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Clean Electricity

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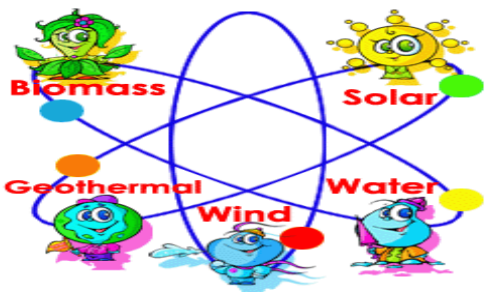
Abstract- **INDIA'S energy outlook from fossil fuels sources, in particular in the sector of oil and gas, point out to a very high import dependence in the next twenty years. On the other hand, the prospect of obtaining energy from renewable energy sources has a positive outlook due to abundant availability of such resources in various parts of the country. Out of all these sustainable resources, solar, wind and biomass energy are some of the fields where past and present development have already witnessed major achievement. The above development has benefited certain areas of the country, while at the same time it has helped to a certain level to develop the local economy. Solar energy in particular, from a recent governmental policy, has gained the momentum as one of the most important sources of energy for the country.**

1. INTRODUCTION

By looking across the whole power sector, the proposed clean power plan will boost our economy, protect our health and environment, and fight climate change. Coal; natural gas, hydro power, nuclear, wind and solar all of these will supply the electricity which we use every day in our homes and businesses. When the fossil fuels like coal, are burnt to produce electricity, they release carbon dioxide (CO2), trapping the heat in the atmosphere and leading to climate change. Global climate change could threaten every way of life. Floods can destroy our homes and communities, drought can disrupt our food production and water supplies and severe weather can cause the damage to nation's economy and infrastructure. The best and cheapest way to cut carbon pollution is to generate more power from the cleanest sources and then use that energy more efficiently. Dirty electricity can cause electronics to perform poorly especially microelectronics, high voltage spikes, for example can cause electronic component damage both immediate and long term. Computer memory loss, program corruption and operating errors. Because electrical pollution can damage equipment and decrease the life span of hardware, it is particular cause of concern for data centre administrators. By providing enough time in flexibility in 15 years, we can cut carbon pollution from power sector, by at least 30%. We can also cut the pollution that leads to smog and soot by 25%,yet even with this big reductions, coal and natural gas will continue to supply most of our electricity in the future, and including low carbon renewable sources provide more than 30% of power till 2030.



II.I HAVE ACCESS TO ELECTRICITY. WHY SHOULD I CARE ABOUT THIS GOAL?

For many decades, fossil fuels such as coal, oil or gas have been major sources of electricity production, but burning carbon fuels produces large amounts of greenhouse gases which cause climate change and have harmful impacts on people's well-being and the environment. This affects everyone, not just a few. Moreover, global electricity use is rising rapidly. In a nutshell, without a stable electricity supply, countries will not be able to power their economies.

III.HOW MANY PEOPLE ARE LIVING WITHOUT ELECTRICITY?

Over 1.2 billion people—one in five people of the world's population— do not have access to electricity. The majority are concentrated in about a dozen countries in Africa and Asia. Without electricity, women and girls have to spend hours fetching water, clinics cannot store vaccines for children, many school children can-not do homework at night, and people cannot run competitive businesses. Another 2.8 billion people rely on wood, charcoal, dung and coal for cooking and heating, which results in over four million pre-mature deaths a year due to indoor air pollution.

V."RENEWABLE ENERGY SOURCES –POLICIES OF INDIA"

India has a large amount of, supply of renewable energy resources & hence India has decided to organize a program for proper utilization of renewable energy resources. As a result of which, India is the only country in the world to have an exclusive ministry for renewable energy development, The Ministry of Non-Conventional Energy Sources (MNES).

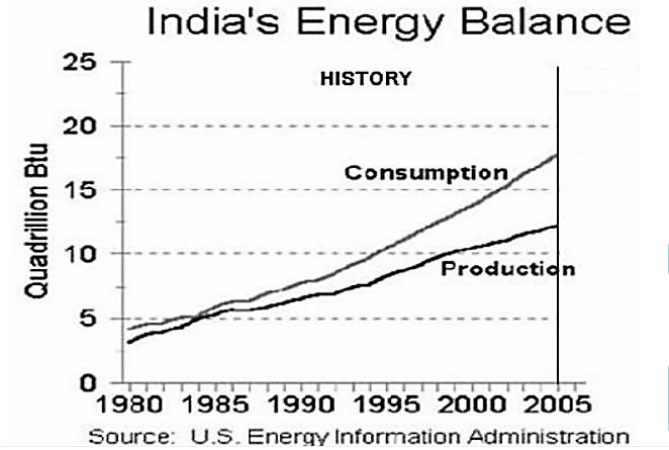
IV.CURRENT SCENARIO OF CONVENTIONAL ENERGY SOURCES IN INDIA.

At present India is a large consumer of fossil fuel such as coal, crude oil etc.Over a past few decades, energy is needed for everything. The electricity requirement is increasing at an alarming rate due to increased population & industrial growth. This rapid increase in use of energy has created problems of

demand & supply. Because of which, the future of Non renewable energies is becoming uncertain.

India ranks sixth in the world in total energy consumption. Coming to power generation in the country, India has increased installed power capacity from 1362MW to over 112,058 MW since independence & electrified more than 50,000 villages. This achievement is impressive but not sufficient. It is matter of concern that 44% of households do not have access to the electricity & as many as 80,000 villages are yet to be electrified. It indicates that India has had a negative Energy Balance for

Decades.



