**ESSAY TOPIC: IF I COULD INVENT SOMETHING NEW**

Invention is the act of bringing ideas or objects together in a unique way to create something new with the help of one’s mind. It can also mean creativeness, discovering or finding out.

If I could create anything, I think it would be beneficial to create a device in the form of a vertical axis wind turbine that would be able to convert both kinetic energy and solar energy into electrical energy automatically. I could call it a Wind-Solar energy generator.

Imagine an environment where electricity is no longer a problem. Picture a future where everyone would not have to worry about electric power outages or fluctuations in electricity supply. This vision could become a reality with the invention of a Wind-Solar energy generator. The electricity crisis has been enormous and has largely contributed to the incidence of poverty, especially in our country, Nigeria. The use of fossil fuels such as coal, petrol, and diesel for electricity generation has resulted in large quantities of carbon dioxide, leading to climate change and air pollution.

Some devices, such as standalone wind turbines and solar panels on buildings and fields, have been provided. While these approaches aim to tackle the problem of electric power generation, they are far from perfect. In recent times, we have had incidents of fire outbreaks caused by solar panels that are installed on the roofs of buildings. Hence, the need for a more efficient device is evident.

Designing such a complex device would be a tremendous challenge. First, it would require modeling the device using SolidWorks, then simulating the device in Ansys Workbench. The power output and torque could also be calculated using Ansys CFX. Next is the construction of the device, starting with the turbine. Each vertical turbine will have two helical shaped blades positioned to rotate with an increase in wind velocity and at the same time capture solar irradiation with the help of the solar cells embedded on the body.

The materials to be used should be able to withstand both wind loads and the integration of solar cells. A composite material would be a good option for the blades because of its lightweight, durability, and UV resistance. The blades will have a large surface area as this would help optimize solar irradiation. Thin-film solar cells should be appropriate for the body of the blades.

The mounting of the blades would be in a tree-like structure instead of the regular rooftop arrangement. The tree will be able to accommodate more than two blades. Other components that would be required for the design include ball bearings, an electric generator, an inverter, a power controller, a battery, and connecting cables.

Hence, while inventing the Wind-Solar generator would be an enormous undertaking, I believe it is a worthy goal, especially for the citizens of our country, Nigeria.

Thank you Sir/Madam

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