

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.

Basics



Coal is a rich source of energy formed from plants that grew in swamps tens to hundreds of millions of years ago. The plants were buried deeply under younger and younger layers of dirt and rock, heated, and compressed into a carbon-rich rock.[1] Burning coal releases more carbon dioxide per unit of energy produced than any other fossil fuel.[2] [Read more](#)

Frequently Asked Questions

Which states are the largest producers and consumers of coal?

American Geosciences Institute

What is coalbed methane?

American Geosciences Institute

What are the different types of coal?

American Geosciences Institute

What types and amounts of energy are produced in each state?

U.S. Energy Information Administration

How much of U.S. carbon dioxide emissions are associated with electricity generation?

U.S. Energy Information Administration

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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.



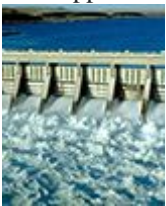
Geothermal Energy

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.



Mineral Resources

Global demand is rising for mineral resources of all kinds, including metals, industrial minerals, and solid fuels like coal. Mineral resources are unequally distributed around the globe, reflecting the vast differences in geology of different parts of the Earth. Geoscientists play an essential role in locating mineral resources and designing processes for their safe extraction.



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

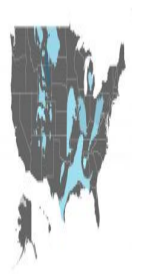
Solar energy is energy from the Sun, which can be harnessed in several ways. Solar panels use the photovoltaic effect to generate electricity directly from sunlight. The Sun's heat can be used directly to heat water or air, or it can be concentrated to boil water, driving steam turbines that generate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



Wind Energy

Wind energy is harnessed by wind turbines, which convert the energy of the wind into electricity. Wind energy is one of the largest sources of renewable energy. Wind farms can now be found in more than 40 states.

Maps & Visualizations



Interactive visualization of United States coal data

U.S. Energy Information Administration

The U.S. Energy Information Administration's Coal Data Browser provides a variety of state-specific and nationwide visualizations for their coal reports and data sets. The annual data sets go back to 2008 and can be displayed as a time series graph, bar graph, U.S. map, or coal basin map. Data set...

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Case Studies & Factsheets

Screenshot of the USEITI case studies showing the Boone, Logan and Mingo counties case study highlighted

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Coal Mining in Boone, Logan, and Mingo Counties, West Virginia

The U.S. Department of the Interior's Office of Natural Resources Revenue, Information and Data Management has produced a series of case studies on extractive industries across the United States, focusing on coal, copper, gold, iron, natural gas, and oil.

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