
Alternative Energy Project

Background:

In a year when Americans experienced record high prices at the gas pumps and winter heating costs are projected to soar nearly fifty percent, consumers are looking for ways to lower their energy costs for businesses, homes, schools, and transportation. Our primary energy sources today are fossil fuels, which are being depleted at an alarming rate. According to some, if consumption continues at the current rate, the fossil fuel supply could be gone before the end of the century. In addition to the cost and supply issues, scientists have long warned of the environmental damage caused by burning fossil fuels. In short, we are at a crossroads. Americans must use and develop alternate forms of energy to help us power our homes, automobiles, and businesses into the future without destroying the Earth's environment. Exploring the use of renewable and alternative resources is a must in today's world.

Vocabulary:

Renewable resource: natural resource that is depleted at a rate slower than the rate at which it regenerates (i.e. solar energy)

nonrenewable resource: resources for which there are no ways to replenish the supply (i.e. fossil fuels)

fossil fuels: also known as mineral fuels, they are hydrocarbon containing natural resources such as coal, petroleum, and natural gas

solar energy: harnessing the energy produced by sunlight

wind power: using the kinetic energy of the wind or wind turbines to extract the wind's energy

hydropower: energy obtained from flowing water

geothermal energy: electricity generated by utilizing naturally occurring geological heat sources

hydrogen fuel cells: electrochemical cell in which the energy of a reaction between fuel, such as liquid hydrogen, and an oxidant, such as liquid oxygen, is converted into electrical energy

nuclear energy: energy released from the nucleus of an atom creating a nuclear reaction

LED: light emitting diodes: a semiconductor device that emits light using a variety of inorganic materials

greenhouse gasses: gaseous components of the atmosphere including carbon dioxide and water vapor, among others. They contribute to the greenhouse effect

global warming: an increase in the average temperature of the Earth's atmosphere and oceans increasing the greenhouse effect

Purpose: You and your partners will be assigned an alternative energy resource. As a group you will create a PowerPoint about an alternative form of energy that can be used to safely meet the energy demands of the population without an extremely high price or further damage to the environment.

Each group member is responsible for a portion of this research project. All students are expected to work on the powerpoint and present to the class. A grade will be given to your group as a whole and each group will have a chance to grade each individual member.

Research Questions:

Assigned Alternative Energy Resource: _____

Each square below is to be used as a draft to research important points of your alternative energy resource. The information included in your squares will be put into the powerpoint (note: you may need more than one slide to fit the information on the topic you are researching)

<p>Topic: What can this alternative energy resource be used for and when is the energy/resource expected to be easily accessible to the general public (if it is accessible why is it most people don't use it)?</p> <p>Resources used:</p> <p>Authored by:</p>	<p>Topic: What are the positive and negative aspects of using this resource/type of energy? (be specific)</p> <p>Resources used:</p> <p>Authored by:</p>
<p>Topic: How is the energy gathered and/or created? How is the energy stored for later use?</p> <p>Resources used:</p> <p>Authored by:</p>	<p>Topic: What are the waste by-products of this form of energy use? How do these by-products affect the Earth's climate?</p> <p>Resources used:</p> <p>Authored by:</p>

All students should:

Collect photographs, diagrams, charts, graphs, flow charts, and any other information that may be useful in your presentation.

Requirements (refer to rubric for more details):

Slides: minimum 9 (including title and work cited slide)

Pictures/Diagrams: minimum 3