# Plugging into the Future:

# An Exploration of Electricity Consumption Patterns

## 1. INTRODUTION

### 1.1 OVERVIEW

Whereas electricity consumption represents the amount of electrical energy that has been consumed over a specific time, in units of Wh (or kWh), electricity demand represents that rate at which electrical energy is consumed for a needed output rating, in units of W (or kW).

### 1.2 PURPOSE

Annual electricity consumption per capita serves as an important measure of a country's electric power development. Generally speaking, electricity consumption grows faster when the industrialization process develops quickly and goes down rapidly when industrialization is completed or near completion.

## 2. PROBLEM DEFINITION AND DESIGN THINKING

### 2.1 EMPATHY MAP

<table>
<tr>
<td>  </td>
<td>SAYS:<br>Electricity is an essential part of modern life.</td>
<td>  </td>
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<tr>
<td>THINKS:<br>I think electricity will create a new world.</td>
<td>  </td>
<td>DOES:<br>Electricity is really just organized lightening.</td>
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<tr>
<td>  </td>
<td>FEELS:<br>I feel like the world will change a lot.</td>
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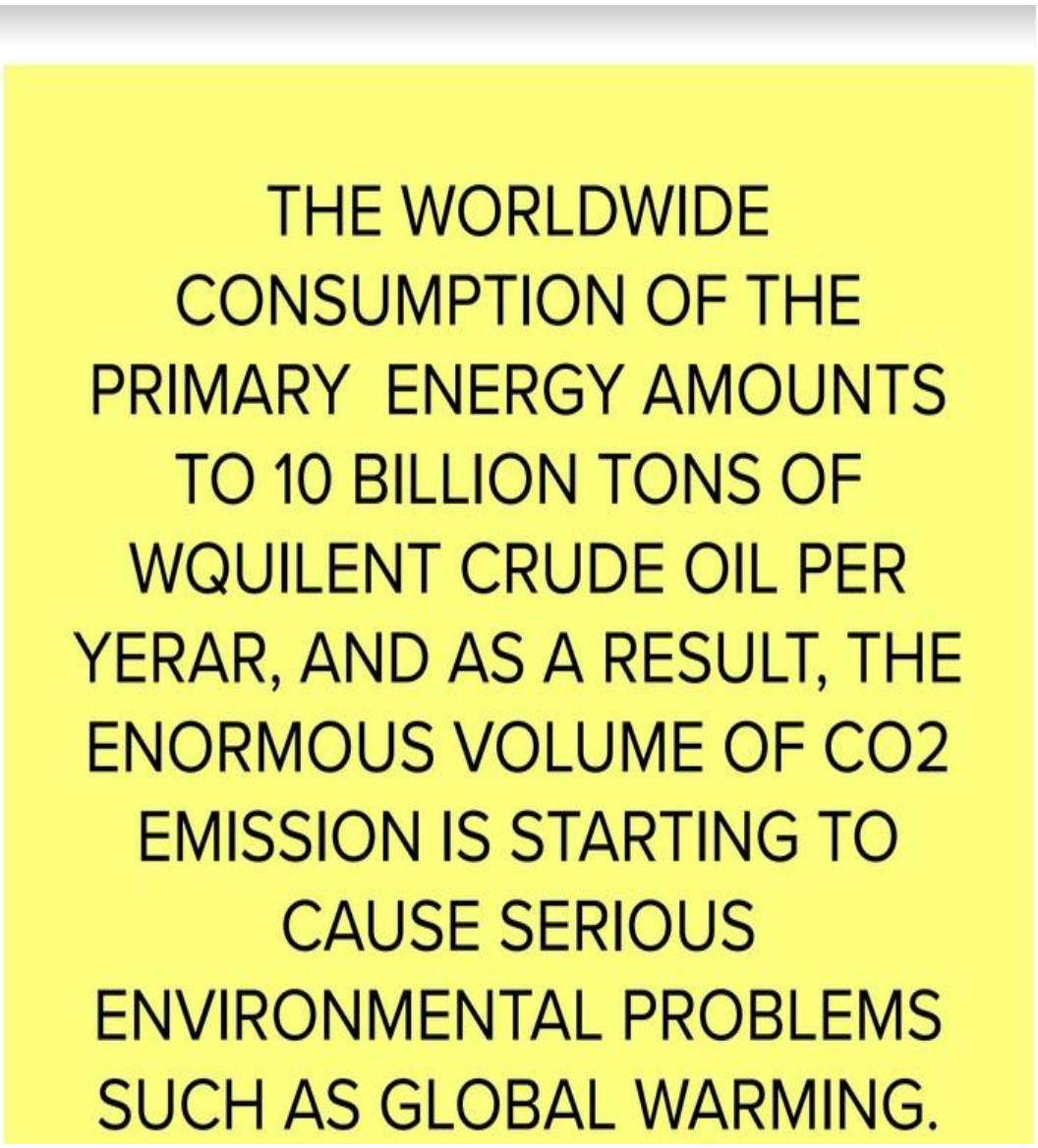
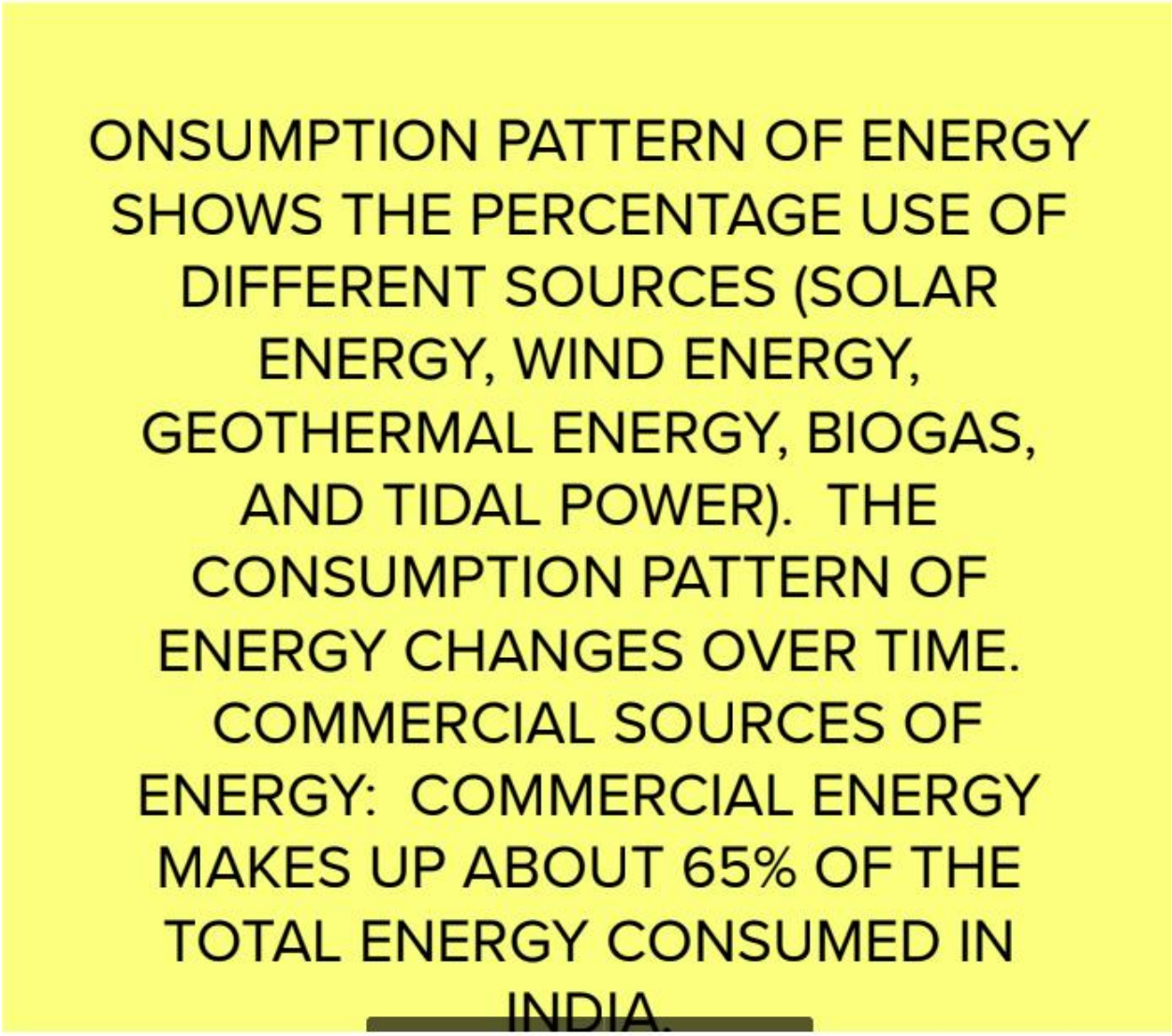
## 2.2 BRAINSTORMING MAP



THE PRESENT ENERGY USE IS MOSTLY IN THE AREAS IF DOMESTIC COOKING ANDLIGHTING, AGRICULTURE, TRANSPORT AND INDUSRRIAL SECTORS. INDIA'S ENERGY BASKET HAS A MIX OF ALL THE RESOURCES AVAILABLE INCLUDING RENEWABLES. THE LARGEST ENERGY SOURCE IS COAL, FOLLOWEED BY PETROLEUM AND TRADITIONAL BIOMASS.




