

Sulfur Dioxide Emission Changes To the U.S. Clean Air Act

During this activity some members of the class will moderate the hearing while other members will represent various special interest groups. This is a role-modeling activity, get into your roles! Use acting, costumes, slogans, etc.

The new director of the EPA has directed the EPA to relax standards from 75 ppb to 0.5ppm. The change has sparked a great deal of interest from various groups. Normal changes to the U.S. Clean Air Act would be dealt with written comments and a decision made from those comments. Do to the large public interest this recommendation has caused the U.S. Senate Committee on Environment and Public Works has decided to hold a senate hearing.

Each special interest group will have a position on sulfur dioxide emissions. Group members should decide how to present their opinion at the senate hearing. Each group will have five minutes to present their case.

Each group must come up with a minimum of three reasons to support its position. Each reason must be supported by 3 facts. The group must also prepare and address one argument that the opposite viewpoint might bring up. Your group must also have one question and one backup question to ask each of the other groups. Each special interest group must fill out forms stating the opinion of their group, the background information, the required information, the arguments they will present, and the questions for the other groups. Each group must ask a minimum of **5** questions during the hearing.

After all groups have made their presentations and answered questions, each group will have one minute for rebuttal. A rebuttal is your group's chance to clarify your position, and defend your opinion.

After all the arguments and rebuttals, the senate hearing board will adjourn to make decision and a ruling on the request to modify sulfur dioxide emissions.

Finally, after the committee renders its decision each person will write a letter to the editor of the CNN You will discuss the meeting, why you agree or disagree with the decision. The letter should be approximately 100 words in length and should come from the perspective of your special interest group. You must state facts from the meeting in your letter, you will not receive credit if you only state I agree/disagree and I thought the activity was fun.

Quick Outline of Activity:

1. Choose roles (Monday, June 5)
2. Research (Monday, June 5 - Friday, June 9)
3. Presentation (Monday, June 12 - Wed, June 14)
4. Rebuttal (Wed, June 14)
5. Follow up letter to CNN (DUE Friday, June 16)

Each group must have a slide show presentation.

You may NOT read off of the presentation.

The presentation must NOT have complete sentences.

Change 75 ppb to .5 ppm

Senate Hearing

Regarding Changes to SO₂ Emissions Limits of Clean Air Act of 1970, et al.

The Players:

Neutral:

Senate Committee on Air Quality

In Favor:

Coal Miners
Industry, small
Industry, large
Local Electric Utility
Stock Broker
US EPA

Opposed:

Biologist / Environmentalist
Citizen from China
Insurance Company
Maine DEP
Michigan DEQ
Public Health Commission

Undecided:

Financial Institution
Parents
Residential Consumer

U.S. Senate Committee on Environment and Public Works

As a member of the U.S. Senate Committee on Environment and Public Works you will be deciding if the Environmental Protection Agency has the authority to change the sulfur dioxide emissions from the current maximum release of sulfur dioxide 75 ppb to 0.5 ppm. As part of the Committee it is your job to listen to the various parties and decide if a change is warranted. Normally changes to a regulation does not result in a senate hearing but due to the large public response to the proposed changes a senate hearing was called.

Presentation

1. First you need to convert 75 ppb and .5 ppm into the same units.

2. Develop a character.

Create a professional biographical descriptions which must include education and experience. I

Introduce yourself to the group and state your credentials.

3. Know the following:

- a. Why are sulfur dioxide emissions regulated?
- b. What are sulfur dioxide standards?
- c. How are they developed and reviewed?
- d. What scientific and technical information supports reviews?

4. Develop an agenda for the meeting.

Order of speakers,

Procedure for asking and answering questions and

Discipline for inappropriate actions of audience / speakers

5. You will Present a powerpoint informing the group:

The current sulfur dioxide emissions regulations

Why sulfur dioxide is regulated

How standards are developed and reviewed

Scientific and technical information supporting the review

Your presentation should include your credentials and describe the role of the U.S. Senate Committee on Environment and Public Works.

