

Hazard Literacy Center

Hazard Literacy Education Program

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An Energy Transition Public Hearing in Response to the Climate Crisis: Focusing on Wind Power Issues



1. Program Overview

This program is designed to engage students in exploring the social and scientific dimensions of the climate crisis and energy transition through a public hearing activity. Using a real-world controversy surrounding the installation of wind turbines, students take on the roles of different stakeholders, such as environmental organizations, local residents, animal protection organizations, and policymakers, and develop claims and supporting evidence from their assigned perspectives. During the public hearing, students present their positions and engage in rebuttals and counter-rebuttals. Through this process, they experience how decision-making involves not only scientific evidence but also economic, environmental, and social considerations. Students come to understand that decisions about science and technology cannot always be reduced to simple judgments of right or wrong; rather, they must be considered within social contexts in which diverse values, interests, and priorities may conflict. The program also provides students with opportunities to explore how scientific evidence, social consensus, and ethical considerations can be integrated when making decisions about issues related to hazards and disasters.

Grade Level	Grades 6	Instructional Methods	Role-play, discussion, and public hearing
Learning Environment	A classroom suitable for discussion and presentations	Duration	120 minutes (40 minutes × 3 class periods)
Required Materials	Role cards, argument-planning worksheets, and writing tools		

2. Learning Objectives (Hazards Literacy Framework)

① Students will be able to develop an integrated understanding of the climate crisis and energy transition from both scientific and social perspectives within the context of hazards and disasters.

② Students will be able to analyze the perspectives and interactions of different stakeholders involved in controversies surrounding the installation of wind turbines.

③ Students will be able to participate in a public hearing and present evidence-based arguments from their assigned perspectives.

Learning Objectives	Knowledge & Understanding		Reasoning & Skills					Values & Attitudes			Psychology & Emotion			Behavioral & Practical Enagement		
	A1	A2	B1	B2	B3	B4	B5	C1	C2	C3	D1	D2	D3	E1	E2	E3
Objective ①	O	O							O							
Objective ②			O	O				O		O						
Objective ③							O	O			O				O	O

3. Key Concpets

· Climate Crisis and Energy Transition

· Diversity of Stakeholder Perspectives

· Decision-Making on Socioscientific Issues Related to Science and Technology

4. Program Sequence

Learning Activities	
Introduction	·Recognize issues related to hazards and disasters through examples of the climate crisis, such as heat waves and sea-level rise. ·Explore the relationship between energy use and environmental issues. ·Introduce a case involving the installation of wind turbines and identify the key issues surrounding it.
Activity1	·Understand the principles and characteristics of wind power generation. ·Explore the benefits and limitations of wind power development. ·Identify different stakeholders, such as environmental organizations, local residents, and government agencies. ·Assign stakeholder roles and organize each group's position.
Activity2	·Develop arguments from each stakeholder's perspective using supporting evidence and information. ·Conduct a public hearing: present positions, exchange rebuttals and counter-rebuttals, compare arguments from other groups, and evaluate their importance.
Activity3	·Formulate a final position based on the outcomes of the public hearing. ·Analyze the scientific evidence and social values considered during the decision-making process.
Wrap-up	·Share whether and how students' positions changed after the public hearing. ·Reflect on the public hearing experience and decision-making process.

5. Theoretical Background and Activity Design for Disaster Education

The climate crisis and energy issues are representative hazard- and disaster-related issues in which natural phenomena and human activities are closely interconnected. Such issues cannot be addressed through scientific facts alone; social values, economic interests, and environmental impacts must also be considered. Renewable energy technologies such as wind power can contribute to reducing carbon emissions, while also raising concerns related to noise, landscape impacts, ecological effects, and economic costs. Understanding these issues therefore requires students to move beyond a single perspective and compare and analyze the positions of multiple stakeholders.

This program uses a public hearing format to provide students with opportunities to experience diverse stakeholder perspectives and compare different claims and supporting evidence. Through this process, students explore the complexity of hazard- and disaster-related issues and examine how science and technology are interpreted and used within broader social contexts. Ultimately, the activities are designed to develop students' ability to engage in reasoned decision-making by considering both scientific evidence and diverse social values.

