U.S. Energy Facts *Explained*

Consumption & Production

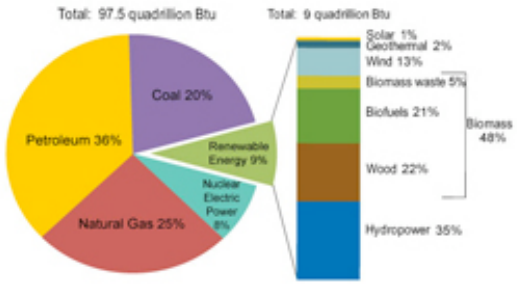
Americans Use Many Types of Energy

Petroleum (oil) is the largest share of U.S. primary energy consumption, followed by natural gas, coal, nuclear electric power, and renewable energy (including hydropower, wood, biofuels, biomass waste, wind, geothermal, and solar). Electricity is a secondary energy source that is generated from these primary forms of energy.

Energy sources are commonly measured in different physical units: barrels of oil, cubic feet of natural gas, tons of coal, kilowatthours of electricity. In the United States, British thermal units (Btu), a measure of heat energy, is a commonly used unit for comparing different types of energy. In 2011, U.S. primary energy use was about 98 quadrillion (=10^{15}, or one thousand trillion) Btu.

The major energy users are residential and commercial buildings, industry, transportation, and electric power generators. The pattern of fuel use varies widely by sector. For example, oil provides 93% of the energy used for transportation, but only 1% of the energy used to generate electric power. Learn more about the Use of Energy in the United States.

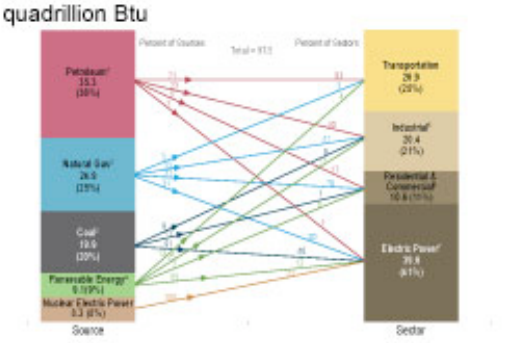
U.S. Energy Consumption by Energy Source, 2011



Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 10.1 (March 2012), preliminary 2011 data.

Primary Energy Consumption By Source and Sector, 2011

quadrillion Btu



See endnotes.
Source: U.S. Energy Information Administration, *Monthly Energy Review* (April 2012), Tables 1.3, 2.1-2.5, preliminary 2011 data.

Domestic Energy Production Meets about 80% of U.S. Energy Demand

In 2011, energy produced in the United States provided about 80% of the nation's energy needs. The remainder of our energy was supplied mainly by imports of petroleum.

The three major fossil fuels — petroleum, natural gas, and coal — account for most of the nation's energy production. The breakout of total U.S. energy production in 2011 was:

- Natural gas — 30%
- Coal — 28%
- Petroleum (crude oil and natural gas plant liquids) — 19%
- Renewable energy — 12%
- Nuclear electric power — 11%

The Mix of U.S. Energy Production Changes

The nation's overall energy history is one of significant change as new forms of energy were developed. The three major fossil fuels — petroleum, natural gas, and coal — have dominated the U.S. energy mix for over 100 years. *Energy Perspectives* provides insights into changing energy production and consumption patterns since 1949. Recent changes in U.S. energy production include:

- The share of coal produced from surface mines increased significantly: from 25% in 1949 to 51% in 1971 to 69% in 2010. The remaining share was produced from underground mines.

- In 2011, natural gas production exceeded coal production for the first time since 1981. More efficient, cost-effective

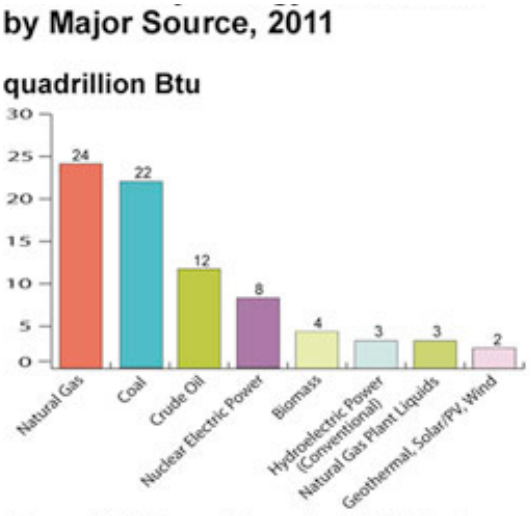
U.S. Primary Energy Production

drilling techniques, notably in the production of natural gas from shale formations, led to increased natural gas production in recent years.

- Although total U.S. crude oil production has generally decreased each year since it peaked in 1970, it increased by 3% in 2010 from 2009, and about 4% in 2011 from 2010. These increases were led by escalating horizontal drilling and and hydraulic fracturing, notably in the North Dakota section of the Bakken formation.

- Natural gas plant liquids (NGPL) are hydrocarbons that are separated as liquids from natural gas at processing plants and used in petroleum refineries. Production of NGPL fluctuates with natural gas production, but their share of total U.S. petroleum field production increased from 8% in 1950 to 28% in 2011.

- In 2011, total renewable energy consumption and production reached all-time highs of 9 quadrillion Btu each; due mainly to relatively high hydroelectric power generation and continuing increases in biofuels use and wind power generation. In 2011, biofuels production was about 9 times greater than in 2000, and wind generation was about 20 times greater than in 2000.



Source: U.S. Energy Information Administration, *Monthly Energy Review* (March 2012), Table 1.2, preliminary 2011 data.

Learn More

- Energy Perspectives — http://www.eia.gov/totalenergy/data/annual/perspectives.cfm
- Annual Energy Review — http://www.eia.gov/totalenergy/data/annual/
- Annual Energy Outlook — http://www.eia.gov/forecasts/aeo/
- Monthly Energy Review — http://www.eia.gov/totalenergy/data/monthly/

Last Updated: May 25, 2012

Independent Statistics & Analysis
U.S. Energy Information Administration

http://www.eia.gov/energyexplained/index.cfm?page=us_energy_home