

Discover the **wonders** of natural gas.





Natural gas was formed millions of years ago when most of the earth was covered by water. Plant and tiny animal remains were mixed and layered with sand and mud. When the earth underwent natural but drastic changes to form today's landscape, the intense heat and pressure transformed these fossils into hydrocarbons – chemical compounds of hydrogen and carbon atoms. Depending on the arrangement of the atoms, what were once sea plants and animals are now natural gas or crude oil deposits contained in the earth's crust.

Natural gas (a combustible, gaseous mixture of simple hydrocarbons) is a very light portion of petroleum, which includes both natural gas and crude oil. Natural gas may rise to the surface through natural openings in the earth's crust or can be brought to the surface through man-made wells. Humans discovered thousands of years ago that this naturally occurring resource could be burned and used for heat and light. Today, natural gas continues to be a safe, efficient, environmentally friendly and abundant energy source, and new uses for it are still being discovered.

We keep America
going strong.[®]
America's Oil and Natural Gas Industry

◀ Pacific Northwest National Laboratory researchers have joined with leading scientists worldwide in a collaborative effort to pursue a massive energy reserve that, by itself, could keep America powered into the next century. Ice-like gas hydrate (methane gas) trapped within rock deep below the Earth's surface may hold promise for new energy resources.
Photo courtesy of Pacific Northwest National Laboratory.

Facts about **natural gas**



Courtesy: Marathon Oil Company

If you've ever lived in a home heated by natural gas, you know how warm and comfortable it can be. And if you ask a chef, chances are they'll say that natural gas is the best way to cook.

The reasons why people prefer natural gas are simple. It's efficient, reliable, and easy to use, not to mention a tremendous value. Natural



gas gives you clean energy to heat your water, cook your favorite recipes, dry your clothes, keep your home warm and cozy, heat your

pool, and light the great outdoors. More and more people choose gas for their energy because, as we like to say, it's a natural.

Home, sweet home. More homes in the U.S. are heated with natural gas than any other energy source. Some 59 million American homes use natural gas, and 70% of newly built single-family homes feature natural gas. In 2001, natural gas was the most economical source for home energy needs, costing one-third as much as electricity.



Natural gas is here for you. In fact, it provides about 24% of the energy Americans use. You'll find natural gas working hard in schools, restaurants, stores, hospitals, and a host of other places, cooking great meals, heating in winter, cooling in summer, and dehumidifying all year long.

The future is now. New high tech gas turbines are being used in power plants to generate electricity more efficiently than ever before. These new plants are less expensive and faster to build, and they help improve air quality since natural gas emits less pollution than other fuel sources.

On the road again. More than 1.7 million natural gas vehicles (NGVs) hit the road every day around the world. About 100,000 of them, mostly in fleets, operate here in the U.S. You'll find natural gas powering buses, municipal vehicles, automobiles, and delivery trucks all over town.

An ingredient for a better life. Natural gas can be used with other ingredients to make products we use in our daily lives. Plastics, paint, glass, steel, fertilizer, antifreeze for cars, paper, building materials, fabrics, and a slew of other products are made with natural gas. You may be wearing it right now!

Industrial strength that's right at home.

Industry consumes about 40% of the natural gas used in the U.S. every year, making it the largest consumer of natural gas. Residential use is second at 22%, while the business sector uses 15% and 14% is used to generate electricity.



Courtesy: Dallas Area Rapid Transit/Department of Energy - National Renewable Energy Laboratory

Right here, right now. The U.S. is the world's second largest producer of natural gas, and consumes about one-third of the world's output, making it the largest gas consuming region in the world. The U.S. used 22.5 trillion cubic feet of natural gas in 2000. About 85% of the natural gas used in the U.S. is also produced in the U.S. Most of the rest comes from Canada.

There's a lot out there. At current production rates, it's estimated that the U.S. has enough

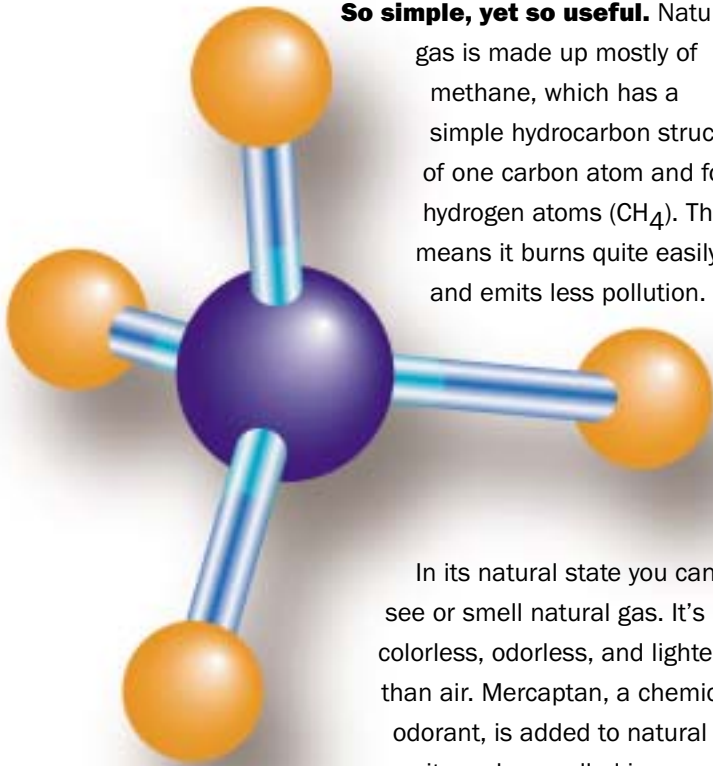
natural gas resources to last more than 60 years. Although large deposits of natural gas are known to exist in about half of the 50 states, just five states – Texas, Louisiana, Alaska, New Mexico, and Oklahoma – hold more than one-half of the nation's reserves.

Headed your way. Back in 1821, William Hart, considered the "father" of natural gas in the U.S., drilled the first successful domestic gas well in Fredonia, New York. Today, natural gas service is available in all 50 states, brought to you by more than 1.4 million miles of natural gas pipeline.



Visit our web site at www.api.org and learn more about oil and natural gas!

So simple, yet so useful. Natural gas is made up mostly of methane, which has a simple hydrocarbon structure of one carbon atom and four hydrogen atoms (CH₄). This means it burns quite easily and emits less pollution.



In its natural state you can't see or smell natural gas. It's colorless, odorless, and lighter than air. Mercaptan, a chemical odorant, is added to natural gas so it can be smelled in case it leaks.

The cleanest burning fossil fuel. When natural gas is burned, it produces mostly carbon dioxide and water vapor – the same substances emitted when you breathe. Compared with other fossil fuels, natural gas emits the least amount of carbon dioxide into the air as it's used – making natural gas the cleanest burning fossil fuel of all.

Courtesy: Ford Motor Company / Department of Energy - National Renewable Energy Laboratory



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