

Potential for Wind Energy and the Requirement for Renewable Energy Sources

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DESCRIPTION

Population growth, technological advancements and economic growth all contribute to the increasing requirement for power and growing economies. Simultaneously, concerns about climate change and finite fossil fuel resources have intensified the need for cleaner and renewable energy sources. With the possibility of lower emissions in addition to providing a source of power, wind energy stands out as an attractive alternative for energy security and economic growth. The generation of wind energy necessitates a thorough understanding of its potential benefits, challenges and the pathways towards a more sustainable future.

The wind is a potent natural power that can be used to generate energy. As the sun heats different parts of the Earth unevenly, air masses move, creating wind patterns that can be utilized by modern wind turbines. This kinetic energy is transformed into electricity, contributing to the grid and offsetting the need for fossil fuel-based generation. One of the most significant advantages of wind energy is its inherent sustainability. Fossil fuels, wind is an infinitely renewable resource, ensuring a continuous supply of clean energy without the concerns of reduction.

Wind energy serves as a main tool in the fight against climate change. By reducing reliance on fossil fuels, wind power significantly lowers greenhouse gas emissions, the substitution of coal, oil, and natural gas with wind energy helps in reducing air pollution and improving air quality, leading to healthier communities and a better quality of life.

Navigating the windy path: Challenges to overcome

The irregularity of wind itself is one of the most significant concerns. Energy output may change due to large variations in wind speed. In order to provide a stable and regular supply of

electricity even when the wind isn't blowing, this irregularity requires a dependable energy storage system. The ability to store extra energy and deliver it as needed is made possible by advancements in grid management and battery technology. Additionally, discussions about wind turbines have erupted in the towns where these constructions are proposed due to their visual and sound effects. Some people consider them affects that change the natural landscape. Effective community involvement and thoughtful placement of wind farms in locations with little visual impact are required to decrease these concerns. In addition, although costs have been continuously reducing as technology has advanced and economies of scale have been realized, the initial expenses of building and installing wind turbines can be significant. Wind energy can become more economically viable and available to a wider range of stakeholders with the help of government incentives, subsidies and supportive policies.

Wind-powered future

A multifaceted strategy is required to properly utilize wind energy's potential and manage the problems that come forward. It is essential that local, regional and federal governments support policies. This includes establishing purposes for renewable energy, offering financial incentives and simplifying the approval procedures for wind energy projects. Governments may increase private sector investment and advance the development of wind energy by establishing a helpful regulatory environment. Investment in research and development is also important. Advancements in wind turbine technology, materials science, and energy storage can enhance the efficiency, reliability and affordability of wind energy systems. Moreover, international cooperation is essential for realizing the full potential of wind energy.

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