6. Instructional Considerations

Teachers should present a balanced range of perspectives so that students are not guided toward any particular position. Socioscientific issues involving technologies such as wind power should not be reduced to a simple pro-versus-con debate. Instead, students should be encouraged to explore the perspectives, interests, and concerns of multiple stakeholders.

Teachers should also ensure that students' arguments go beyond personal opinions by encouraging them to support their claims with scientific evidence and relevant information. During discussions, students should be guided to engage with opposing views respectfully and to construct rebuttals based on logical reasoning and evidence rather than emotional confrontation. Teachers should remain neutral and use open-ended questions to extend students' thinking rather than directing them toward a predetermined conclusion.

Students should also be supported in distinguishing between scientific information and social value judgments, while recognizing that both may need to be considered in real-world decision-making. Finally, teachers should not encourage students to avoid the uncertainty, disagreement, and conflicts inherent in these issues. Instead, students should be provided with opportunities to recognize and reflect on such tensions as part of the decision-making process.

7. References

- Aitken, M. (2010). Why we still don't understand the social aspects of wind power: A critique of key assumptions within the literature. Energy Policy, 38(4), 1834–1841.
- Shin, C. O., & Yook, K. H. (2011). Analysis of the environmental and economic impacts of offshore wind power (Occasional Research Report 2011-05) [In Korean]. Korea Maritime Institute.
- Yang, C. H. (2022, November 1). The bright and dark sides of renewable energy (2): Offshore wind power divides a village—"We don't even greet each other anymore" [In Korean]. KBS News. KBS News article. https://news.kbs.co.kr/news/pc/view/view.do?ncd=5590100.

An Energy Transition Public Hearing in Response to the Climate Crisis: Focusing on Wind Power Issues

Topic	Differences in Flood Damage and Their Causes
What Will We Learn?	① Understand climate change and energy transition issues from both scientific and social perspectives in the context of hazards and disasters. ② Analyze the positions and interactions of various stakeholders surrounding wind power development .③ Participate in a public hearing discussion and present your position based on evidence.

1 Think About It

- Imagine that you are an environmental journalist investigating signs of climate change that threaten our lives. Think about what events are occurring and what warnings these signs may be giving us.

1) News Headline

2) Current Situation (What is happening now?)

3) Future Risks (How might our lives change if this continues?)

2 Understanding the Climate Crisis and Wind Power

- Using the words in the box below, complete the “climate crisis mechanism” freely.

※ You do not need to use them in the order given.

Word Bank
Indiscriminate energy use / Fossil fuel combustion / Increased carbon dioxide emissions / Global warming / Hazards and disasters (heat waves / sea-level rise)

[Energy Use] → ( ) → ( ) → ( ) → [Climate Crisis]

- Find and read information about wind power generation, and analyze its positive and negative aspects.

Category	Positive Aspects	Negative Aspects
Key Points	e.g., Clean energy without fine particulate matter emissions	e.g., Low-frequency noise and landscape disruption

2 Preparing for the Public Hearing

1) What stakeholder does your group represent?

(e.g., environmental activist, village leader, government policymaker, local resident)

2) What value does your group consider most important when deciding whether to build a wind power plant?

(e.g., ecosystem protection, economic benefits for the community, national energy security)

3) Decide your group's position and find evidence to support it.

Claim	We (support / oppose) the construction of the wind power plant.
Evidence Objective facts such as numerical data, news reports, and scientific principles	
Reasoning Why does this evidence support our claim?	

3 Participating in a Public Hearing

1) Listen to what other groups say at the public hearing and take notes.

Role	Key Points	Importance
		☆☆☆☆☆
		☆☆☆☆☆
		☆☆☆☆☆

2) If you were the person making the final decision on whether to build the wind farm, what would you decide?

Final Decision	I am in favor of / against building the wind farm.
Values to Consider	e.g., electricity generation, energy issues, environmental impacts, harm to animals, residents' lives, costs, etc.
Reasons	

4 Wrapping Up the Lesson

- What is something new you learned from this lesson?