



Watts On Your Mind?

Solar energy educational activities for schools

Activity Overview

Grade Level: 9-12

Activity: HS-5

Description

Students will review a case study of an energy subsidy, research the topics and participate in a mock Senate hearing by role-playing as either a Senator or a lobbyist.

Learning Outcome

Students will learn the importance of energy issues to their community as well as their nation.

Subjects

Science, government, economics

Process Skills Used

Discussion, research, presentation, negotiation

Duration

2 class periods

Key Vocabulary

(Refer to supplemental vocabulary page)

Curriculum Standards

Texas (TEKS): 112.42.c.6, 112.44.c.5

Louisiana (LSCS):

SE-H-B1, SE-M-A6

Arkansas (ASCF) 4.1.28:

National (AAAS Project 2061):

The Designed World – 12th

Mock Senate Hearing: Energy Case Study

Materials

1. “Facts About Renewable Energy” summary and “Renewable Energy Vocabulary” by the Alliance to Save Energy

Method

1. Read “Facts About Renewable Energy” referring to the vocabulary pages when necessary.
2. Review the Case Study: The Case of the Energy Subsidy
3. The Senate is considering energy policies to give tax breaks to renewable energy sources and to increase taxes on fossil fuels. You will be asked to take part in public hearings involving these issues.
4. After you research the various energy sources, you will be assigned a role as either a senator or one of the lobbyists representing various special interests and geographic regions.
5. Fill out a Decision-Making Grid to help you come to a decision. Much depends on you. Good luck.



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Case Study – The Case of the Energy Subsidy

The year is 1998. United States dependence on foreign petroleum, which became a problem in the early 1970s, continues to grow. In addition, concern rises over the environmental costs associated with the use of fossil fuels. Renewable energy sources are an option in some regions, but they have been slow to develop commercially. Connecticut, for example, has access to hydroelectric power, but usage has actually declined during the past century, because of relatively cheap fossil fuels. To help change this trend, Connecticut Senator Jonathan Barnhart has sponsored a bill to provide special tax breaks, or subsidies, for developers of renewable energy sources, including solar, wind, geothermal, hydropower, and biomass. These tax subsidies would take the form of tax credits, or rebates, for qualifying energy projects.

Senator Barnhart's proposal received mixed reviews in the Senate. Senators from the five top oil producing states—Texas, Alaska, Louisiana, California, and Oklahoma — expressed concern that the bill would put oil producers at a disadvantage that could result in serious job losses in their states. Three of those states, Texas, Louisiana, and Oklahoma, are also the top producers of natural gas, leading their senators to argue even more strongly against a subsidy for competing renewable fuels. Noting that renewable fuels are not yet competitive in price without tax subsidies, they argue that consumers would get the best product at the lowest price by letting the market determine what type of energy to produce and in what quantities. In addition, they object to any programs that would increase the size of the federal budget deficit at a time when program cuts and tax hikes are being proposed to deal with the out-of-control federal budget.

Environmental groups and developers of renewable energy sources disagree. They claim that fossil fuels already receive a subsidy from the general public in the form of environmental damage that does not get charged back to those who are responsible. They assert that fossil fuels would cost a lot more if the environmental costs to society were included. According to the environmentalists, we tend to be short-sighted in dealing with nonrenewable resources by not taking into account their finite nature until it is too late.

Oil company representatives respond that it was the free market that developed petroleum back in the mid-nineteenth century when whales became relatively scarce and there was concern that they might be driven to extinction. Oklahoma Senator Susan Phillips reminds Senator Barnhart that we avoided a whale oil crisis a century ago not through special subsidies, but through the free market responding to a shortage of whale oil by raising its price. Says Senator Phillips, "The higher price of whale oil actually created a market for petroleum and other energy sources by encouraging both consumers and producers to look for cheaper alternatives."

The president of the Sierra Club, Belinda Arbuckle disagreed. "For free markets to operate effectively, people need to pay the full cost of their actions. Our failure to take into account the full long-run costs of fossil fuels to society makes it difficult for producers of renewable energy sources to compete. I proposed new taxes on fossil fuels reflecting the environmental damage associated with their production and use. This would tend to increase the cost of fossil fuels



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reflecting their environmental impact and making it easier for renewable energy sources to compete on the basis of price."

The fossil fuel industry response is that we do not need another tax on energy to clean up the environment, especially in light of the mixed scientific evidence on the damaging effects of sulfur dioxide and other pollutants from fossil fuels. The industry also reminds the Senators that an energy tax would have negative effects on jobs and growth throughout an economy dependent on fossil fuels.

The Senate is undecided about what to do, and is calling for special hearings. Which of the following should the Senate do:

1. Support the Barnhart proposal to grant subsidies to producers of renewable energy,
2. Support the Sierra Club proposal to tax fossil fuels
3. Do neither and let free markets determine energy use

Sample Decision Grid

CRITERIA					
Alternatives	Fairness	Environmental Impact	Deals with Spillover Costs	Growth and Jobs	Budget Deficit
Free market only					
Tax credits					
Fossil Fuel Tax					

Source: Alliance to Save Energy and Indiana Department of Education, Energy Environment & Economics