

How Wind Works

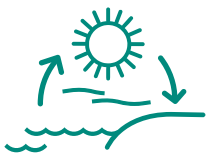
Understanding how we convert one of Earth's great natural resources into electricity

What is the wind?

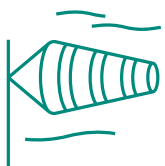


Every 24 hours, wind generates enough kinetic energy to produce roughly 35 times more electricity than humanity uses each day.

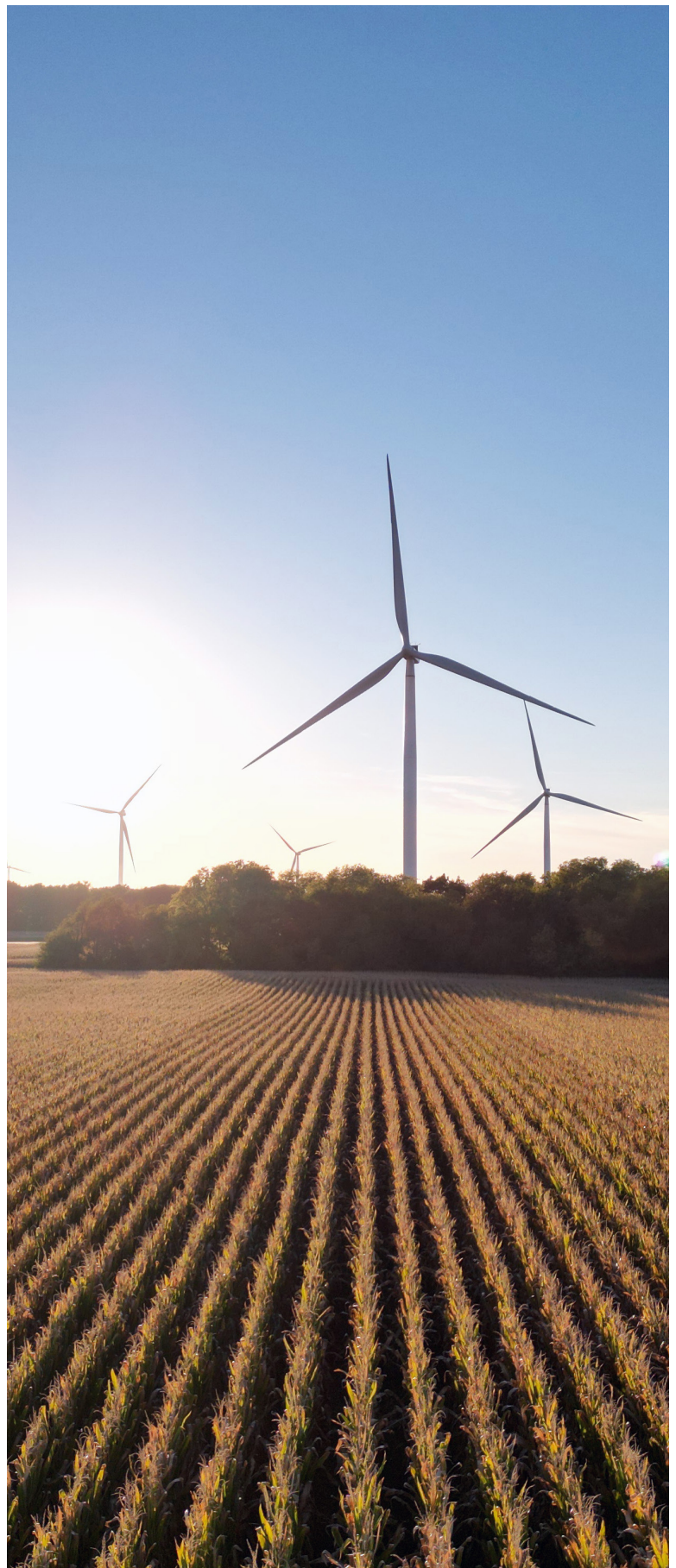
And unlike coal or oil, this resource is totally renewed each day.



Wind is caused naturally by an **uneven heating of the atmosphere** by the sun, the irregularities of the Earth's surface, and the rotation of the Earth. The air moves because it has different temperatures, and cold air is heavier than hot air.



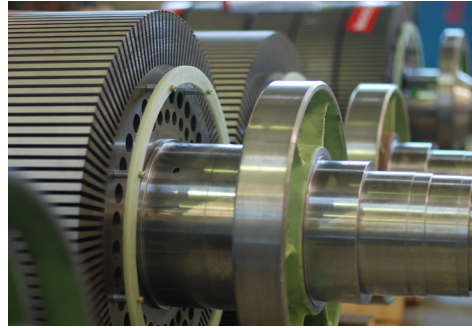
In order to know the range of speeds and the direction of the wind in a certain area, **Vestas takes millions of observations of the atmosphere every day** across the world, this helps us decide the precise location of our wind turbines.



How do we harness this clean energy?



A modern turbine includes a series of blades mounted around a rotor to catch the wind and translate its kinetic energy into rotational energy.

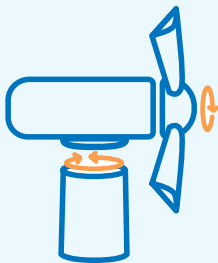


Just as traditional windmills used that rotational energy to grind wheat or pump water, modern turbines turn a generator to create electricity.

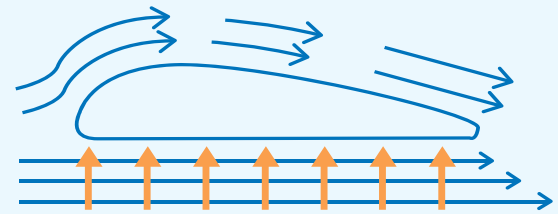
Did you know?

Using rotational energy as a way of producing electricity has defined wind turbines since their invention in the 19th Century

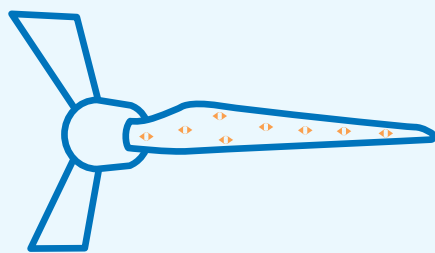
How do wind turbines capture the most energy?



Our designs allow blades to capture the full force of the wind by tracking the direction and turning to face it. This is called yawing.



Our blades are aerodynamically designed in such a way that they also capture the most energy while withstanding extreme weather conditions.



Today, our turbines are fitted with sensors and advanced computer systems to automatically adjust the blades to capture the most energy.



Modern wind turbines are the most efficient and inexpensive source of electricity and provide homes across the United States with electricity.

“The wind is an untamed, and unharnessed force”

– Abraham Lincoln