

# PROJECT REPORT

Northern Wyoming Community College District / National Science Foundation  
Summer Energy Education Program 2012

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## TITLE

**Missouri's Energy WebQuest: How will Missouri be able to provide for future energy needs?**

## SUMMARY

This lesson guides the students as they divide up in teams to research the various types of energy resources and then come back together to create a policy for Missouri's energy future.

## ENERGY CONTEXT

Students must research fossil fuels, nuclear energy and alternative sustainable sources of energy as well as budgetary restraints to create a plan that will meet Missouri's energy needs.

## ANTICIPATED TIME REQUIRED

**This project will require:**

- 10 minutes to introduce the WebQuest to the students.
- 10 minutes for the students to get into groups and decide their roles.
- 30 – 60 minutes for students to do research in groups.
- 30 – 60 minutes to work together as an "energy committee" to prepare plan.
- 30 – 60 minutes for students to present their plans.

## INTENDED STUDENT LEVEL

This project is intended for High School Science students and can be used in a physics, physical science, biology, language arts, economics, or social studies class.

## ASSUMED PRIOR KNOWLEDGE

**This project expects students to have prior knowledge of:**

- Proper citation of research
- Group work etiquette
- Some type of presentation software

## LEARNING OBJECTIVES

### Missouri Course Level Expectations (CLE):

Biology I: 5:3:A:a – Human Impact on Environment

7:1:D:a – Communicating investigations through Oral Presentation/Drawings/Maps/Graphs

7:1:D:b – Communicate and Defend a Scientific Argument

8:2:B:b – Identify/Analyze Theories (Global Warming / “Green” tech)

8:3:B:b – ID/Describe challenges to society (Global warming/fossil fuels)

Other Science Courses CLE’s:

1:2:E – Nuclear energy is present in the universe, and is a source of energy for Earth and human activity

5:3:A – Distinguish between renewable and nonrenewable energy resources, recognize the limited availability of both types of resources, recognize the political, economic, social and ethical constraints involved in obtaining/using natural resources (mining in Missouri, burning coal, fossil vs. renewable, etc)

## MATERIALS

Computers for students to work in groups (best at a 2 to 1 ratio) connected to the Internet, preferably with some type of presentation software. WebQuest is located at

<https://sites.google.com/site/missourisenergywebquest/home>

## INTRODUCTION / MOTIVATION FOR STUDENTS

### How should Missouri's government use the state's energy resources safely and effectively?

As you know, there is a lot of talk about "going green" and making smart energy choices. However, the government has more to deal with than changing light bulbs and carpooling. Your committee has been asked by the Missouri Public Service Commission to research the state's energy budget and create an energy plan for the state. Your job is to research energy sources that we have available in Missouri and distribute the state's money in a way that will best benefit Missourians now and in the future.

## PROCEDURE

Divide the class into groups of four. You may want to have one or two computers for each group. They will need to go to the [WebQuest](#), read the introduction and decide who will have which role with the group. Give enough time for them to read the descriptions.

When everyone has a job description, group the students with the same job descriptions together to begin gathering information. You can assign one person to type the information or divide it up. They can all work together on one Google document, that can be shared so that they each have a copy and can add information.

Homework for the first day is to continue collecting information.

Second day, put them back together in groups to share what they collected as homework, then break back into their original “energy committee” team with notes to work together and create a plan. If they use Prezi for their presentation they can again work as a group, everyone can access and edit the Prezi.

Homework for the second day is to be ready to present.

Third day, have students present their plans.

**SAFETY ISSUES**

The only safety issues would be if the students go to sites they are not supposed to, so the teacher should be walking around the room monitoring their behavior.

**TROUBLESHOOTING TIPS**

Make sure all the links work and the Internet is running smoothly before class begins. If you find any dead links, email me at [jackiecarl@gmail.com](mailto:jackiecarl@gmail.com) and I will get them fixed as soon as possible.

This lesson was modified from a previously existing WebQuest by Aaron Dyer that can be found at <http://dyerwebquest.webs.com/index.html>

**ASSESSMENT**

Evaluation rubric is included on WebQuest.  
<https://sites.google.com/site/missourisenergywebquest/evaluation>

**SUGGESTED EXTENSIONS**

Students could write a letter to the Governor with their recommendations.