6. Run the meeting.

Call groups to present their information

Call on people so they can ask questions

meeting

Ask Questions

Keep the meeting running

Maintain order during the

MOST IMPORTANTLY - you will make a decision-you MUST be present for ALL presentations.

Local Electric Utility In Favor

Background:

You are employed by the local electric utility. You are obligated to provide its consumers their electric needs with the most cost effective energy it can obtain. Utilities are subject to state legislative and regulatory requirements.

You will need to research jobs at an electric utility and determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

Your job is provide cost effective energy and want to provide cheap clean energy. Scrubbers and clean coal help keep down the SO₂ emissions, but they are expensive. You must provide information to back up this philosophy.

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials
Operation cost,
Environmental impact statements
Safety concerns

Residential Consumer Undecided

Background:

You live on the side of town where the electric power plant and an automobile factory are located. You want cheap electricity and goods (like cars). You must choose if you are in favor or opposed to raising SO₂ emissions.

You will need to research health effects of SO₂, rising costs due to pollution clean-up and determine who will be speaking at the hearing.

Presentation

1 Develop a character:

- Create a biological description including age, family, residence and family
- You will introduce yourself to the group and state your credentials.

2. Research:

You will need to know the cost of electricity in the area.

You will need to know the cost of a car from your local factory.

Research the change in cost if emissions regulation is lessened.

Health effects of SO₂ that may harm your family

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Current cost of electricity in the area.

Current cost of a car from your local factory.

Change in cost if emissions regulation is lessened

Health effects and cost of medical care

Maine Department of Environmental Protection

(DEP)

Opposed

Background:

You are employed by the Maine DEP. You are concerned because the Northeastern U.S. has the highest acid rain in the nation. Any changes to the SO₂ emission regulation will affect the environment of your state.

You will need to research jobs at the Maine DEP and determine who will be speaking at the hearing.

Presentation

1 Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

Your job at the Maine DEP

What does the DEP do?

What is an environmental impact statement?

How does SO₂ emissions affect the environment in your state?

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Describe your job at the Maine DEP

Describe the environmental impact of raised SO₂ emissions

How and why does this affect your state more than other states?

Michigan Department of Environmental Quality (DEQ)
Air Advisor Committee Member
Opposed

Background:

You are employed by the Michigan DEQ. You are concerned because the Great Lakes are the largest source of fresh water in the world and are essential to Michigan's environmental and economic health. Any changes to the SO₂ emission regulation will affect your state.

You will need to research jobs at the Michigan DEQ and determine who will be speaking at the hearing.

Presentation

1 Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

Your job at the Michigan DEQ

What does the DEQ do?

What is an environmental impact statement?

How does SO₂ emissions affect the environment in your state?

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Describe your job at the Michigan DEQ

Describe the environmental impact of raised SO₂ emissions

How does this affect your state more than other states?

Public Health Commission

Opposed

Background:

You are employed by the Public Health Commission. You are concerned because changes to the SO₂ emission regulation will affect the health of all people.

You will need to research jobs in Public Health and determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

Your job in Public Health

What does Public Health workers do?

What are the health effects of increased SO₂?

What kind of medical care will be needed?

What kind of costs are expected for this medical treatment?

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Your job in Public Health

What does Public Health workers do?

What are the health effects of increased SO₂?

What kind of medical care will be needed?

What kind of costs are expected for this medical treatment?

Coal Miner In Favor

Background:

You are employed by a coal mining company and are concerned about the job situation. “Clean” coal is harder to find and more expensive. “Traditional” coal is readily available and cheaper.

You will need to research jobs at a coal mine and determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a professional biographical description which must include education and experience. You may include residence, family and age
- You will introduce yourself to the group and state your credentials.

2. Research:

Your job is provide cost effective energy and want to provide cheap clean energy. Clean coal helps keep down the SO₂ emissions, but they are expensive. You must provide information to back up this philosophy.