VI.WORKING

Imagine, the electric grid is a joint bath tub that are constantly being filled from many different fossils, each one represents different electricity generation and source such as coal, natural gas, nuclear and wind. Each time you use electricity drain a little water from the bath tub. most of the water been imported from the tap of fossils connected to pure in fossil sources or a dirty water, but some other water comes from a small but growing number of fastest associated with renewable sources, which contribute to pure clean water, as the domain for electricity from renewable sources increases. As the domain for electricity from renewable sources increases, more the clean water goes into the tub and lesser the dirty water from fossil fuel source is needed. over time, as more and more people chooses clean energy, we should start to see the water in the bath tub getting cleaner The quality of electricity is influenced by everything up to and in between the electricity provider and the electronic equipment in question. An uninterruptable power supply (UPS) can help to protect electronics when local power is dirty. So clean power or clean electricity is needed for better clean and easy going life.

VII.What can we do to fix these issues?

Countries can accelerate the transition to an affordable, reliable, and sustainable energy system by investing in renewable energy resources, prioritizing energy efficient practices, and adopting clean energy technologies and infrastructure.

Sources of renewable energy available in India-Potential of India

A. Hydro Power

The hydroelectric power refers to the energy produced from water (rainfall flowing into rivers, etc).The force of flowing & falling water is used to run water turbines to generate energy. The dominant annual rainfall is located on the 6 North/eastern part of India: Arunachal Pradesh, Assam, Nagaland, Manipur and Mizoram and also on the west coast between Mumbai India utilizes twelve primary hydroelectric power plants: Bihar (3), Punjab, Uttaranchal, Karnataka, Uttar Pradesh, Sikkim, Jammu & Kashmir, Gujarat, and Andhra Pradesh (2).The estimated potential of small hydro power n India is about 15000 MW.

B.Wind Energy

It is one of the most environment friendly, clean and safe energy resources. The ten machines near Okha in the province of Gujarat were some of the first wind turbines installed in India. India has the 5th largest wind power installed capacity of 3595 MW in the world. The estimated potential of wind energy in India is about 45,000 MW.

C.Solar Energy

India has huge solar potential. The sunniest Parts are situated in the south/east coast, from Calcutta to Madras. Solar energy can be used in two ways-Solar heating & Solar electricity. A solar power plant offers good option for electrification in areas of disadvantageous locations such as hilly regions, forests, deserts & islands where other resources are neither available nor exploitable in techno economically viable manner. Most parts of the country have about 250 to 300 sunny days. Thus there is tremendous solar potential.140MW solar thermal hybrid power plants with 35 MW solar through component will be constructed in Rajasthan raising India into the second position in the world in utilization of solar thermal. Grid interactive solar photovoltaic

Power projects aggregating 2440KW have so far been installed. The estimated potential of solar power in India is about 20,000 MW.

D.**Biomass** energy

India is very rich in biomass. In the area of small scale biomass gasification, significant technology development work has made India a world leader. A 500 KW grid interactive biomass gasifier linked to an energy plantation 7 has been commissioned under a demonstration projects. The estimated potential of Biomass Energy in India is about 19,500MW.Following is a list of some States with most potential for biomass production: Andhra Pradesh (200 MW), Bihar (200 MW), Gujarat (200 MW), Karnataka (300 MW), Maharashtra (1,000 MW), Punjab (150 MW), Tamil Nadu (350 MW), Uttar Pradesh (1,000MW).As India has such a massive potential of Renewable Energy Sources, It is possible to provide Power to All.

VIII.ADVANTAGES

1. It is renewable,it is there for sustainable and so will never run out.
2. Renewable energy facilities generally require less maintenance than traditional generators.

3. Renewable energy produces little or no waste products such as, CO2 or other chemical pollutants, so has minimal intact on the environment.
4. Renewable energy projects can also bring economic benefits to many regional areas.

IX.DISADVANTAGES

1. Renewable energy is that it is difficult to generate the quantities of electricity that are as large as those produced by traditional fossil fuel generators.
2. Renewable energy sources is the reliability of supply, renewable energy often release on the weather for its source of power.
3. The current cost of renewable energy technology is also for in excess of traditional fossil fuel generation.
4. Renewable energy has extremely large capital cost as it is a new technology.

X.FUTURESCOPE OF CLEAN ELECTRICITY:

Renewable energy is the most efficient way to make a nation independent and self-sufficient. Many industrialized nations have installed significant solar power capacity into their electrical grids to supplement or provide an alternative to conventional energy sources while an increasing number of less developed nations have turned to solar to reduce dependence on expensive imported fuels. Japan, Germany, China and the United States are major markets for solar cells. With tax incentives, solar electricity can often pay for itself in five to ten years. Commercial concentrated solar power plants were first developed in the 1980s. The 392 MW Ivanpah installation is the largest concentrating solar power plant in the world, located in the Mojave Desert of California. The International Energy Agency projected in 2014 that under its "high renewable" scenario, by 2050, solar photovoltaic's and concentrated solar power would contribute about 16 and 11 percent, respectively, of the worldwide electricity consumption, and solar would be the world's largest source of electricity.

XI.CONCULSION

There is an urgent need for transition from petroleum-based energy systems to one based on renewable resources to decrease reliance on depleting reserves of fossil fuels and to mitigate climate change. In addition, renewable energy has the potential to create many employment opportunities at all levels, especially in rural areas. An emphasis on presenting the real picture of massive renewable energy potential, it would be possible to attract foreign investments to herald a Green Energy Revolution in India.

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