

Name _____

Renewable Energy Sources: Tapping into Kinetic and Potential Energy

Open-Ended Response Answer Key

1. Wind and solar energy both offer clean and renewable power sources. Wind energy is generated using wind turbines, while solar energy relies on photovoltaic cells. Wind energy is highly effective in areas with consistent wind patterns, while solar energy is best in sunny regions. Both reduce greenhouse gas emissions but may face challenges like intermittency and land use.
2. Biomass energy recycles organic materials, reducing waste and generating power. It can help divert agricultural and forestry residues from landfills, reducing methane emissions. However, it also requires careful management to prevent deforestation and maintain sustainable practices.
3. Geothermal energy is a constant and sustainable source of electricity, unlike some other renewables that depend on weather conditions. It has a smaller environmental footprint but is limited to regions with geothermal resources. Geothermal plants require careful resource management to prevent depletion.
4. A coastal city harnessing both tidal and hydropower energy benefits from a diverse and reliable energy supply. Tidal power is predictable but intermittent, while hydropower is steady. During high tide, excess energy could be stored for later use or used for desalination processes, enhancing the city's sustainability and resilience.

