TOPIC

E-portfolio on an Energy crisis in India

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➢INTRODUCTION

This e-portfolio will discuss about energy crisis that are affecting Manufacturing Industries in India

This e-portfolio is on the energy crisis that India is facing on account of a shortage of raw materials such as coal, which has a direct impact on the manufacturing sector. A heat wave that is baking large areas of South Asia region is causing power outages, and India is experiencing the power crisis from past six years, causing direct damage to the manufacturing supply chain and raising the cost of goods and services.

Over the past 30 years, India's energy demand has increased at an average rate of 3.6% per year as a result of the country's economy expanding quickly. As a result of the crisis, manufacturing firms such as automobile, steel, and handloom companies raised their product prices due to increases in fixed costs (electricity price, raw material cost, and labor cost) in order to maintain a stable profit margin. Given that it provides the energy needs of numerous other businesses, the Indian power industry is one of the biggest and most significant industries in India. It is one of the most important infrastructural elements that has an impact on our country's prosperity and economic growth and makes a direct contribution towards impacting the economies of scale of the manufacturing sector in India.

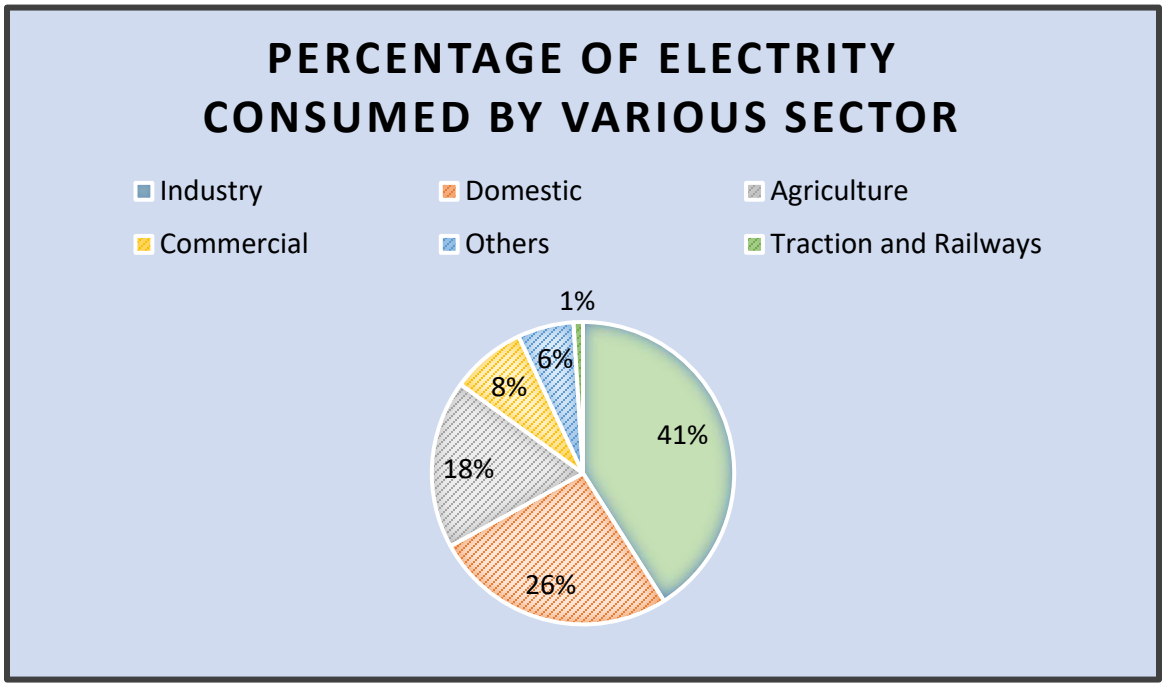
➢OVERVIEW

At Final Prospective…….

In final prospective we will detail out a clear story in response to the crisis based on information collected from journal articles, government publications, printed media, and the Internet at the end of this project e-portfolio, as well as how business firms worked around this energy problem to sustain their business in the global market.

