

Name _____

Powering the World

Open-Ended Response Answer Key

1. Fossil fuel-based power generation methods like thermal and biomass release greenhouse gases and pollutants, contributing to air pollution and climate change. In contrast, renewable energy sources like wind, solar, and hydropower produce clean energy with minimal environmental impact.
2. Wave and tidal power have the potential to provide clean and renewable energy but face challenges like the need for specialized infrastructure and limited geographical suitability. They offer advantages such as predictability and sustainability.
3. In a world where all electricity is generated using renewable energy sources, the environment would benefit from reduced greenhouse gas emissions and lower pollution levels. Energy security would improve, as renewable sources are not subject to fuel supply constraints. Sustainability would be enhanced by reducing reliance on finite fossil fuels.
4. Sustainable biomass management in biomass power generation involves responsibly sourcing organic materials, ensuring that they are grown, harvested, and used in a manner that does not deplete natural resources or harm ecosystems. This includes reforestation and efficient use of organic waste materials.

