A good wind industry should invest to develop them. Technologies might be most successful, and where the energy information systems (GIS), experts can visualize where these harnessing renewable energy resources to generate electricity.

Not all geographic locations are equal when it comes to renewable energy suitability. Less energy is produced in regions with fewer resources. More energy is produced where there are fewer obstructions. Wind speeds are generally higher in wide-open areas and at high altitudes, where there are fewer obstructions.

Wind

Solar

Solar energy suitability depends on latitude, season, and time of day. The more consistently the sun reaches a specific location, the more suitable it is as a resource.

Chasing the sun's path

Solar energy is the most abundant form of energy. It is clean and inexhaustible. It provides a third of the world's energy by 2060. Nearly 1,000 new solar plants are built every week.

Utility-Scale Solar

Algae Biofuel

Artificial photosynthesis

The technology can turn waste carbon dioxide into renewable fuel for a variety of uses.

Where We Will Live & How Much We Will Consume

Understanding energy challenges and solutions is critical to making informed energy decisions—an essential skill for all citizens. Computing the world's projected energy consumption and global population density illustrates both where in the world energy is used and our universal need for it.

Explore the map and all its features to excite your curiosity about the future of energy.
EARTH: THE OPERATORS' MANUAL

[Link to TED talk by Amory Lovins]

U.S. DEPARTMENT OF ENERGY

THE GREAT ENERGY CHALLENGE

New Orleans, telling the story of Earth's climate history and our relationship with fossil fuels. By 2050, the key is integrating four energy-using sectors—and four kinds of innovation.

This guide does not seek to identify all areas of energy understanding, but rather to focus on those that are essential for all citizens K-Gray. It presents energy concepts in a way that, if understood and applied, will help individuals and communities make informed decisions to conserve energy, conserve resources, and reduce the amount of pollution and health risks they face in their everyday lives.

One key element will be consuming less energy as a whole. According to the Global Energy Network, an international think tank working to enhance the use of sustainable energy, our consumption has grown to the point where the resources we need and access are in conflict. We need to reduce our energy use in order to sustain our environment.

We must also begin to look toward new technologies and renewable energy resources that may prove more sustainable for our growing population. Energy-related risks require the involvement of many experts across academic, public, private, international, and other sectors. By working together, we can create a single solution.

Energy conservation comes from reliable thinkers such as the one on this page. While using wind turbines and solar power to harness the wind's power is an innovative way, it will only last as long as there is enough energy left in the wind. We must also be careful to look toward new technologies and renewable energy resources that may prove more sustainable for our growing population.

Energy efficiency models will allow us to reach higher, more efficient, and even more advanced forms of energy for our growing population.

How does this poster fit into the energy literacy framework?

Students will use the geographic perspective to explore energy consumption, population density, and ways to extract them, we must look to the future and find a way to meet our growing needs. The National Geographic Education has designed a collection of educational materials to help us understand and conserve our energy future. National Geographic Education, the Center for Education, and the Center for Science are pleased to present this project to answer the question, drawing on several sources and generating additional questions about energy consumption expected to increase 40% in the next twenty years.

GO ONLINE TO NATGEOED.ORG/CONNECT

FUNDAMENTAL CONCEPT 6.4: Earth has limited energy resources.

In 2012, the Department of Energy (DOE) and the American Association for the Advancement of Science (AAAS) published a guide titled "Energy Literacy: Essential Knowledge and Skills for an Energy Sustainable World." The guide is designed to help students understand the fundamental concepts of energy, including the limitations of energy resources.

HOW DOES THIS POSTER FIT INTO THE ENERGY LITERACY FRAMEWORK?

The focus of this poster is our global population density, our projected energy consumption, alternative energy sources, and ways to extract them. We must look to the future and find a way to meet our growing needs.

Dear Educator:

The Connect! Transform the Future project is a national collaboration and conservation about our energy future. National Geographic Education, the Center for Education, and the Center for Science are pleased to present this project to answer the question, drawing on several sources and generating additional questions about energy consumption expected to increase 40% in the next twenty years.

Read the National Geographic Education encyclopedic entry (Geographic Skill 4: Analyzing Geographic Information) and the National Geographic Learning (National Geographic Learning) to learn more about the energy future.

STANDARDS FOR GRADES 6-12 LITERACY IN HISTORY/SOCIAL STUDIES, GEOGRAPHIC SKILLS, AND TECHNOLOGY

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