❖ Decentralization of Energy by various sector

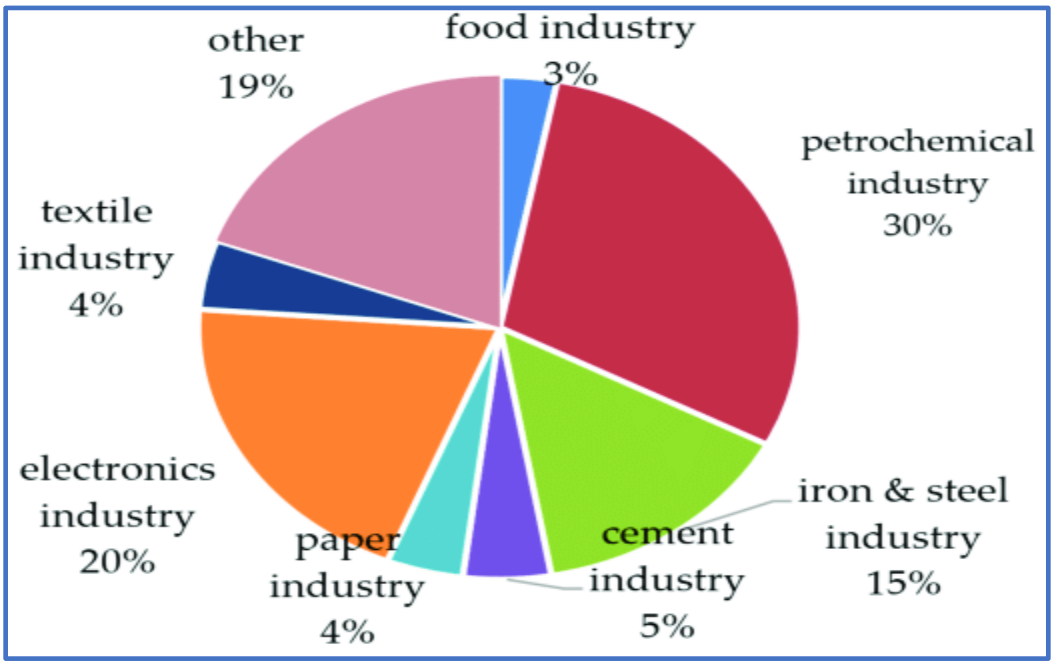
State utilities, central utilities, and private enterprises all produce electricity in India. The pie chart at the bottom shows how much installed power capacity is consumed by each of the sectors in India,



❖ Major Player across sector which provide energy supply to private sector

Private Sector	Public Sector
Adani Group	NTPC
Reliance Infrastructure	Power Grid Corporation
TATA Power	

❖ Electricity consumption by different sectors in India



Source: Tata Energy Research Institute, 1989.

➢ OBJECTIVE

❖ Objective of the e-portfolio Analysis

(*The objective of the e-portfolio analysis is to find out the following*)

- Problem the manufacturing sector is facing (impact on economies of scale).
- Issues local consumers are having as a result of rising prices for goods and services.
- Other measures taken by the manufacturing sector to address the electricity issue in the production chain
- Manufacturers face challenges as a result of fierce competition and an increase in the price of final output. (Discussed with respect to the porters' five forces)

➢ ANALYSIS

Impact on economics of scale: a phenomenon wherein average expenses per unit of output fall as the scale or magnitude of an organization's output increases. Due to the crisis, the manufacturing sector is facing negative economies of scale as the cost of electricity is increasing, which in turn increases the price of goods/products and services.

Some manufacturers, in order to survive in a competitive market, have reduced the final price of goods or products and services, which has created rivalry among existing competitors, this has been detailed out in reflection section below in this e-portfolio.

❖ Impact on Economies of Scale

Under Economies of scale refer to the average cost per unit of output decreases when the scale or magnitude of the production increases. Due to the increase in the price of raw materials, the cost of goods also increases, so the average cost per unit of output is still be higher as compared with the increase in the scale or magnitude of the output being produced by a firm.

