

# Wind Energy

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# Pros and Cons of the Wind Energy

## Pros:

- Clean source of power: creating energy from wind doesn't pollute the air or it doesn't need any destructive chemicals
- Cost effective: this means that people don't need to spend any money for the benefits of wind energy
- Rapid growth: over the last decade wind energy has grown enormously.
- Can be built on existing farms: wind turbines can be built on existing farms or agricultural land.

## Cons:

- Wind doesn't generally blow reliably
- Threat to animal life because the spinning turbine may hurt flying animals in the air.
- Wind energy collectors may cost a lot.
- Suitable to certain locations (not all locations)



# Key Terms

- ❑ Wind Farms
- ❑ Active Power
- ❑ Availability

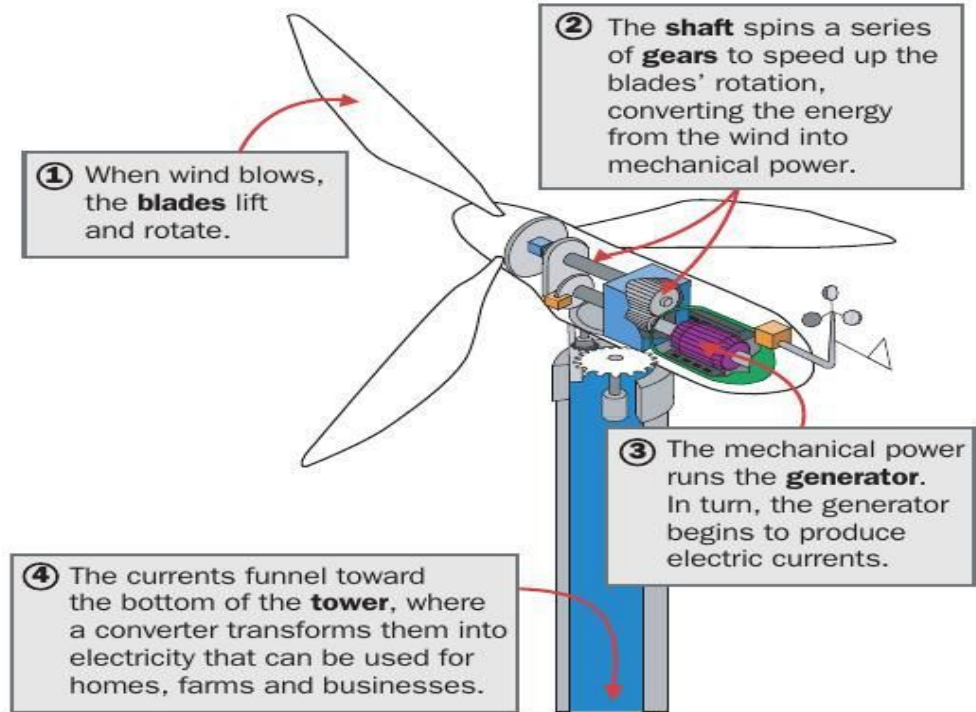
- Wind farms: a large farm consisting of many windmills
- Active power: the power which is actually consumed or utilized throughout the circuit of the wind energy collector
- Availability: the quality of being able to use or contain.



# Diagram

## How does a wind turbine work?

Wind turbines convert wind energy into clean electricity; even a small wind farm can generate enough electricity to power over 9,000 homes. Here's how a turbine works, simplified:



Source: U.S. DEPARTMENT OF ENERGY'S  
OFFICE OF ENERGY EFFICIENCY  
AND RENEWABLE ENERGY

KAIXIN LIU/Missourian



## Best Place to Build a Windmill

The best place to build a windmill to collect energy is on rounded hills, open plains, coastal areas, or a place where the wind hits strongly. Some windmills are even built offshore.



## Mini Quiz:

1. Why are most wind energy collectors built on open areas?
2. What is active power?
3. What are two pros of having a windmill or a wind energy converter?
4. What are two cons of having a windmill or a wind energy converter?
5. How many homes can a small wind farm generate electricity through?



# Answers:

1. Wind energy collectors are mostly built on open areas because these areas have no wind blockage and the wind is very strong on these areas.
2. Active power is the power which is actually consumed or utilized throughout the circuit of the wind energy collector.
3. Any of these two:
  - Clean source of power: creating energy from wind doesn't pollute the air or it doesn't need any destructive chemicals
  - Cost effective: this means that people don't need to spend any money for the benefits of wind energy
  - Rapid growth: over the last decade wind energy has grown enormously.
  - Can be built on existing farms: wind turbines can be built on existing farms or agricultural land.
4. Any two of these:
  - Wind reliability
  - Threat to animal life
  - Wind energy collectors may cost a lot.
  - Suitable to certain locations (not all locations)
5. It can generate electricity through 9,000 different houses.