

Wind Energy Today

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Did you know that wind is caused by the energy of the sun? Well, it is! We all know that the sun heats up our planet and keeps us warm. But, did you know that the land heats up much faster than the ocean? And did you know that the air in the atmosphere is heated by the land or ocean below it as well as by the sun? Because land heats up faster than the ocean, the air above the land also heats up quicker than the air over the sea. As the air above the land is heated, it rises up into the atmosphere, where it is cooled off again. Once the air is cooler, it moves down again towards the sea, forcing the air below it towards land, where air is heating and rising. The air that comes from above the ocean towards the land is what we call **wind**. Do you see now how wind is a form of solar energy?

But how do we use wind energy? Today, we can use the wind to create electric power. **Wind turbines** change the motion, or **kinetic energy**, of wind into **mechanical** energy, which can be used directly to grind corn or to power a generator that produces electricity. Wind turbines are our modern versions of windmills, which have been used for thousands of years. Just like windmills, they look like giant pinwheels. Nowadays wind energy is used to produce electricity for many countries around the world, especially in places close to the coasts of oceans, such as Denmark, which uses a lot of wind power and is known for its wooden windmills.

Wind power is used in many parts of the United States, including some places along the East Coast, the Appalachian Mountains, the Great Plains and the Pacific Northwest. These locations are all typically very windy. Since wind power cannot be produced without a significant amount of wind, it would not make sense to try to use this energy source in places where it is not consistently windy.

Locally, one place in Massachusetts that is considering using wind energy is Cape Cod. However, some people are against building **wind farms** (or **wind parks**), or a group of wind turbines in the same area, here because they say that the farms will destroy the beauty of the natural environment. Other people are against building wind farms because they think that they will be loud and create noise pollution. One major concern is that having such wind farms in Cape Cod will be unsafe for endangered species of birds that migrate annually along the coast.

But wind farms are not as dangerous to the environment as many other sources of energy. They do not pollute our air or water. Also, modern wind turbines create much less noise than they used to. And they do not use any toxic chemicals in the process of producing electrical power. Wind is a promising source of renewable energy for the future!