

RENEWABLE ENERGY SOURCES AND THEIR TECHNOLOGY

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Abstract

In the paper, you will read what is renewable and how much a percentage of the world uses it and its amazing and important innovations example the Dover house and wind pump oh and the new upcoming techniques for renewable energy.

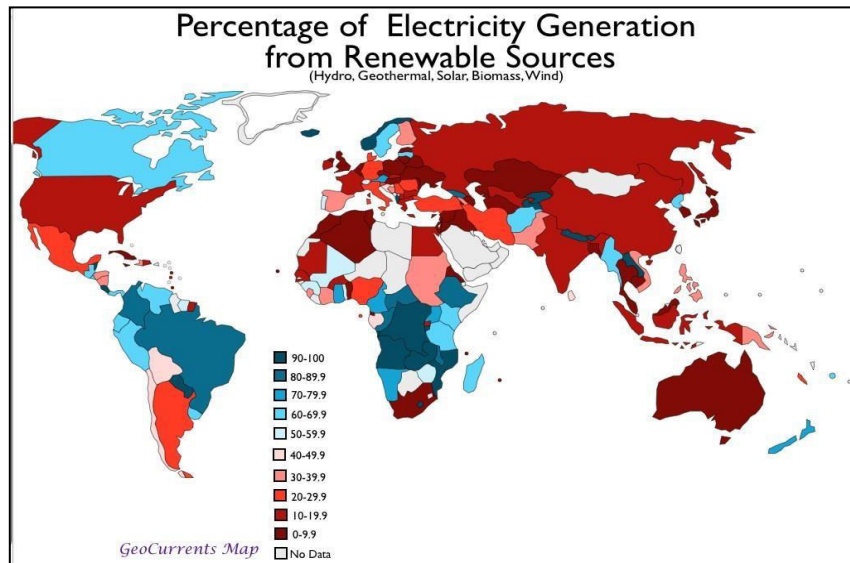
Key words - Renewable energy, natural sources and there are five main types of renewable.

Introduction

Renewable energy, often referred to as clean energy, comes from natural sources or processes that are constantly replenished. For example, sunlight or wind keep shining and blowing, even if their availability depends on time and weather. There are five main types of renewable which are solar energy, Wind energy, Hydro energy, tidal energy, geothermal energy, Biomass Energy. Renewables have become very popular as it reduces the usage of fossil fuels and is completely based on natural resources example: the sun and the wind.

[**Figure 1: Renewables overview**]





[Figure 2 : Percentage of electricity Generation from Renewable Sources]

Fossil fuels

From the late 1800s until today, fossil fuels—coal, petroleum, and natural gas—have been the major sources of energy but what is fossil fuels? Decomposing of plants and other organisms, buried beneath the layers of sediment and rock have taken millions of years to become the carbon rich deposits also known as fossil fuels. Along time ago, are beautiful earth was covered with swamps fill with various microorganisms trees, and other plants and as these plants and organisms died they drowned to the base of the swamps and oceans that formed layers of a spongy material which is called peat as the years passed the peat was covered with sand and clay and other minerals which converted the peat into sedimentary rocks then over a few years different types of fossil fuels developed depending on the combination of organic matter present, how long it was buried, at what temperature and it's pressure conditions existed when they were decomposing and the types of fuels are coal, natural gas and mineral oil that supplies about 80 percent of the world's energy these fuels can be obtained through mining and extraction inside the land.

Solar energy

Solar power is energy from the sun that is converted into thermal or electrical energy. Solar technologies can harness this energy for a variety of uses, including generating electricity, providing light or a comfortable interior environment, and heating water for domestic, commercial, or industrial use

Statistics of reliance in solar energy

In the solar energy, we are present both in the Photo-Voltaic (PV) and Concentrated Solar Power (CSP) segments. We successfully commissioned a 40 MW solar PV project in Pokharan, Jaisalmer, and Rajasthan in March 2012. We also

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commissioned the world's largest compact linear Fresnel reflector (CLFR) based CSP project 100 MW in November 2014. In the wind energy sector, we commissioned a 45 MW wind project in Vashpet, Maharashtra in June 13.

