

# Renewable Energy Foundations

Science · Answer Key · 18 Questions

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**1. Which renewable energy source relies on the gravitational pull of the moon to generate electricity?**

- A) Solar power
- B) Tidal energy**
- C) Geothermal energy
- D) Biomass

**2. What is the primary substance used in most commercial solar panels to convert sunlight into electricity?**

- A) Copper
- B) Silicon**
- C) Carbon
- D) Iron

**3. Which component of a wind turbine is responsible for converting mechanical energy into electrical energy?**

- A) Rotor blades
- B) Nacelle
- C) Generator**
- D) Tower

**4. What is the process of converting organic waste, such as food scraps or manure, into energy called?**

- A) Biomass energy**
- B) Nuclear fission
- C) Hydropower
- D) Thermal extraction

**5. Geothermal energy is derived from which internal source?**

- A) The Earth's core heat**
- B) Magnetic field friction
- C) Tectonic plate shifting
- D) Volcanic ash deposits

**6. Which of the following is a disadvantage of relying solely on solar and wind power?**

- A) They produce high greenhouse gas emissions
- B) They are intermittent energy sources**
- C) They require fossil fuels to start
- D) They only work in the Southern Hemisphere

**7. In a hydroelectric power station, what is the primary force that drives the turbine?**

- A) Rising steam
- B) Flowing water**
- C) Burning fuel
- D) Tidal wind

**8. What is the main environmental benefit of using renewable energy compared to burning coal?**

- A) Increased mining jobs
- B) Lower carbon dioxide emissions**
- C) Higher noise pollution
- D) Reduction in water usage

**9. Which term describes the ability of a power grid to store energy for use when generation is low?**

- A) Grid balancing
- B) Energy storage**
- C) Voltage regulation
- D) Resource allocation

**10. Which type of energy is generated by capturing the kinetic energy of moving air?**

- A) Hydroelectric
- B) Wind energy**
- C) Geothermal
- D) Solar thermal

**11. What is the primary function of a photovoltaic cell?**

- A) To heat water
- B) To convert light directly into electricity**
- C) To store wind energy
- D) To burn biomass for heat

**12. Which of these is considered a 'non-renewable' energy source?**

- A) Natural gas**
- B) Tidal power
- C) Solar energy
- D) Wind energy

**13. What do we call the use of building design to capture sunlight for heating without mechanical systems?**

A) Active solar heating

**B) Passive solar design**

C) Geothermal architecture

D) Wind harvesting

**14. Which country is often cited as a global leader in utilizing geothermal energy for heating and electricity?**

**A) Iceland**

B) Australia

C) Brazil

D) Canada

**15. What is the main byproduct of a hydrogen fuel cell used in transport?**

A) Carbon dioxide

**B) Water vapor**

C) Methane

D) Soot

**16. Which energy source is limited by its requirement for specific geographical locations, such as volcanic regions?**

A) Solar power

B) Wind power

**C) Geothermal energy**

D) Biomass energy

**17. What is the purpose of an inverter in a home solar power system?**

A) To clean the panels

**B) To convert DC electricity to AC electricity**

C) To increase wind speed

D) To store hot water

**18. Which term refers to the total amount of greenhouse gases generated by our actions?**

A) Energy efficiency

**B) Carbon footprint**

C) Renewable quota

D) Power capacity