

NOW

WITH BILL MOYERS

Wind Power Background Sheet

For questions 1 and 2, provide answers using information from the class discussion and your own previous knowledge.

1. Define and give examples of the following sources of energy.

Renewable:

Non-Renewable:

2. Why would the global community need to come up with alternatives to fossil fuels?

For questions 3-6, use the Web sites indicated to answer the questions.

3. Label the correct parts of the wind turbine below and describe its specific function. (Refer to the Wind Turbine Close-Up at <http://www.pbs.org/now/...> or the Crash Course in Wind Energy at <http://www.windpower.org/en/kids/index.htm>)



Tower:

Rotor:

Nacelle:

Transformer:

Foundation:

4. How do you calculate the amount of power available at a given wind speed? (See the resource at <http://www.awea.org/faq/windpower.html>)

5. Where would be a good place in the U.S. to build a wind turbine? Why? (For questions 5 and 6, see the Wind Power Map at <http://www.pbs.org/now/...> or the Wind Power Resource Atlas of the U.S. at <http://rredc.nrel.gov/wind/pubs/atlas/chp2.html>)

6. Where in the U.S. would you not want to build a wind turbine because of the lack of wind?

1. Fill in the table below so that the correct name is given to each description of energy.

| Type of energy | Description |
|----------------|--|
| | Form of energy that plants use to create organic chemicals |
| | Pressure waves in the air that can carry information and music |
| | The energy an object has because of its temperature |
| | The energy an object has because it is moving |
| | Energy due to the separation of electric charges |
| | Energy that is released in nuclear reactions |
| | Energy released from chemical bonds that can be released through a chemical change such as burning |
| | Energy stored in an object due to a change in its shape |
| | The energy an object has when it is able to fall due to gravity |

2. Why are energy changes important?

3. Energy is defined as the ability to do _____ (Fill in the missing word).

4. What is the scientific unit used to measure energy? _____

5. Why do energy companies measure energy using the kilowatt-hour?

6. Give examples of household appliances that use a lot of energy.
