**Introduction Go Green Project**

**Purpose** To research and present “green” energy sources (wind or solar energy) and how they can become important energy resources in the near future.

**Materials** Internet Reference Materials Microsoft Power Point

**Discussion**

So far in Projects in Science, we have studied energy in terms of sources and usage, focusing mainly on hydropower and nuclear energy. The reference materials, summaries, activities have shown that our major energy sources are coal, oil and natural gas (fossil fuels), but other options are available and needed, such as wind, solar, geothermal, biomass, tides, etc. We have also considered how we, Americans, use energy; in particular, electricity. Due to pollution, waste, and intensified international relations, it is becoming more and more apparent that we must change our attitudes and actions regarding major energy sources. In particular, the government and private utilities are shifting their focus from the present dominant energy sources (fossil fuels) to the “green fuels” or alternative energy sources.

**Procedures**

1. [***20 %***] Research and define what it means to be “green” in relation to energy sources and usage. In other words:

a. What are the “green” energy sources? Explain why they are considered “green” while other sources are not.

b. How can we contribute to a “green” environment in terms of our energy usage?

c. What is your personal attitude and involvement in “green” energy? Do you think Americans should go “green?” Explain your feeling for or against going “green.”

d. Include this information in your presentation (procedure 2).

2. [***60 %***] Create a Power Point presentation involving WIND energy **or** SOLAR energy.

a. Describe the advantages and disadvantages of the energy source you have chosen for your project (*wind or solar*).

b. Show some pictures and diagrams of the equipment needed and how it is set up for use. (What equipment generates the electricity? Etc.)

c. Make a chart or table showing how this energy source (*wind or solar*) compares with coal, oil, natural gas, and nuclear in terms of:

1) cost to build, maintain, and operate the equipment

2) how much is this source presently used in the US … what is its projected use?

3) size of the energy facility

4) amount of electricity produced and/or energy produced for public use

5) amount of waste produced

d. Show the best locations in the United States for such energy. (*Insert a map of the United States into your presentation*.)

3. [***10 %***] Is energy an important issue to you? If you were the President of the United States, what actions would you take to address our present energy situation? What spending would you increase? What spending would you decrease?

4. [***10*** %] **References**

a. Include a reference ON EVERY SLIDE of your presentation where there is information, a picture, a diagram, etc. that did not originate from you. For internet sources, copy the URL address and paste it at the bottom of the slide.

b. Your final slide should include a list of all references used in your presentation.

ALTERNATIVE PROJECT

1. **Create a Collage** of TEN articles (newspaper, magazine, internet) with captions regarding “Green Energy,” focusing on either wind energy or solar energy.

a. [***20*** %] Research online or a library to find **TWO** articles that define what it means to be “green” in relation to energy sources and usage.

* Refer to Procedure 1 on page 1.

b. [***40*** %] Find **EIGHT** articles that address wind or solar energy.

c. You may create your collage on a Power Point, Word Document, or place them all on a large construction paper.

2. [***20*** %] Highlight the key sentence or paragraph in each article that brings out the major thought. Write a caption for each article, explaining why you chose that article (what is its purpose in this project?)

3. [***10*** %] Write a letter to your congressman, state representative, etc. or to a utility company about the issue of energy and your desire to gain information or to support/join their efforts. OR you may interview an expert or someone in the energy field about “Green Energy” or wind energy or solar energy.

a. The letter / interview must be approved by the teacher before completion.

b. Include the letter / Interview in the collage presentation.

4. [***10*** %] References

Include a list of references that you used to find information or specifications for your wind or solar generator. For internet sources, copy the URL address and paste it in your Power Point, Microsoft Office Word document, or on the collage itself.

SOURCES

<http://www.greenmountainenergy.com/>

<http://www.green-e.org/>

Rubric

50 points total

[***10***] Research and define what it means to be “green” in relation to energy sources and usage. In other words:

a. What are the “green” energy sources? Explain why they are considered “green” while other sources are not.

b. How can we contribute to a “green” environment in terms of our energy usage?

c. What is your personal attitude and involvement in “green” energy? Do you think Americans should go “green?” Explain your feeling for or against going “green.”

[***5***] Describe the advantages and disadvantages of the energy source you have chosen for your project (*wind or solar*).

[***10***] Show some pictures and diagrams of the equipment needed and how it is set up for use. (What equipment generates the electricity? Etc.)

[***15***] Make a chart or table showing how this energy source (*wind or solar*) compares with coal, oil, natural gas, and nuclear in terms of:

1) cost to build, maintain, and operate the equipment

2) how much is this source presently used in the US … what is its projected use?

3) size of the energy facility

4) amount of electricity produced and/or energy produced for public use

5) amount of waste produced

Show the best locations in the United States for such energy. (*Insert a map of the United States into your presentation*.)

[***5***] Is energy an important issue to you? If you were the President of the United States, what actions would you take to address our present energy situation? What spending would you increase? What spending would you decrease?

[***5***] **References**