

## **Fossil Fuel Alternatives: research and debate**

Scenario:

The city of Sustainopolis wants to rely less on the coal-burning power plant that supplies all of its energy. There are several proposals to build a new power plant that does not rely of fossil fuels for electrical energy production. However, the city can only afford one of them. You work for an interested party that wants to build a particular plant and your job is to convince the others that your power generation strategy is the best for the city.

The alternative energy proposals are the following. Circle the one you are researching:

Wind Farm, Solar Farm, Nuclear Power Plant, Hydroelectric Dam, Algae/Biofuel Plant, Geothermal Plant

### **Information about Sustainopolis:**

- It has a population of about 1 million people, but there is room for expansion if the project needs additional workers or land
- Climate is temperate. About 70% of the year it is sunny, and about 70% of the year there are winds.
- A rapidly flowing river is about a mile to the east. Home to salmon, which traverse the river in a migration every year.
- To the north of the city are some hot springs and it is geologically active (occasional earthquakes, but nothing severe). The land is privately owned but the landowner is willing to sell at a reasonable price.
- Residents of the city support renewable energy but want to know what impacts there might be before committing to anything.
- Whichever proposal is accepted, the city's power grid will still be connected to the coal power plant. Therefore, the new proposal doesn't have to completely replace coal as an energy source

### **Research Day:**

Using reputable sources, research your assigned alternative energy source. Answer the following questions: (other side)

- 1) How does it work? In general, how is energy converted from one form to another? (You do not have to be super technical...you are not engineers and neither is your audience)
  
- 2) What are the advantages of this method over other energy sources (particularly fossil fuels)?
  
- 3) What are the disadvantages? (Be prepared if someone else brings up criticisms of your proposed idea. Do you think the disadvantages are deal-breakers?)
  
- 4) Why do you think this will be a good fit for Sustainopolis?
  
- 5) Research the other options (if time allows). What evidence can you bring to refute another option?

### **Debate Day**

Every group will have a chance to present their proposal. There will be time for questions and dissent in an orderly fashion and then we will vote on which proposal will be done. We will use an alternative voting system.

- Extra Credit will be given to the group who successfully argues for their proposal and gets the consensus

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Goals: Share alternate energy resources and debate the feasibility and sustainability of each

Plan:

Each group will get a set time to present the following:

- How the energy source works
- The advantages
- Why it would be a good fit

There will then be time for other groups to ask questions and allow the other groups to question individual groups and then vote on the proposal