



U.S. Department of Energy

Energy Efficiency and Renewable Energy*Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable*

EERE

[Home](#) | [Site Map](#) | [A-Z Index](#) | [EERE Information Center](#)

Hydrogen


Hydrogen, Fuel Cells & Infrastructure Technologies Program

Hydrogen Organizations & Resources

- › U.S. Department of Energy
- › U.S. Federal Government
- › U.S. State & Local
- › U.S. Trade & Nonprofit
- › U.S. Universities and Research Institutes
- › International Organizations
- › Discussion Groups
- › Newsletters & Magazines
- › Products & Services

Hydrogen Topics

Hydrogen is the third most abundant element on the earth's surface, where it is found primarily in water (H₂O) and organic compounds. It is generally produced from hydrocarbons or water; and when burned as a fuel, or converted to electricity, it joins with oxygen to again form water.

[More basic information about hydrogen energy is also available.](#)

Technologies Production

Hydrogen is produced from sources such as natural gas, coal, gasoline, methanol, or biomass through the application of heat; from bacteria or algae through photosynthesis; or by using electricity or sunlight to split water into hydrogen and oxygen.

Transport and Storage

The use of hydrogen as a fuel and energy carrier will require an infrastructure for safe and cost-effective hydrogen transport and storage.

Fuel Cells

Hydrogen's potential use in fuel and energy applications includes powering vehicles, running turbines or fuel cells to produce electricity, and generating heat and electricity for buildings. The current focus is on hydrogen's use in fuel cells.

Issues

Safety

Hydrogen has an excellent safety record, and is as safe for transport, storage and use as many other fuels. Nevertheless, safety remains a top priority in all aspects of hydrogen energy. The hydrogen community addresses safety through stringent design and testing of [storage and transport concepts](#), and by developing [codes and standards](#) for all types of hydrogen-related equipment.

The Hydrogen Economy

The vision of building an energy infrastructure that uses

Hydrogen News

- [DOE to Guarantee Billion in Loans for Clean Energy Projects](#)
August 07, 2006
- [DOE Small Business Awards Reveal Cutting Edge Research Topics](#)
August 02, 2006
- [FutureGen Plant Location Narrowed to Illinois or Texas](#)
August 02, 2006

hydrogen as an energy carrier — a concept called the "hydrogen economy" — is considered the most likely path toward a full commercial application of hydrogen energy technologies.

[EERE Home](#) | [U.S. Department of Energy](#)
[Webmaster](#) | [Web Site Policies](#) | [Security & Privacy](#) | [FirstGov.gov](#)

Content Last Updated: 08/10/2006