

Film Title and Release Date: *Wind Power - A Renewable Energy Source*
(2005)

Length of Film in Minutes: 14 minutes

Film Genre: Non-fiction

Reviewer Name and Grade: Daniel L., 8th grade

Date Reviewed: March 31, 2021

In the documentary called “Wind Power - A Renewable Energy Source”, it explains that fluctuating costs of fossil fuels have intensified the search for more affordable, efficient, and clean energy sources. The documentary then tells us what wind energy is. Wind energy is a converted form of solar energy. The sun’s radiation heats different parts of the Earth at different rates. The uneven cooling and heating of the sun’s radiation causes the atmosphere to warm unevenly. Hot air rises and cooler air is drawn in to replace it. This results in wind. The rotation of the Earth causes a “Coriolis Force”, which shifts moving particles to the left in the Southern Hemisphere and to the right in the Northern Hemisphere. Wind turbine blades have changed over centuries, progressing from materials such as sheet metal and wood, to the advanced fiberglass composites and epoxy used today. The amount of energy in the wind increases exponentially with an increase in wind speed. A wind turbine can only harness a part of this increase of energy because power above the level of which the system is designed is allowed to pass through the rotor and is lost. Most present day wind turbines are designed to begin producing power with wind speeds of 5 meters per second. They are designed for maximum efficiency at wind speeds between 12 and 15 meters per second. Faster wind speeds will trigger pitch control systems to slow the blades by angling them to alleviate overload on the generator or drive train. Winds above 22 meters per second can damage components. At this point, control systems usually pitch the blades to stop rotating. With fewer blades, rotational speed can be higher. Also, fewer blades with higher rotational speed reduces peak torques in the drive train, resulting in low gearbox and generator costs. Most turbines developed in recent decades use 3 or 2 blade designs. Compared to rising costs of coal and natural gas, wind power is a very inexpensive form of alternative energy. Turbines generate electricity at about 4 or 5 cents per kilowatt-hour. Wind power is a renewable energy and will lower our dependence on the finite, nonrenewable natural resources that we currently rely on like petroleum and coal.

How did you find the film on Kanopy (by title search, subject search, casual browsing, etc.)?

I found the film on Kanopy through subject search.

Did the plot (for fictional movie) or presentation of information (for documentary) keep you interested?

The presentation of information kept me very interested. The scenes of the movie were very helpful. One scene showed a diagram of the parts of a wind turbine, which was very helpful in understanding how a wind turbine works. I also really liked the narrating. The narrator spoke very clearly.

Was the pace of the film too fast, too slow, or just right?

The pace of the film was just right. The narrator spoke very clearly.

What grade level(s) is this film appropriate for?

I think this film is appropriate for 5th graders. There are some very interesting scientific concepts included in this film, such as the “Coriolis Force”, which may be too advanced for grade levels lower than 5th grade.

Rating: 5 stars

I really liked this film. The pace was just right and the narrator spoke very clearly. It was also very informative. It tells you a lot about wind turbines, like how most turbines developed in recent decades use 3 or 2 blade designs. It also talks about how wind is formed! This is a very informative film and I really liked it!