



Why Is Complete Dependence On Renewable Energy Unsustainable?

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ABSTRACT

There have been several negative impacts on the environment because of the use of fossil fuels. Carbon dioxide, a main component in the pollution caused by burning fossil fuels, is the main cause of global warming and climate change. People have only gotten to know about these issues due to recent research. To make use of energy in a sustainable manner, it is necessary for us to make the switch from non-renewable to renewable. The purpose of this research is to explore the obstacles of attempting to switch to a future with 100% dependence on renewable energy. Research has been done by conducting and interpreting secondary research.

Keywords: fossil fuels, climate change, sustainable, primary research.

Subject: Environmental studies

INTRODUCTION

The need for energy has increased because of population boom and technological advancements. Therefore, it is crucial to use the most sustainable sources of energy.

Non-renewable sources such as oil, gas and coal are infamous for the damage they cause to the environment. These compounds of hydrocarbons produce many harmful gases including carbon dioxide - the main driver of global warming. It's a greenhouse gas that increases the planet's temperature and because of this, glaciers have been constantly melting at Arctic and Antarctica - making sea levels higher than normal. This can lead to floods and can severely affect agricultural and fishing activities. Not only this, but many species fall under threat of endangerment because they can't adapt to the changes of climate change fast enough. The pollution and heatwaves caused by the combustion of fossil fuels also have detrimental effects on the health of children and adults.

There are better alternatives like renewable sources. These are sustainable, since there is a theoretically infinite supply of them. Moreover, they are clean sources of energy i.e., they produce virtually no carbon dioxide.

The major sources of renewable energy include solar, wind, biomass, geothermal, hydropower and tidal energy.

Solar energy

Solar energy is an abundant source of energy. It is harnessed through photovoltaic modules, more commonly known as solar panels. Made from silicon, these capture the sun's energy and convert it into electricity. Solar technologies can deliver heat, cooling, natural lighting, electricity, and fuels for a host of applications. To put its abundance into perspective, the amount of solar energy that reaches the earth's surface in one hour is more than the planet's total energy requirements for a whole year.

Hydropower

Being the most commercially developed, hydropower works on the kinetic energy of water moving from higher elevations to lower elevations. A reservoir can be made by building a dam/barrier to produce a controlled flow of water which will drive a turbine. This turbine will convert the kinetic energy to electrical energy. Hydropower reservoirs often



have multiple other uses - providing drinking water, water for irrigation, flood and drought control, navigation services, as well as energy supply.

Wind energy

Similar to hydropower, kinetic energy from moving wind is used to drive turbines and get converted into electricity. Wind farms are usually seen onshore or offshore. Although many parts of the world have strong wind speeds, the best locations for generating wind power are sometimes remote ones. The world's technical potential for wind energy exceeds global electricity production.

Renewable energy sources are clearly superior; however, there are still impediments which make it challenging to completely be dependent on.

MATERIALS & METHODS

Secondary qualitative research was conducted to gather information on the discussed topics. All research has been done by evaluating and interpreting academic and non-academic sources available in public domain. Research for sources was done via the use of keywords.

DISCUSSION

Non-renewable energy has been established for a long time and most existing technology has already been built for the usage of fossil fuels; therefore, it will be difficult for hundreds of companies, businesses and public spaces to make the switch. Moreover, building, transporting and maintaining new infrastructure will be costly. Some countries' governments are currently offering subsidies to incentivize people to invest in renewable energy.

Additionally, even well-funded infrastructure projects face geographical limitations. For example, solar panels have to be placed in direct sunlight and wind farms in areas of high wind speeds. Moreover, consistency is not guaranteed. Dams also can only be built in specific areas, requiring expansive space. Solar panels and wind turbines can't be clustered together - they need to be spaced out. They occupy a lot more space than conventional power plants; this is a major challenge for overpopulated countries which are already struggling with high living costs.

Lastly, any additional electricity produced from renewable sources have to be stored in large batteries; whereas fossil fuels can be saved till a later date to be burnt for energy - making them more convenient.

CONCLUSION

The use of renewable energy is increasing at a promising rate and has a bright future; however, there will be cost and logistical barriers that need to be overcome.

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