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials
operation cost,
environmental impact statements
safety concerns

Representative from the
US Environmental Protection Agency
(EPA)
In Favor

Background:

You are employed by the United States Environmental Protection Agency. You are required to oversee the environmental health of the U.S. Your new boss, however, has never been concerned about air quality and you must now follow his instructions.

You will need to research jobs at the US EPA and determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

Your job at the US EPA

What does the EPA do?

What is an environmental impact statement?

How does SO₂ emissions affect the environment in all areas of the country?

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Describe your job at the EPA

Describe the environmental impact of raised SO₂ emissions

How does SO₂ emissions affect the environment in all areas of the country?

Industry (small) In Favor

Background:

You are employed by a small industry / manufacturer. You are pleased that the government is loosening regulations on pollution of SO₂ because it should save your company money.

You will need to determine which company you work for and what your job is. Determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

Your industry and your job

What does your company do?

What is the current cost for keeping SO₂ emissions down?

How will this change with lessened regulation?

How will this affect the cost of your product to consumers?

3. Data to Present: (to include in your presentation.)

Your credentials

requirements:

Your industry and your job

What does your company do?

What is the current cost for keeping SO₂ emissions down?

How will this change with lessened regulation?

How will this affect the cost of your product to consumers?

Industry (large) In Favor

Background:

You are employed by a large manufacturer. You are pleased that the government is loosening regulations on pollution of SO₂ because it should save your company money.

You will need to determine which company you work for and what your job is. Determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

Your industry and your job

What does your company do?

What is the current cost for keeping SO₂ emissions down?

How will this change with lessened regulation?

How will this affect the cost of your product to consumers?

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Your industry and your job

What does your company do?

What is the current cost for keeping SO₂ emissions down?

How will this change with lessened regulation?

How will this affect the cost of your product to consumers?

Representative of Financial Organization (a Bank)

Undecided

Background:

You are to determine if there is any financial risk to your customers. (individuals as well as industry)

You will need to research jobs at a financial institution and determine who will be speaking at the hearing.

Presentation

1 Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

Your job at the financial institution

What does the bank do? (loan money? To whom?)

Explain the economics of loosening regulations to an industry

Explain the costs and benefits to local communities and industry

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Your job at the financial institution

What does the bank do? (loan money? To whom?)

Explain the economics of loosening regulations to an industry

Explain the costs and benefits to local communities and industry

Insurance Company Opposed

Background:

You are employed by a health insurance company. You are concerned because changes to the SO₂ emission regulation will affect the health of all people.

You will need to research jobs in health insurance and determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

Your job in health insurance

What are the health effects of increased SO₂?

What kind of medical care will be needed?

What kind of costs are expected for this medical treatment?

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Your job in health insurance

What are the health effects of increased SO₂?

What kind of medical care will be needed?

What kind of costs are expected for this medical treatment?

Citizen from China Opposed

Background:

You live in China. Your country has had devastating effects from acid rain and acid fog. The unregulated factories have caused nationwide health issues.

You will need to research health effects of SO₂ and determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a biological description including age, family, residence and family OR
- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

You will need to know the air quality of the city you live in China and what the Chinese government is doing about it.

You will need to know the health effects of SO₂

You will need to know how much SO₂ is released per year in China

You will need to know why a U.S. citizen should be concerned by China's air pollution.

You will need to know the cost of electricity in the area.

You will need to know the cost of a car from your local factory.

Research the change in cost if emissions regulation is lessened.

Health effects of SO₂ that may harm your family

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Air quality in city of China you live

What China is doing about SO₂ emissions

Health effects and cost of medical care

How much SO₂ is released per year in China

Explain why the U.S. should be concerned.

Current cost of electricity in the area.

Current cost of a car from your local factory.