Reliance Power and the Government of Rajasthan (GoR) signed a Memorandum of Understanding (MoU) to develop 6,000 MW of Solar Power projects in the State of Rajasthan over the period of next 10 years. Reliance Power is also pursuing opportunities for setting up of Solar Power projects in various other States of the country.

Wind energy

Wind energy (or wind power) refers to the process of creating electricity using the wind or air flows that occur naturally in the earth's atmosphere. Modern wind turbines capture kinetic energy from the wind to generate electricity.

Hydro energy

Hydropower, also known as water power, is the use of falling or fast-running water to produce electricity or to power machines. This is achieved by converting the gravitational potential or kinetic energy of a water source to produce electrical or mechanical power.

Statistics of THDC INDIA LIMITED in Hydro Energy

Koteshwar Hydro-Electric Project (400 MW), located 22 km downstream of Tehri, is an integral part of Tehri Power Complex comprising of Tehri Dam & HPP (1000 MW), Tehri PSP (1000MW) and Koteshwar HEP (400MW) to develop Hydro- electric potential of river Bhagirathi. It will facilitate the functioning of Tehri Power Complex as a major peaking station in Northern grid as reservoir created by Koteshwar Dam having a live storage capacity of 35.0 MCM will function as lower (balancing) reservoir for Tehri PSP. This project is also regulating water releases from Tehri reservoir for irrigation purpose.

Geothermal energy

Geothermal energy is the thermal energy in the Earth's crust which originates from the formation of the planet and from radioactive decay of materials in currently uncertain but possibly roughly equal proportions. Statistics for The Geysers is a geothermal field located in California's Maya camas Mountains, approximately 115km north of San Francisco. The Geysers is a geothermal field located in California's Maya camas Mountains, approximately 115km north of San Francisco. It is one of the world's biggest single geothermal field, comprising of 22 geothermal power plants with an installed capacity of **1,517MW**.

Biomass Energy

Biomass is an organic material that comes from plants and animals. Plants produce biomass through photosynthesis. The most common biomass materials used for energy are plants, wood, and waste. These are called biomass feedstocks. Biomass can be burned directly for heat or converted to renewable liquid and gaseous fuels through various processes.

Dover house

Now that we know what are solar panels there is a very popular invention named the Dover house invented by the sun queen Maria Telkes. When Maria Telkes joined the Massachusetts Institute of

technology for the solar energy project Maria started to work on her idea of storing solar energy to utilize it later to heat up a house but had to stop it as she got to know the soldiers and sailors were left stranded for days without food or water in the Pacific Ocean so she designed a machine that would purify water for the ocean so they could drink it and named it the solar still. Back in the time heating up a house was a very big task; it required a furnace that was to be fed with fuel, which was very expensive. That is when she found a magical salt called Glauber salt, but her superiors didn't allow it. Then came the women to rescue: Elinor Raymond and Amelia Peabody. The house was built in a chilly weather in Dover, thus the name Dover House, after they built the house it was a success.



Micro-Hydroelectric Power Harnesses Toilet Flushes and Showers South Korean researchers believe we may soon be able to generate electricity from toilet flushes, showers, faucets and gutters. Using a transducer that harnesses flowing water to generate small amounts of renewable energy, such devices might one day contribute to powering our electronics.

Wind pump

The water pumping windmill is a simple, efficient design. The blades, also known as sails, of the windmill wheel catch the wind which turns the rotor. The wheel assembly is attached to a hub assembly by long arms. The hub assembly drives a geared mechanism that converts rotary motion to an up-and-down motion. The innovator of the wind pump is David Hallay.

The upcoming strategies of renewables

The strategy for improving renewables are energy savings on the demand side, efficiency improvements in the various sources of renewable technology. Some other points on upcoming renewables are

- Solar Will Become 35% Cheaper By 2024.
- Onshore Wind Energy Capacity Will Increase 57% By 2024.
- Hydroelectric Capacity Will Rise 9% By 2024.
- Geothermal Capacity Will Increase 28% By 2024.

Conclusion

Finally I can conclude from their entire journey that fossil fuel play an key role in our environment there were various factors that I have learnt over this process which include why we should not use fossil fuels, what are renewables and it's types how it is helpful for us and the environment not to forget it's incredible inventions and the upcoming and latest strategies for renewable energy.

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