It has been clearly demonstrated that economies of scale are not significantly impacted, but they are certainly impacted directly if the cost of inputs rises in comparison to the average price of the final output generated prior to the rise in input costs (electricity is considered an input).

As per the economic survey, the three factors that have the biggest negative effects on respondents' growth forecasts are rising inflation, a lack of raw materials, and disrupted supply chains. Energy prices, according to 38% and 51% of participants, had a negative or significantly unfavorable impact on their outlook. 53% and 21% of respondents, respectively, say that inflation (excluding energy prices) has had a negative or significantly negative impact on their forecast. The lack of raw materials, which 43% or 33% of participants believe has a severe or strongly unfavorable impact, is the third most powerful influencing factor. The interruptions to supply chains come in fourth place with 48% and 27%, respectively.

❖ Problem to a local consumer due to rise in price

Due to the rise in the price of final goods/products and services, it is creating a scenario of inflation. When prices rise unevenly and for some of the consumers' purchasing power falls, the inflation's primary cause could be corrosion of real income. Rise in prices of products and services would have an impact on purchasing power of the people who would give and receive fixed amount (Fixed Interest rate) to do the purchasing.

In some scenarios, Consumers buy and stock up on necessities as well as durables like furniture and appliances. However, they become less likely to invest in luxuries like cars and other discretionary goods and services, like automobiles.

Companies across industries are struggling as a result of the rising cost of raw materials, the weakening rupee, and the rising price of crude oil. Look at the inflation mystery and how it affects consumers.

Russia's war in Ukraine halted economic recovery just as India decided to stop all COVID-19 containment efforts as of March 31 and as the country's economy was gathering speed. With the price of crude oil, steel, aluminum, and food all skyrocketing, businesses are left with no choice but to increase prices. Automakers fear that further price increases may reduce demand in markets like two-wheelers. FMCG companies are attempting to counteract the increase in commodity prices brought on by supply chain interruptions.

➢ REFLECTION

Under this reflection the economic crises are clearly evidenced in Plasto Pvt. Ltd. Case. The Plasto group of companies is an ISO 9001-2015 certified company incorporated in 1991. Due to extreme rise in electricity price in state of Maharashtra in Indian region this firm in this region could be one of the critical examples of the crises in my e-portfolio.

The "Plasto Pvt. Ltd." a popular plastic and pipe brand in India, now has to spend 6.2 rupees extra to produce a plastic drum and pipe in 2022, which is up from 4.7 rupees in 2020, owing to higher electricity costs per unit. Due to the load-shedding, the production cost has increased by over 7 rupees per unit, including labor, transport, and storage costs.

After selling the product at a higher price, sales decreased because consumers had the option to switch to substitute goods, reducing the firm's profit margin. In order to sustain itself in the competitive market, the "Plasto" brand started facing competitive forces from its external competitors, which are briefly strategized in Porter's five forces below.

❖ Remedial action taken to overcome the Crises by Plasto Company.

It is difficult for a manufacturing unit to switch to a different energy supply source in a short period of time. Thus, the firm kept paying a higher price for the electricity until they found an alternative source to reduce the cost.

In the long run after 4.6 years, Plasto Pvt. Ltd. have spent huge amounts (capital expenditure) on adapting alternative sources of energy; thus, firms could benefit from the new energy source and maintain a stable supply chain. At the same time, manufacturing units could stabilize their output costs to maintain a stable customer base and a systemic profit margin.

PLASTO INVESTMENT ON ALTERNATIVE ENERGY PRODUCTION

- Firm has set up 678 MW of Solar energy system by implanting 548 Solar panels around its factory boundaries – Total expenses incurred 89,75,851 Rs to set up this alternative form of electricity production.
- Along the side firm has signed contract with State Energy Renewable committee to invest 1 Cr in INR to set up windmills in Banwadi district which is 23Km from Plato's production unit, this project will generate approx. 1750 MW of electricity for the local village and for the Plasto production factory.

❖ Remedial action taken to overcome the Crises in India.

India recently had a power crisis as a result of a daily peak power shortage that reached 10,778 MW and an overall energy deficit of 5%, with deficits as high as 15% in some regions. The electricity distribution board turned to load-shedding as a result, which led to prolonged power outages for many households and rationed supply for business operations.

