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Journal of Fundamentals of Renewable Energy and Applications

Commentary

Utilization of Renewable Technologies to Improve a Green Energy Revolution

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DESCRIPTION

The requirement for environmentally friendly methods has never been greater in a world that is experiencing the impact of climate change and the rising need for energy. The potential of clean and safe for the environment electricity generation provides renewable technologies at the beginning of this important change.

The development of renewable technologies

A wide range of energy sources and systems are included in the category of renewable technologies. Simple and frequently localized applications, like windmills and waterwheels, characterized the initial development of renewable energy. These beginnings have been transformed over time by technology developments into complex, highly effective energy solutions.

Solar revolution

Solar power, one of the most obvious and revolutionary aspects of renewable energy, has gone through outstanding development. Photovoltaic panels, which convert sunlight into electricity, have become as a representation of the renewable energy movement. Solar panels are now widespread on rooftops, on solar farms, and even in space, powering everything from calculators to entire residences.

The attractiveness of renewable energy extends beyond its accessibility and adaptability. It is an energy source with almost no emissions, making it an innovator in the fight against climate change.

The winds of change

Wind energy, another significant aspect of renewable technologies, has also seen a huge change. This transformation can be seen by the huge wind turbines appearing in landscapes all over the world. They capture kinetic energy from the wind and transform it into electricity through the rotation of huge blades. Wind power's environmental benefits are obvious in its carbon neutral operation. It is a consistent availability, with predictable wind patterns in many places. Offshore wind farms have extended the potential of wind energy by capitalizing on stronger and more consistent offshore winds.

Aquatic frontier

Water, in both liquid and vapor form, provides significant possibilities for renewable energy. Hydropower, which is generated by the flow of water in rivers, has been used for several years, but current technologies continue to improve its efficiency. Tidal and wave energy, which are created by the ocean's constant movements, represent the aquatic frontiers of renewable technology.

With large dams and reservoirs all across the world, hydropower has already established itself as a strong source of clean electricity. While tidal and wave energy are still in early stages, they have huge potential.

The potential of biomass

Organic materials such as wood, agricultural wastes and even municipal solid waste are used to generate biomass energy. It is a frequently considered but extremely adaptable renewable technology. Biomass can be used directly for heating, transformed into biogas for power generation or processed into liquid biofuels like ethanol and biodiesel. Biomass energy contributes to waste management by converting organic waste into usable energy resources. Bioenergy obtained from sustainable practices can also be carbon-neutral or even carbon negative by making it an important component of efforts to reduce greenhouse gas emissions.

Geothermal energy

There is an undiscovered reservoir of heat beneath the Earth's surface waiting to be exploited. Geothermal energy is a sustainable energy source that utilizes the earth's core heat. It is based on geothermal reservoirs, where water heated by the Earth's mantle converts to steam, which is then utilized to generate power. Dry steam, flash steam and binary cycle power plants are all examples of geothermal energy systems. They provide a constant and reliable source of power that does not change by weather.

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Received: 03-Aug-2023, Manuscript No. JFRA-23-27523; **Editor assigned:** 07-Aug-2023, PreQC No JFRA-23-27523 (PQ); **Reviewed:** 21-Aug-2023, QCNo.JFRA-23-27523; **Revised:** 28-Aug-2023, Manuscript No.JFRA-23-27523 (R); **Published:** 04-Sep-2023, DOI: 10.35248/2090-4541.23.13.319

Citation: Cin Z (2023) Utilization of Renewable Technologies to Improve a Green Energy Revolution. J Fundam Renewable Energy Appl. 13:319.