

# The impact of wind factors on wind power generation

How does wind energy generation affect the environment?

Apart from environmental impacts, wind energy generation faces issues in energy and financial sustainability, such as the wind power fluctuation, technology lagging and use of fixed feed-in tariff contracts that do not consider wind energy advancement and end-of-life management.

What factors affect wind energy generation?

Among them, the performance of wind turbines has a major influence on wind energy generation. Several factors affect the performance of a wind turbine, including operating wind speed, blade length, tower height, casing design, and surrounding environmental factors such as weathering, icing, and birds and insect collisions .

How does wind energy impact the economy?

Economic impact assessmentThe development of wind energy impacts the economy of the region in which it is developed. Economic impacts are crucial in the societal acceptance and in the development of wind power. Understanding these implications will allow for better design and implementation of more effective wind energy policies.

Does wind energy cause environmental problems?

All power generation,however,has environmental impacts (May 2015) including wind energy. It is not free of problems(Union of Concerned Scientists 2009),although they are small when contrasted to those associated with other sources of energy (US Department of Interior 2011; Al Zohbi et al. 2015).

Are the economic and environmental effects of wind energy site specific?

Based on the literature presented in this paper,it is clear that the economic and environmental effects of wind energy are site specific. All forms of human activities have a corresponding impact on the environment including wind energy.

What are the benefits of wind energy?

Wind energy offers several benefits,such as being inexpensive,uninterrupted,environmentally friendly,and globally abundant. The energy generated in any form contributes to environmental impacts to some extent,besides,wind energy has negligible environmental impacts compared to conventional energy sources .

The underlying physics of wind power generation expressed in Equation provide some clues concerning a preferable power curve model. Thus : 1) There appear to be at least three important environmental factors that affect ...

The capacity factor of a wind turbine is its average power output divided by its maximum power capability. 11



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Capacity factor of onshore wind turbines in the U.S. ranges from 9% ... Energy Performance and Environmental Impacts. ...

Factors driving the adoption of wind energy include decreasing costs, advances in wind technology, and a higher demand for low-carbon power sources. Wind energy directly reduces greenhouse gas emissions and plays a ...

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