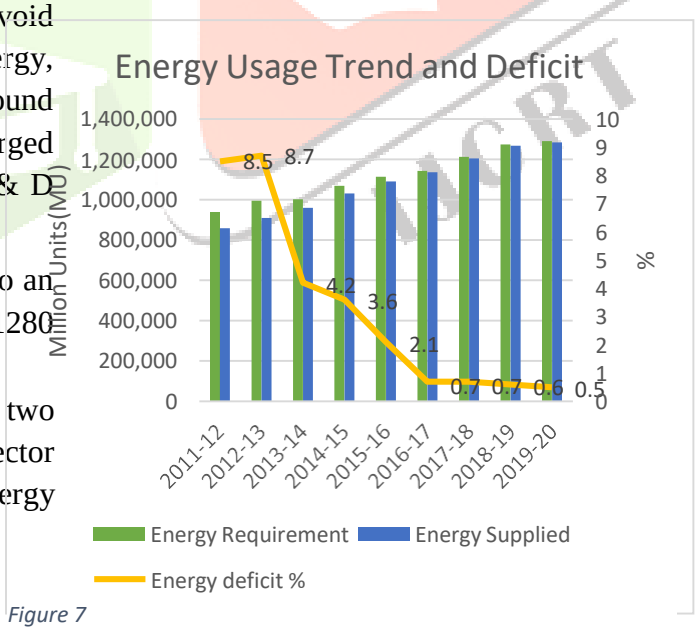

Figure 7

Source: Adapted From (Central Electricity Authority, Annual Report 2019-20, 2020, p. 65)

Power Load Factor and Revenue Losses

In the last decade (2011-20), degrading and inefficient thermal plants resulted in aserious issue of decreasing plant load factor (PLF) (CEA, 2020). Figure 8 Many reasons behind this include a low grade ofcoal, a shortage of fresh water, inadequate upgradation and maintenance.

In this ongoing pandemic, the power sector is adversely affected due to low power consumption in the industrial and commercial sector. Consequently, power generation showed "a sharp decline from 1154 BU to 1115 BU last year by April 20 – March 21" (CEA ES, 2021).This missing demand put the growth of the uprising power sector in a halted position.

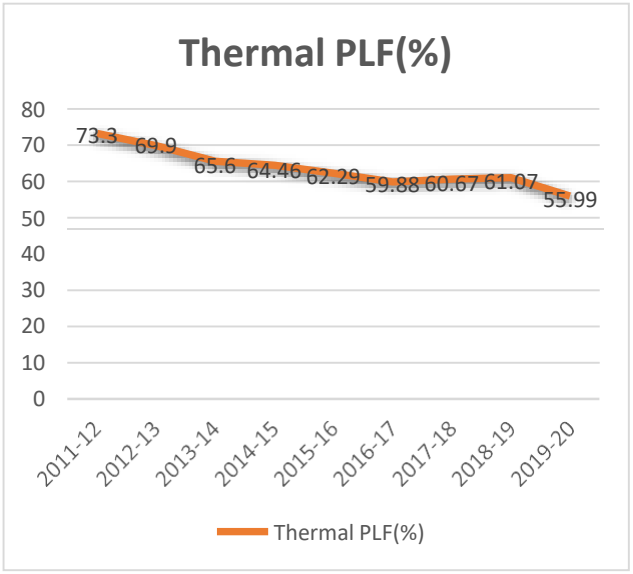

Figure 8

Source: Adapted From (CEA, 2020, p. 26)

All three tiers of the power sector, i.e. generation, transmission, and distribution, are going through a series of reforms by concatenating through the UDAY scheme to boost their performance and are under a process of revival. The need for this revival antidote is a must as these utilities are facing huge losses and increasing debt. emphasis on the financial depreciation of electricity distribution companies (DISCOM) which they faced for a prolonged period, which led Discoms being in a debt trap. Power sector combined losses climbed from "Rs 40,053 crore in 2017-18 to Rs 52,838 crore in 2018-19" (PFC, 2020). Figure 9 For the last five years, losses have shown a declining trend with the advent of government reforms, but again the trend is stepping up towards its former path. Such hefty losses made the power sector's financial health deteriorate day by day and, further, for remedial purposes, the borrowing of the sector tend toward a crowning height of debt. Aggregate borrowing of the power sector climbed to Rs 8 lakh crore in the year 2019. Borrowing trends for the last couple of years show an upsurging trend, which is not desirable for India's anticipated growth.

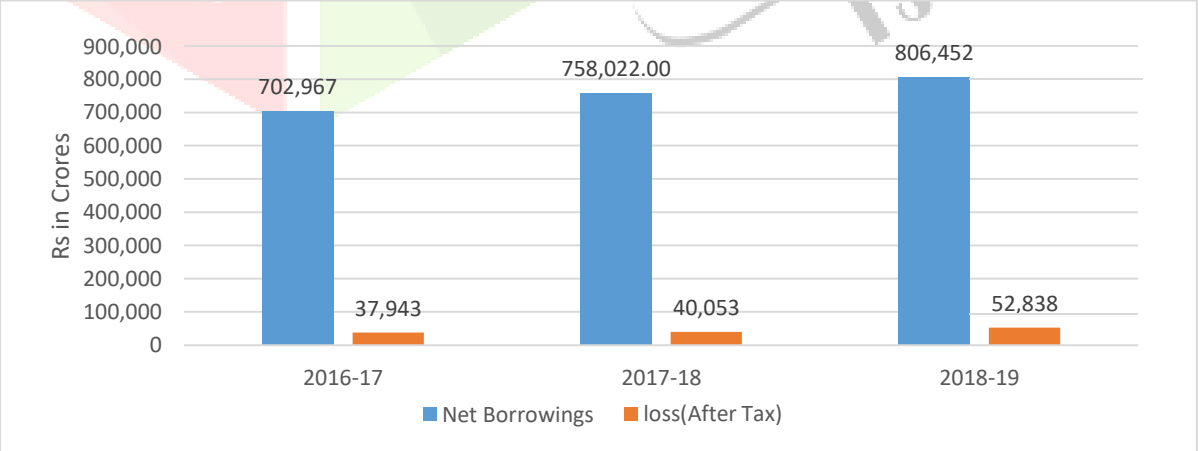

Figure 9

Source: Adapted From (PFC, 2020, pp. 128,130)

Conclusion

According to the findings of the preceding study, energy requisition is the elemental need to keep up economic growth as anticipated. As a result, policymakers should concentrate their efforts on key areas that impact economic growth. The Indian power sector's policy structure has undergone a dramatic transformation. Ongoing reforms serve as a spark to drive economicgrowth. Diversification is essential, as reliance on a particular type of resource such as coal brings several drawbacks, which include environmental concerns, import dependency, high transport costs, and huge maintenance costs of thermal power plants. The main concern that isbubbling up is whether India can maintain the synchronization between its expanding economyand rising energy demand.

The objectives and deadlines for the energy sector must be updated timely to prevent any further rise in non-performing assets of power infrastructure. Regarding the problem of coal stock, it can be assumed that the present structure will not be able to meet rising energy demands in the long run, but the shift to alternative energy resources like solar, wind, hydro, and nuclear power make it practically achievable. India should emphasize its renewable energysector to tackle the burden of dependency on conventional sources of energy. In the current scenario of facing an unexpected economic slowdown, we have to work with a modified roadmap for the power sector that is steered by transparent and scientific strategies, mapping the way to safeguard and advance the country's interests.

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