



GRADES 3-5

# ACTIVITY 3 CLEAN ENERGY

**Part 1. Planet Power** and the successful round-the-world flight of Solar Impulse 2 show us that renewable energy can support global demands for electricity, create jobs, and protect the environment. This includes solar, wind, water, and geothermal power.

- Solar power is generated through special photovoltaic cells that convert light from the sun’s radiant energy to electric current.
- Wind power is captured with turbines, which look like large propellers mounted on high towers. The movement of the turbines produces kinetic energy, which is converted into electric current with the use of magnets.
- Hydroelectric, or water, power uses large dams that are filled from rain, rivers, or waterfalls to move a turbine.
- Geothermal energy taps into hot water and steam stored deep in the Earth to operate a generator.

Wind and solar power are the fastest growing sources of renewable energy. Use the chart below to learn more about

their benefits and drawbacks. Put a checkmark next to each of the statements to indicate whether it applies to solar or wind power, or both. Then answer the following questions.

1. Which would work better in your city or town? Solar or wind power? \_\_\_\_\_
2. What environmental conditions helped guide your choice?  
\_\_\_\_\_  
\_\_\_\_\_
3. Do you think solar panels would be effective in a cold climate, like the Arctic? Why or why not? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Could you generate wind power in a desert? Why, or why not? \_\_\_\_\_  
\_\_\_\_\_

Features of Renewable Energy Sources	Solar	Wind
Dependent on the weather		
Can produce electricity for a single home or an entire city		
Can be noisy		
Can produce electricity 24 hours a day		
Can be mounted on the roof of an existing building or on the ground		
Best in rural or coastal areas with lots of open space and few obstructions like buildings		
Best in hot, sunny climates without a lot of trees or cloud cover		
Can be programmed to tilt or move in order to capture more energy		
Provides virtually unlimited, free energy		
Electricity can be stored for times when energy sources are low or transferred back to the grid		

**Part 2.** Solar Impulse 2 landed in 9 countries and 17 cities. Use the map your teacher provided to review its flight path, and think about the location and culture of each city as you do research to answer these questions.

Which two cities do you think would be best suited for using solar power? \_\_\_\_\_

Wind power? \_\_\_\_\_

Choose one foreign country to research. Why do you think this country was selected for inclusion in Solar Impulse 2’s flight plans?  
\_\_\_\_\_  
\_\_\_\_\_

What is this country doing to reduce greenhouse gases and their impact on climate change?  
\_\_\_\_\_  
\_\_\_\_\_

How can we learn from what this country is doing, and apply it here in the United States? Use the back of this sheet if you need more space to answer.  
\_\_\_\_\_  
\_\_\_\_\_

## CREATIVE CHALLENGE

Choose an audience, such as members of your community or local government, and brainstorm ideas for a multimedia campaign that will encourage them to switch to renewable energy sources. Begin sketching out your ideas on the back of this sheet.

