

RENEWABLE ENERGY



FOR A SUSTAINABLE FUTURE

The Current Environmental Issue is always selected by the host of the North American competition. In 2024, New York will be the host.

In our modern world, energy touches almost every aspect of our lives. It lights our homes, transports our food, cleans our water, and fuels our cars, powers life-saving medical equipment, and so much more. The production and use of energy are deeply entwined with the economy, social and political issues, and the environment. The environmental, economic, and social outcomes of the choices being made about energy now will shape the future of our planet. Governmental policies, industry, and public opinion are shifting to embrace a sustainable future that includes renewable energy.

Decisions about sustainable energy are not just made by politicians and corporations. Individuals can choose what energy practices to support and can advocate for the transition to renewables. New energy innovations are constantly transforming this emerging field, with technological developments in energy sources, production methods, and flexible delivery.

Students will learn about the different sources of renewable energy; the challenges facing the transition from traditional fossil fuels to renewables; the environmental, economic, and social impacts of energy consumption; and how individuals can affect change in their communities.

Key Topic #1: Introduction to Energy and Traditional Energy Infrastructure

1. Define energy and explain how energy is relevant in our everyday lives.
2. Describe the different levels at which energy decisions are made, and what factors affect energy decision-making.
3. Explain the setup and design of traditional energy infrastructure and distribution systems.
4. Explain how traditional non-renewable energy sources such as petroleum, coal, and natural gas are extracted and utilized to create energy.
5. Identify the environmental, social, and economic advantages and disadvantages of these traditional non-renewable energy sources, and evaluate their suitability for meeting the world's energy needs in the future.
6. Identify threats to the energy system for both traditional and renewable sources.

Key Topic #2: Renewable Energy and Infrastructure

7. Describe the criteria for an energy source to be renewable, and identify examples.
8. Explain how Solar, Wind, and Hydroelectric systems generate electricity, and identify the technological advancements that have made this possible.
9. Identify the environmental, social, and economic advantages and disadvantages of Solar, Wind, and Hydroelectric power, and evaluate their suitability for meeting the world's energy needs in the future. (See also Key Topic #3)
10. Explain the setup and design of renewable energy infrastructure and distribution systems.
11. Describe how renewable energy can contribute to energy security.

Key Topic #3: Renewable Energy and Natural Resources

12. Describe the impact renewable energy projects have on natural resources and the environment on both local and global scales.
13. Identify actions or innovative approaches to address negative impacts from renewable energy on natural resources and the environment.
14. Explain the benefits and limitations of concurrent use of renewable energy projects on agricultural lands.

Key Topic #4: Global Perspectives on Energy

15. Describe the landscape of renewable energy across various regions of the world, including strengths and challenges.
16. Explain the barriers to transitioning to renewable energy and identify solutions to these barriers.
17. Evaluate the effectiveness of different approaches to renewable energy given varying environmental, social, and economic conditions.
18. Explain the roles of economic and political policy, public perception, community advocacy, and scientific advancements in a successful transition to renewable energy.

Key Topic #5: Local Action and Energy Equity

19. Identify actions that can be taken on the individual and local level to support renewable energy.
20. Define Energy Justice, and describe its connection to environmental justice and climate justice.
21. Explain the components of Energy Justice and how these interact with the transition to renewable energy.