Change in cost if emissions regulation is lessened

Health effects and cost of medical care

Parent Undecided

Background:

You live in Anytown, USA. You must choose if you are in favor or opposed to raising SO₂ emissions. You have several children and they have been affected by breathing issues before. You don't want expensive electricity or other prices to go up. You must decide if you are in favor or opposed to loosening the SO₂ regulations.

You will need to research health effects of SO₂, rising costs due to pollution clean-up and determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a biological description including age, family, residence and family
- You will introduce yourself to the group and state your credentials.

2. Research:

You will need to know the cost of electricity in the area.

You will need to know the cost of a car from your local factory.

Research the change in cost if emissions regulation is lessened.

Health effects of SO₂ that may harm your family

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Current cost of electricity in the area.

Change in cost if emissions regulation is lessened (electricity and products)

Health effects and cost of medical care

Stock Broker In Favor

Background: You are a stockbroker on the National Association of Securities Dealers Automated Quotations (NASDAQ) stock exchange. As a stockbroker you work with clients and it is your job to manage and look after their investments. To do this you must advise on which investments to make, in other words your goal is to find companies with the largest profit margins for your clients. As a stockbroker you understand how regulations affect various industries such as electric utilities and manufacturing companies.

You will need to research the job of a stock broker and determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

What does the NASDAQ do?

Jobs at the NASDAQ

How do you make money for your clients and yourself?

Explain the economics of relaxing regulations to profits of industry

Explain the costs and benefits to your clients

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials

Your job at the NASDAQ

What does the NASDAQ do?

Explain the economics of loosening regulations to profits of industry

Explain the costs and benefits to your clients

Biologist / Environmentalist

Opposed

Background:

You are employed as a biologist / environmentalist. You are concerned for the wildlife and forests of the world. Perhaps you work for Greenpeace / World Wildlife Fund / The Sierra Club / Audubon Society or another concerned group.

You will need to research jobs of a biologist / environmentalist and determine who will be speaking at the hearing.

Presentation

1. Develop a character:

- Create a professional biographical description which must include education and experience.
- You will introduce yourself to the group and state your credentials.

2. Research:

What does your group stand for?
What does your group do?
Your job in the group
What is an environmental impact statement?
How does SO₂ emissions affect the environment?

3. Data to Present: (to include in your presentation.)

Minimum requirements:

Your credentials
What does your group stand for?
What does your group do?
Your job in the group
What is an environmental impact statement?
How does SO₂ emissions affect the environment?

Senate Hearing Sign up Sheet

Coal Miners
In Favor

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Industry (Small)
In Favor

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Industry (Large)
In Favor

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Local Utility Company
In Favor

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Stock Broker
In Favor

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

U.S. EPA
In Favor

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Financial Institution
Undecided

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Parents
Undecided

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Residential Consumer
Undecided

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Biologist / Environmentalist
Opposed

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Citizen from China
Opposed

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Insurance Company
Opposed

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Main DEP
Opposed

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Michigan DEQ
Opposed

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing Sign up Sheet

Public Health Worker
Opposed

1st Hour

- 1.
- 2.
- 3.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

Senate Hearing on Sulfur Dioxide Emission Worksheet

Debate

Name
Hour

Special Interest Group:

Group Members:

Position on change in Sulfur dioxide Emissions:

Why?

Character

Development: _____

Information you must know:

Question

2

Coal Miners

Question 1

Question

2

Industry, small

Question 1

Question

2

Industry, large

Question 1

Question

2

Local Electric Utility

Question 1

Question

2

Stock Broker

Question 1

Question

2

US EPA

Question 1

Question

2

Biologist / Environmentalist

Question 1

Question

2

Citizen from China

Question 1

Question

2

Insurance Company

Question 1

Question

2

Maine DEP

Question 1

Question

2

Michigan DEQ

Question 1

Question

2

Public Health Commission

Question 1

Question

2

Financial Institution

Question 1

Question

2

Parents:

Question 1

Question

2

Residential Consumer

Question 1

Question

2

Other things we need to include: