

Renewable energy comes from natural sources that are continually replenished, such as sunlight, wind, rain, tides, waves, and geothermal heat. The term "renewable" contrasts with fossil fuels, which are finite resources that will eventually dwindle.

I chose to research solar and wind energy as two renewable sources. Solar power utilizes photovoltaic cells to convert sunlight into electricity. Two major benefits are that solar is clean - no greenhouse gas emissions result from generating electricity this way. Solar is also versatile and modular - panels can provide power at any scale from handheld devices to utility-scale solar farms. However, drawbacks are that solar only generates electricity when the sun is shining. Also, solar panels require rare earth metals that have their own supply challenges.

Wind power harnesses the wind to spin large turbines that generate electricity. Key advantages are that wind is a free and plentiful resource almost everywhere. Wind power is also scalable like solar. But intermittent generation remains an issue if the wind isn't blowing. Wind turbines also raise environmental concerns like habitat disruption and harm to birds.

For my community, I think solar energy would be the most practical renewable source to expand. We enjoy a lot of sunshine, and distributed rooftop solar could help meet peak energy loads on hot, sunny days when air conditioning use surges. This would reduce strain on the grid. Yet wind turbines could still have a role for some grid-scale renewable generation.

According to the WWF report, renewable sources potentially could power our entire future energy system. However, achieving 100% renewable energy would require massive infrastructure overhaul and investment. Key challenges around intermittent and storage would also need solving to reliably replace fossil fuels at global scale. But with sensible policies, urgent innovation, and public-private cooperation, migrating toward renewable sources over the coming decades is an important eco-friendly goal.

References:

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