Wind Energy

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Basics

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Wind farms are most effective in areas with high and steady wind speeds, such as the central United States: Texas, Oklahoma, Kansas, and Iowa together produce around half of all the wind power in the country. Wind speed generally increases with height, which is why wind turbines tend to be very tall.
Wind speeds over the ocean tend to be faster and steadier than on land. As a result, some countries have developed offshore wind farms, which come with their own geoscientific and engineering challenges. The first offshore wind farm in the United States began producing electricity off the coast of Rhode Island in 2016. Read more

Frequently Asked Questions

What are the advantages and disadvantages of offshore wind farms?
American Geosciences Institute
What are the major sources and users of energy in the United States?
U.S. Energy Information Administration
How much U.S. electricity is generated from renewable energy?
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How much of world energy consumption and electricity generation is from renewable energy?
American Geosciences Institute

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Coal

Coal is a carbon-rich rock formed from plants that grew millions of years ago. Coal is a major source of electricity in the United States and the largest source of energy for electricity generation worldwide.

Energy

All of the energy we use comes from the Earth, its atmosphere, or the Sun. Some resources are mined or extracted, like coal, uranium, oil, and gas. Others, like wind, solar, tidal, biomass, and hydropower resources, are harnessed at the Earth's surface. Geoscientists play an essential role in developing energy resources and evaluating their environmental impacts.

Geothermal Energy

Geothermal energy is harvested by drilling into underground reservoirs of steam or water heated by the Earth. While western states like California and Nevada lead the country in geothermal energy production, emerging technologies may make it possible to extract geothermal energy throughout the United States.

Hydraulic Fracturing

Hydraulic fracturing is a technique used in one step of the extraction of energy resources. Sometimes referred to as "fracking," its wide application over the last decade has led to debate over its risks and benefits.

Hydropower

Hydropower uses the energy from moving water to power machines or generate electricity. Used for over two thousand years in water mills, today hydropower is more commonly associated with electricity generation.

Nuclear Energy

Nuclear energy is produced from fission, which splits the large atoms of heavy elements like uranium into smaller atoms, releasing enormous amounts of energy. Thirty U.S. states have nuclear power plants, and nuclear energy makes up around 20% of the U.S. electricity supply.

Oil and Gas

Petroleum ("oil") and natural gas are hydrocarbons that formed over millions of years under heat and pressure deep in the Earth. Petroleum and natural gas are the largest sources of energy in the United States.

Renewable Energy

Renewable energy comes from sources that are constantly replenished, like running water, the heat of the Earth, the Sun's light, or wind. Renewables account for around 11% of U.S. energy consumption and 17% of electricity production.

Solar Energy

Solar energy is energy from the Sun, which can be harnessed in several ways. Solar panels use the photovoltaic effect to generate electricity directly from sunlight. The Sun’s heat can be used directly to heat water or air, or it can be concentrated to boil water, driving steam turbines that generate electricity.

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House subcommittee reviews three wind energy bills

(2018-07-10)

June 26, 2018 The House Natural Resources Subcommittee on Energy and Mineral Resources held a hearing to discuss three separate wind energy bills on June 26. A draft bill called the National OCS Renewable Energy Leasing Program Act would amend the Outer Continental Shelf Lands Act (43 U.S.C. 1331)...

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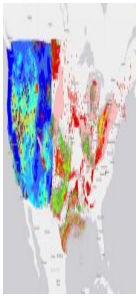

Interactive map of energy resources in the United States
U.S. Geological Survey

The U.S. Geological Survey's interactive map, "Energy In Our Nation," provides a wide range of information on energy resources in the United States, including: Oil and gas exploration and production through 2005/2006 The 2012 USGS shale gas assessment for the United States Geothermal...

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