

Energy Resources - Wind

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4th Per.



Key Terms

- ♦ wind - the horizontal movement of air from an area of high pressure to an area of lower pressure.
- ♦ renewable resource - a resource that is naturally replaced in a relatively short time.
- ♦ wind farms - areas where a large amount of wind turbines produce electricity.



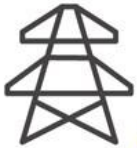
1 The wind passes over the blades and makes them turn (kinetic energy)



2 The blades turn a shaft within the nacelle (the box at the top of the turbine)



5 The electricity is exported to the electricity grid



4 A transformer converts the electricity to the right voltage for the local network

3 The shaft turns a generator which converts the kinetic energy into electrical energy

Wind Turbine Diagram



Pros and Cons

Pros

- Wind energy is free and does not cause pollution
- Rapid growth in usage of wind energy with lots of potential
- Reduces people's dependence on the use of fossil fuels
- Doesn't disrupt farmland operations (where they are usually built)
- Wind turbines are space efficient

Cons

- It is not ideal for all locations
- Expensive to build and set up
- Wind turbines can be a threat to wildlife, especially birds
- Severe storms and high winds can damage parts, which can potentially fall and risk the safety of people in the surrounding area.
- Noisy

Best Locations to Build Wind Turbines

1. Coastal areas
2. Tops of rounded hills
3. Open plains
4. Gaps in mountains/Valleys
5. Offshore in bodies of water like oceans or lakes
6. Places where wind is strong and reliable



Mini Quiz

1. True or False - Wind is the horizontal movement of air from an area of high pressure to an area of lower pressure.
2. Why is wind counted as a renewable resource?
3. Name 3 of the best locations for building wind turbines.
4. Name one pro of wind energy.
5. Name one con of wind energy.