

Energy Experts Worksheet

Learning Objective:

Use the Renewable Energy Living Lab to collect data on various energy forms and analyze the data to make recommendations for the best places in the U.S. to locate renewable energy projects.

Engage:

Renewable energy is a hot topic in engineering today. You will explore five forms of renewable energy resources and determine the best locations in America to convert these resources into electrical energy.

You have been hired by an energy engineering firm to help them identify potential sites to build renewable energy power projects. Your company has given you the following parameters:

- Sites must have a high potential for generating energy from a renewable source.
- Sites must be within a reasonable driving distance—200 miles—of an international airport.
- No more than 2 sites may be located within the same state.
- You must identify 3 sites for each type of renewable energy plant: solar energy, geothermal energy, wind energy, hydropower, and biomass energy.

Create a list of what types of information you think you will need to solve this challenge? For example, where are airports located? How much water is located nearby? Etc.

Share your answer with your partner/team.

Explore:

To complete your assignment, use the Renewable Energy Living Lab to determine the locations of potential sites. Follow the instructions below to get started!

1. Go to the online Renewable Energy Living Lab at <http://www.teachengineering.org/livinglabs/index.php>.
2. Choose age group K-12.
3. Explore the U.S. map.
4. Check the boxes under the Resources folder (located on the left under the Data Layers tab) to switch between the maps depicting the potential for the five different forms of renewable hydropower,

Name: _____ Date: _____ Class: _____

biomass, geothermal, wind and solar. Use the icons in the lower left corner to read more information about each form of energy.

Explain:

Complete the data table below as you explore each of the renewable energy forms.

Renewable Energy Type	Location of Potential Site #1	Location of Potential Site #2	Location of Potential Site #3
wind			
solar			
geothermal			
hydropower			
biomass			

Elaborate:

Explain how you determined each of the potential sites.

Name: _____ Date: _____ Class: _____

What was the biggest challenge you faced in determining potential sites?
Explain why this was a challenge.

Evaluate:

Compare your recommended sites to those of another group.
How are they similar? How are they different?

After comparing your ideas with other groups, how could you improve your recommendations?