Name: _____ Pd: ____

Maryland Energy Administration

Alternative Energy

Request for Proposal (RFP) – No. IS6-400

Background

According to the Energy Information Administration (EIA), Maryland has few energy resources. Although its economy is not energy-intensive, and its per capita energy consumption is low, its increase in energy consumption is outpacing its population growth. Currently, Maryland uses the Susquehanna River as a source for hydroelectric power, and there is one nuclear facility at Calvert Cliffs. The Appalachian Mountains have minor coal reserves. Wind power potential exists, and Maryland is viewed as a marginal to good resource for solar energy. Biomass and geothermal potential has also been investigated. The state has various energy efficiency policies in place, such as the "EmPOWER Maryland" initiative, and offers financial assistance to those willing to invest in using certain forms of energy. Federal tax credits are also available.

Request

The Maryland Energy Administration (MEA) requests proposals for developing an alternative source of energy for the state of Maryland. Preference will be given to those proposals that take advantage of renewable forms of energy which can be harnessed using existing technology. The request is not targeted toward replacing any one form of energy, but at increasing the total amount of energy available to the state without any adverse impact on the environment. Preference will also be given to proposals that support residential and commercial applications without placing additional demands on the existing power grid. Any conventional energy demand replaced by the alternative energy supply will become available to meet other energy needs that come with the energy demands of an ever increasing population. Project teams will be required to build a model and provide evidence supporting the efficiency and feasibility of their proposal.

Based on the above paragraph, identify what criteria will be used when selecting an alternative energy source.

The source of energy must meet with following criteria:	
Uses RENEWABLE resources	Uses existing technology
Increases total amount of energy in the power grid without placing additional demands on the power grid.	Good for the environment (or does <u>not</u> negatively impact the environment)
Available to homes and businesses and can meet the demands of an increasing population.	Effective and realisitic

Lakelands Park Middle School
Sixth Grade Science
Energy Summit Expectations

You are about to embark on a journey to solve the problem outlined in your Alternative Energy RFP. Following is an outline of how your time should be budgeted:

1. Two days in the computer lab to conduct research

    a. Day one will be used to identify ways that your source of energy meets the constraints of the RFP.
    b. Day two will be used to identify ways that your source of energy DOES NOT meet the constraints of the RFP.

2. One day to plan your team's presentation for the Energy Summit

    a. This will be in our classroom.
    b. You will need to decide points to highlight to inform the class about your source of energy.

3. One day for the Energy Summit

    a. Groups will take turns presenting information about their energy source to the class.
    b. The class will take notes on a capture sheet to reference the material later.

4. One day for our Energy Summit Conclusion
    a. This will be in our classroom.
    b. You will use your Energy Summit Capture Sheet to come up with a conclusion.

Participation in the Energy Summit and completion of the Capture Sheet will result in a formative grade.

Name_____ Date _____ PD_____ ♦

Energy Type:

What renewable resources are needed to create this type of energy?

What equipment would be needed to make this energy?

How is this energy transformed into usable electricity?

How realistic would it be to use this type of energy?

How efficient is this energy (resources vs. production)? (*Think about the amount of resources necessary vs. the amount of energy produced):*

Pros	**Cons**

How will this energy source impact the environment?

What are the costs related to this energy?

Are we already using this energy source or would it be brand new? If brand new, what is needed in terms of technology?

Name: _____ Period: _____

Energy Summit Research Sheet

As you research your source of energy for your *Energy Summit Position Paper* and presentation, record the information in a format similar to that presented below. Additional papers may be attached to this. The bibliography must include all sources cited in the paper and presentation. Remember that each source referenced in a visual aid must also have a bibliographic citation.

Question/Topic: What is your source of energy? Think of this topic as an introduction to your source of energy.

Research Notes:

Name: _____ Period: _____

Energy Summit Research Sheet

As you research your source of energy for your *Energy Summit Position Paper* and presentation, record the information in a format similar to that presented below. Additional papers may be attached to this. The bibliography must include all sources cited in the paper and presentation. Remember that each source referenced in a visual aid must also have a bibliographic citation.

Question/Topic: How does your source of energy meet the RFP constraints?

Research Notes:

Name: _____ Period: _____

Energy Summit Research Sheet

As you research your source of energy for your *Energy Summit Position Paper* and presentation, record the information in a format similar to that presented below. Additional papers may be attached to this. The bibliography must include all sources cited in the paper and presentation. Remember that each source referenced in a visual aid must also have a bibliographic citation.

Question/Topic: How does your source of energy ***fail*** to meet the RFP constraints?

Research Notes:

Name: _____ Period: _____ Date: _____

Energy Summit Capture Sheet

As you participate in the *Energy Summit*, record the information that will help you make the best recommendation. Although you are an expert in your field on your source of energy, you want to make sure that the best decision is made regarding which source of energy should be developed in the state of Maryland.

Source of Energy	How does developing this source of energy meet the necessary criteria? (What are the advantages?)	What are the drawbacks to choosing this form of energy?
Biomass		
Geothermal		
Hydroelectric		

Source of Energy	How does developing this source of energy meet the necessary criteria? (What are the advantages?)	What are the drawbacks to choosing this form of energy?
Nuclear		
Solar		
Wind		
Fossil Fuels *(Coal, Oil, and/or Natural Gas)*		

What source of energy do YOU recommend developing in Maryland? Using research from the summit, explain why.

_____

_____

_____

_____

Class Decision: _____

Name _____ Pd _____ Date_____

Investigations in Science 6
Alternative Energy
ENERGY SUMMIT CONCLUSION

Use your Request for Proposal and your Energy Summit capture sheet to complete the following.

Explain which energy source your class decided to recommend to the state of Maryland. Be sure to describe why this energy source was chosen. Use information from the two documents above to support your answer.

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Bibliography – Energy Summit

Name _____ Date _____ Period_____

Bibliographic Citation for Online Service

Article Title: _____

Encyclopedia Title: _____

Web Address (URL): _____ Date you view it: _____

Bibliographic Citation (Web Site)

Title of Web Site: _____

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