This issue is the result of thermal power plants running out of coal. But this is hardly a brand-new phenomenon. The shortage happens virtually annually, and despite the government's numerous efforts, it has not been resolved.

Also In the long run, manufacturing firms partially modernized to renewable energy sources like solar and wind energy. At the same time, hydropower and biomass are important components of our energy system. Solar power: In photovoltaic systems, solar panels convert sun-light into electricity directly. Also, at same time Government adopted various policies and signed contract at national level with various countries like Africa and Bangladesh for the import of coal. Also signed joint ventures with private firm to set up new projects for Renewable source of energy production.

All the other aspects and policies and guidelines are detail explained in the end of this e-portfolio.

❖ Challenges faced by manufacturers due to competitions.

For the ten years following the economic reform in 1991, the impact of competition in product markets on the increase in productivity rates of firms in the Indian manufacturing sector is analyzed. The development of variables that reflect the intensity of product market competitiveness has been improved by this study. According to empirical findings, a firm's productivity growth increases when its market share decreases, and this impact is particularly pronounced in less concentrated markets.

The transition from monopolistic to perfect competition as well as a rise in the number of firms, the number of managers with whom each manager is compared, the price elasticity of demand, the substitutability of products, and the proportion of entrepreneurial firms to managerial firms, among many other factors, are examples of how market competition has intensified.

Today's manufacturing businesses, especially those in India, face more intense competition. For many, the issue is one of basic survival. The fact that their direct rivals rely more on something that is tougher to imitate than outstanding product design, marketing acumen, or financial strength makes this task more challenging. But many of these businesses have consistently ignored their manufacturing organizations for a very long time. They are currently having difficulty regaining their lost brilliance in production as the impact of that neglect becomes increasingly obvious.

STRUCTURAL FACTORS AFFECTING INDUSTRY RIVALRY

1. Numerous or evenly matched competitors
2. Slow industry expansion
3. High storage costs or fixed costs
4. insufficient distinctiveness or high switching costs
5. Large increases in capacity were made.
6. High barriers to exit.

➢ RECOMMENDATION

❖ How did manufacturing firm on overcome energy cries

Industries are very concerned about power outages caused by coal shortages because they worry about production delays. Despite the fact that things have gotten better, we still lack sufficient coal supplies. Adapting the renewable energy form such as solar energy, wind energy, biogas or biofuel, ocean/tidal energy, etc. is the only long-term answer to this issue. The fact that India's demand for electricity is higher than its supply and is continuing to rise as a result of our increasing economy is one of the main causes of the country's current energy problem. The commercial and industrial sectors use a lot of electricity, and they keep using more. Why? India is still evolving for this reason. To function, our industries require a steady stream of energy. The conventional sources, like thermal, satisfy the majority of this requirement. Even while it's happening, the switch to renewable energy takes time.

During the second COVID-19 wave, this energy use dropped. But neither relief nor a solution could be found in this. Soon, economic activity began to pick up again, although this time more quickly in order to make up for lost time. Industries focused on making up for lost time put a greater than anticipated demand on thermal power plants. The already active non-renewable energy sector was put under further strain by this rise in consumption. We had the fourth-largest coal reserve in the world, but we couldn't support the energy-hungry industries. Industries have come to the conclusion that if we continue to rely on an inadequate energy infrastructure, we will be in this predicament for a very long time.

➢OPINION

In my opinion as per the International Energy Autonomous body for Asian region, the solar energy production is one of the most reliable and cheapest form of energy production. The Solar energy completely depends on sun light, as Asian counties season is periodic and reliability of sunlight is higher as compared to European nation, thus solar energy would be perfect to mitigate the electricity demand.

SOLAR PANELS FOR INDUSTRIAL & COMMERCIAL NEEDS

In India, solar power generation would become 50% less expensive than coal by 2040, according to new research, and solar power facilities would draw significant investment. Additionally, as more solar companies have sprung up in India, the cost of installing both industrial and commercial solar panels have continuously declined over time. Due to the current worldwide coal problem, it is now possible to reduce reliance on fossil fuels and learn how to use green and renewable energy sources. For the commercial and industrial sectors, switching to solar panels has various benefits.