## 4. ADVANTAGES AND DISADVANTAGES:

**Advantages of electricity :**

- It is a clean, safe, cheap and convenient source of energy.
- Lower maintenance cost.
- More efficient.
- No tailpipe emission.
- We all know that it can be set up in many sizes.

- It doesn't require as many employees.
- Reduces greenhouse emission.

**Disadvantages of electricity :**

- More expensive than gasoline.
- Loss of fish species.
- Sometimes messes up wildlife.
- Dependent on precipitation.
- More power plants and more pollution.
- Damming can cause loss of land suitable for agriculture as well as recreation.
- Cost for construction.
- Change in river or stream quality.

## 5. APPLICATIONS

The Per Capita Electricity Consumption which was a mere 16.3 units in 1947, has increased to 1208 units in 2019-20. In the last 3 years, the shortages have reduced substantially and, in fact, at present we have unutilized generating capacity.

The most usage of Electricity in India :

- Entertainment.
- Healthcare.
- Engineering.
- Transport and Communication.
- Outdoors.
- Household.

- Commercial.
- Office.

### Uses of Electricity in Entertainment

- Listening to music on MP3 players.
- Watching Television.
- Playing movies on DVDs, VCDs or VCRs runs on electricity.

### Uses of Electricity in Healthcare

- Surgical operations
- Doctors need a powerful light during an operation on a patient
- without electricity, the operation can prove fatal.

### Uses of Electricity in Engineering

Constructions of buildings and structures for the convenience of people require electricity at every step. Building houses, installing gates and windows, and welding materials require current electricity to operate the machines.

### Uses of Electricity in Transport and Communication

Reaching places or communicating from a different corner of the world is only possible because of electricity. A power cut during airline travel can be dangerous.

### Uses of Electricity in Outdoors

The street lights on the road use electricity to function, even the pool requires electricity to heat the water in colder regions. The lawnmower, which is used to cut grass, uses electricity to operate. The water sprinkler for the grass on the lawn uses electricity as well.

### Uses of Electricity in Household

Starting from toasters to refrigerators, microwaves, washing machines, dishwashers, electrical chimneys, and many more appliances which are simple to use and made for the convenience of day-to-day activities use electricity to function.

### Uses of Electricity in commercial places

For the production of various materials, the factory uses heavy machinery which always runs on electricity. Even the magnets, which are giant-like structures, require electricity to keep them charged for lifting heavy metals.

### Uses of Electricity in Office

We go to work in offices in which most things run on electricity. The lights, lifts, AC, coffee machine, ID card reader, biometric scanners and everything else require electricity.

### Uses of Electricity as Fuel

Electrical energy comes under renewable energy and we can produce it using most of the natural resources available to us. Today, things which were running on fossil fuels, such as cars and bikes, are now made in such a way that it runs on electricity (like solar-powered), which will be more convenient in the future.

### Uses of Electricity in Space

The satellites and probes which are sent from the earth for space expeditions run on electricity. The electricity is generated with the help of a generator or is battery-powered. The Apollo mission for the landing of humans on the moon would not have been possible without the use of electricity.

## 6. CONCLUSION

This Project aims to investigate the intersection between electricity consumption economic growths in the Republic of Benin. A times series analysis is driven to causal flow in the context of Granger causality from 2019-2020 . The Stationary test, the Johansen co-integration test, the vector autoregressive (VAR) model, and Granger causality test were used as econometric approach. The empirical results established the existence of Granger causality running from electricity consumption to economic growth with feedback effect. According to empirical result of this paper the electricity policies will have positive impact on economic growth in Benin. The study therefore recommends that the government should continue to provide more investment in this era to attract more foreign investors to boost the economic and alleviate the poverty also reduce the unemployment. The policy implication of the findings suggests that energy conservation policies would not be implemented without undermining long-run economic growth Republic of Benin. It is therefore necessary for the government to have an integrated energy policy, which will guide future energy related sub-sectorial policy developments, in order to avoid policy conflicts which may otherwise arise.