



Wind Energy: Advantages and Challenges of Wind Turbine over Other Energies

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Opinion

Wind energy has many advantages, which is why it is one of the fastest growing energy sources in the world. Research efforts are aimed at addressing the challenge of making better use of wind energy. Read on to learn more about the benefits of wind power and some of the challenges facing wind power. Wind power is cheap, and onshore wind power is one of the cheapest energy sources available today, costing 1-2 cents per kilowatt hour after tax credits for production. Wind energy reduces the price uncertainty that fuel costs add to traditional energy sources, as wind farm electricity is sold at a fixed price for long periods of time (e. g 20 years or more) and its fuel is free. Wind creates jobs, the US wind industry employs more than 100,000 people, and wind engineers are one of the fastest growing jobs in the United States. By 2050, wind could create more than 600,000 manufacturing, installation, maintenance and support service jobs in the US economy, according to the Wind Vision Report. The United States has vast domestic resources and a highly skilled workforce that can compete in the clean energy industry around the world. It's a clean fuel source. Wind power does not pollute the air like power plants that rely on the burning of fossil fuels such as coal and natural gas, but emit particulate matter, nitrogen oxides and sulfur dioxide, resulting in health problems and economic damage. Wind turbines do not produce atmospheric emissions that cause acid rain, smog, or greenhouse gases. Wind power is a domestic energy source. The country's wind supply is plentiful and inexhaustible. Over the last decade, wind capacity in the United States has increased by 15% annually, making wind the largest renewable energy source in the United States today. Wind is actually a form of solar energy. Winds are caused by the warming of the atmosphere by the sun, the rotation

of the earth, and the irregularities of the surface of the earth. As long as the sun is shining and the wind is blowing, the energy generated can be used to power the grid and make it sustainable. This brings great benefits to the rural economy, where most of the best wind locations are located. Wind turbines occupy only a small part of the land, allowing farmers and ranchers to continue working on the land. Wind turbine owners pay rent to farmers or ranchers for land use and provide land owners with additional income.

Challenges faced

On a cost basis, wind power still has to compete with traditional power sources. The cost of wind power has dropped dramatically in the last few decades, but wind projects must be able to compete economically with the cheapest sources of electricity, and in some places the wind is competitive. The wind may not be strong. Windy locations on land are often far away from cities that require electricity. Power lines need to be built to carry electricity from the wind farm to the city. However, reducing the number of transmission lines already proposed can significantly reduce the cost of expanding wind energy. The development of wind resources may not be the most beneficial use of land. Suitable land for wind turbine installations must compete with alternative land use, which is more valued than power generation. Turbines can cause noise and aesthetic damage. Although wind turbines have a relatively small environmental impact compared to conventional power plants, there are concerns about the noise generated by turbine blades and the visual impact on the landscape. Wind plants can affect local wildlife. As with all energy sources, wind projects can change the habitat in which they are built and can affect the suitability of that habitat for a particular species.

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Received November 01, 2021; **Accepted** November 15, 2021; **Published** November 22, 2021

Citation: Selbmann K (2021) Wind Energy: Advantages and Challenges of Wind Turbine over Other Energies. *Innov Ener Res*, 10: 255.

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