Non-renewable markets frequently see unpredictably rising prices, which can raise their operating costs. By putting solar panels on your business or industrial property, you can become somewhat independent from local power providers in terms of electricity. It is also important to note that adopting solar power for businesses would move those companies one step closer to sustainable development.

➢FINAL CONCLUSION

The Indian energy sector depends mostly on coal for the production of electricity. Since 2016, coal imports have increased, prompting authorities to recognize that a coal shortage could lead to an energy crisis in the coming year. In the year 2018, India imported almost 68% of its coal from other countries due to a shortage within the nation. Thus, beginning in 2018, the energy sector began to decline energy production, primarily affecting the manufacturing and agriculture sectors due to frequent power outages. At the time, India was not overly reliant on alternative energy sources for electricity production; thus, this sudden reliance on another country made India realize that they are in an energy crisis because they are unable to produce enough electricity to meet rising demand. Grid demand peaked at 207 GW in April 2022, and the pipeline of new projects was extremely thin at the start of Pandemic.

❖ Outlook

In my outlook the Government played very crucial role in resolving this crises problem they have setup various long term and short-term policies and framework to work upon this crisis.

Government of India has also signed bilateral contracts and various treaty with few European countries to seek regulatory guidelines and support how developed nation worked to resolve the energy problem in their respective countries.

POLICIES AND FRAMEWORK

Manufacturing sector was mostly affected as compared to the agriculture and domestic household sectors. The economies of scale started declining for manufacturing firms, and rivalry started among existing companies in order to maintain market shares. Later, rather than sooner, the firm started realizing the decline in profit margin due to the rise in the price of input, and the product-intensive company started shifting to other forms of electricity production to reduce their input cost. But at the same time, it also increased their capital expenditure to set up new equipment and technology, or R&D, to approach new alternative forms of energy production like solar or wind energy.

Along with the joint agreement with the government and the new scheme by the Solar Energy Corporation of India, the government and company together incurred capital expenditures to set up new projects in the pipeline for nuclear energy and thermal energy production so as to keep maintaining its exports to other nations. The electricity crisis also contributed to an economic slowdown, as public and private manufacturers reduced their exports, causing the economy to slow. India is still dealing with the same issue, albeit not to the same extent as in 2019-2021.However, the projects in the pipeline are expected to be completed by the middle of 2023, stabilizing electricity production and providing an economic boost.

Government implemented policy and strategy reform in the short and long run.

- Planning must shift from being primarily focused on managing scarcity to being flexible and resilient.
- In order to give stakeholders incentives to achieve or exceed compliance as well as consequences if they don't, feedback loops must be added to the ecosystem.
- The focus of policy should be on long-term structural solutions that address the financial viability of distribution and a reliable resource planning mechanism.

➢ REFLECTION ON TOPIC CHOICE - "ENERGY CRISES"

As India is emerging economy and the development of the nation depends on the availability of resources and development of infrastructure. Thus, I took Energy/Electricity crises in India as a topic of my e-portfolio. Since past decades Indian economy was progressively developing but the energy shortage was a main hindrance to its progress.

I am sure that as country continue to progress the energy is going to be the backbone for Indian Industrial and economic progress. It is crucial for the nation to be fully source sufficient in order to sustain adapt global prosperity. I have noticed that India was facing lot of challenges to adapt sustainable energy development infrastructure and as per my research India is also going to build new three nuclear energy plant till 2030 with celebration with Germany and Israel.

As various manufacturing sectors and other small scale & medium scale Industries adopted and implemented various guidelines and procedures to solve this issue in long run. As a result, we hope that by 2024, governments and the manufacturing chamber of commerce will be working harder to develop a better strategy for resolving India's complete electricity crisis in short run till 2028.

However, Indian's dependency on other nation has reduced for import of energy source unlike it has put into action other framework for renewable energy production framework.

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