



# 10 facts about wind

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### RENEWABLE ENERGY 10 surprising wind energy facts

Explore more wind energy facts in our Top 10 Things You Didn't Know About Offshore Wind Energy and Top 10 Things You Didn't Know About Distributed Wind Power. Visit [energy.gov/windreport](https://energy.gov/windreport) to learn about the status of the wind industry.

With costs on the decline, the wind energy industry is set for a boom. Here are some facts about wind energy and the benefits this renewable energy source offers. -- Top Facts about Wind Energy. 1. Wind Turbine Towers Are As Tall As the Statue of Liberty

Here, we unravel 10 remarkable and often overlooked facts about wind energy that paint a vivid picture of wind power's past, present, and promising future. 1. The Global Dance of Wind Energy: The sheer magnitude of wind energy generation is staggering--an annual output of approximately 2,100 terawatt-hours (TWh) globally.

Wind power is a renewable energy technology harnessing the natural force of wind to generate electricity. It involves using wind turbines consisting of large rotating blades attached to a central hub. As the wind blows, the blades spin, converting kinetic energy into electrical power through a generator.

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#### 1. Wind Turbine Towers Are As Tall As the Statue of Liberty

A notable feature of wind energy generation is the scale of wind turbines - an average turbine blade is about 200 ft long while turbine towers reach up to 295 ft tall on average. But wind turbines are expected to be built with longer and larger blades, and with taller towers too, to help generate even more power and improve the performance of power generation. In 2020, the average capacity of utility-scale wind turbines installed was 2.75 megawatts, 8% higher than the previous year.

One of the best arguments for and facts about wind energy is that its electricity generating process does not produce any planet-warming greenhouse gases, making it a green energy source. However, some emissions do occur during its lifecycle including the building and construction of turbine towers. The making of materials used in the turbines such as steel, concrete, fiberglass, and copper all produce some greenhouse gases at some point. But the carbon footprint of wind power is far lower than fossil fuels like coal; coal's footprint is almost 90 times larger than that of wind while natural gas is more than 40 times bigger. Overall, wind energy produces around 11g of CO<sub>2</sub> per kilowatt-hour of electricity generated, compared with about 980g for coal.

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### 3. Global Onshore Wind Electricity Generation Increased by 11% in 2020

2020 was a big year for the growth of renewables, particularly in wind energy. Onshore wind electricity generation increased by 144 terawatt-hour (TWh) while offshore wind increased by 25 TWh, a 29% climb from the previous year. Overall, 1 592 TWh of electricity were generated from wind installations in 2020, which was 12% more than in 2019. Wind energy capacity (the ability to absorb and store energy) also doubled from 2019, attributed to China and the United States, which together accounted for 79% of global wind deployment.

### 4. Offshore Wind Could Potentially Generate 18 Times the Current Global Electricity Demand

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