

UNIT 11 WIND ENERGY – Part 2



The website of The Office of Energy Efficiency and Renewable Energy (USA) lists the following advantages of wind power. Match them to the sentences by writing the correct number in the right place.

- 1 Wind power is cost-effective.
 - 2 It's sustainable.
 - 3 Wind is a domestic source of energy.
 - 4 Wind turbines can be built on existing farms or ranches.
 - 5 It's a clean fuel source.
 - 6 Wind creates jobs.
- ... (5) Wind energy doesn't pollute the air like power plants that rely on burning fossil fuels, such as coal or natural gas.
 - ... (3) The nation's wind supply is abundant. If we use wind, we don't need to import so many fossil fuels.
 - ... (2) For as long as the sun shines and the wind blows, the energy can be harnessed to send power across the grid.
 - ... (1) It is one of the lowest-priced renewable energy technologies available today, costing between four and six cents per kilowatt-hour, depending upon the wind resource and the particular project's financing.
 - ... (4) The best wind sites are found in rural areas. Farmers and ranchers can continue to work the land because the wind turbines use only a fraction of the land. Wind power plant owners make rent payments to the farmer for the use of the land, providing landowners with additional income.
 - ... (6) In 2014, the wind sector invested more than \$8 billion of private capital in the U.S. economy to build projects and employed more than 73,000 workers.

<http://energy.gov/eere/wind/advantages-and-challenges-wind-energy>

Match the words to their meanings.

domestic	national, not foreign
abundant	more than enough
grid	network of power lines
to harness	to control in order to use its power
rural areas	areas outside cities, the countryside
a fraction of sg	a small part of sg ($\frac{1}{4}$ is a fraction)

Decide whether the statements are true or false according to the text above.

- | | |
|------------------------------------------------------------------------------------|-------|
| 1. Coal-fired power plants pollute the air more than wind turbines. | true |
| 2. The wind supply of the US is abundant. | true |
| 3. Wind is the cheapest energy source in the US today. | false |
| 4. Farmers get additional income from selling their lands to wind power companies. | false |
| 5. In 2014, the US wind sector provided nearly 73,000 jobs. | false |

Watch the following video about how wind turbines work.

<https://www.youtube.com/watch?v=tsZITSeQFR0>

Now, watch the video again and decide whether the statements are true or false.

- | | |
|-------------------------------------------------------------------------------------------------|-------|
| 1. Old windmills use the same principle as today's wind turbines. | true |
| 2. Blowing air spins the blade because the air pressure is the same on both sides of the blade. | false |
| 3. On the top of the turbine, there's a weathervane. | true |
| 4. The weathervane is connected to a computer that always turns the turbine into the wind. | true |
| 5. The shaft turns very fast. | false |
| 6. The gearbox reduces the rotation of the shaft. | false |
| 7. Even a small wind farm can provide thousands of homes with energy. | true |

Match the words with their meanings.

air pressure	the force that the air puts on the blade
uneven	not equal, changing
weathervane	metal object on the roof to show which way the wind is blowing from
shaft	long pole or rod
gearbox	several wheels with pointed parts on the edges connected together
revolution	movement in a circle around a central point

What can you see in the pictures? Write their names in the spaces.



gear



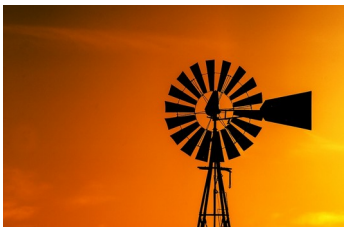
weathervane



wind farm



wind turbine



windmill

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Forum topic:

What can be the disadvantages of using wind turbines to generate electricity?