



Natural Gas 101



INSTITUTE FOR 21ST CENTURY ENERGY | U.S. CHAMBER OF COMMERCE

Natural Gas is a plentiful, domestically produced, clean burning fuel that heats and powers **over 60 million U.S. homes**. Natural gas is also used at home for cooking, by utilities to generate electricity for consumers and businesses, and by industry as the main component in many items we use every day, including paper, plastics and medicines. Natural gas is an important component of a common sense energy strategy that promotes a diverse, secure, prosperous, and clean energy future.

FACTS AND FIGURES:

U.S. Consumption: The U.S. consumed **23.2 trillion cubic feet (tcf)** of natural gas in 2008. To put that in perspective, **one tcf of natural gas is enough to heat 15 million homes for one year**.

U.S. Production (dry gas): In 2008, **20.6 tcf - about 88 percent of natural gas consumed in the U.S. - was produced domestically**. At current consumption rates, domestic natural gas resources could power U.S. homes and businesses for more than 100 years, and this figure is likely to increase through technology innovations.

U.S. Imports: **Thirteen percent of the natural gas consumed in the U.S. was imported in 2008**. Nearly all came from Canada via pipeline. This figure was approximately three percent lower than import figures from recent years due to an increase in domestic production. Just over one percent of U.S. natural gas imports arrived in the form of liquefied natural gas (LNG) from overseas.

FREQUENTLY USED TERMS

Natural Gas: An odorless, tasteless, and colorless fossil fuel composed of methane gas that is found in various rock formations around the world. The natural gas used in homes everyday for power, heating, cooling and cooking is called “**consumer-grade natural gas**” or “**dry gas**” and is composed almost exclusively of methane gas. Natural gas is considered “**wet gas**” when other substances such as water vapor or carbon dioxide are mixed in with the methane gas and it must be separated before it can be sold for residential use.

Liquefied Natural Gas (LNG): LNG is natural gas that has been liquefied through a super-cooling process so it can be easily transported to specialized terminals and regasified and distributed to companies, utilities and industrial consumers across the U.S. by pipeline. Although LNG makes up only a fraction of the United States natural gas imports, there are 11 import terminals operating in the U.S. and over 100 LNG production, transport and storage facilities across the country.

Compressed Natural Gas (CNG): CNG can be used as fuel for natural gas powered vehicles and is stored in special high-pressure containers. There are approximately 150,000 CNG vehicles on the road in the U.S., predominantly in corporate fleets.

Propane: The fuel many Americans in rural areas use to heat and power their homes is also known as **Liquefied Petroleum Gas (LPG)**, and is a by-product of natural gas and crude oil refining processes. It is typically stored in a liquid form and is used by industry to make items such as plastic and nylon. **It is also the second largest clean-burning alternative transportation fuel in use today, fueling nearly 270,000 vehicles in the United States.**

Outer Continental Shelf (OCS): The OCS 1.76 billion acres is an area rich in oil and natural gas resources located up to 200 nautical miles off America’s coastlines. The OCS has been largely off-limits to exploration and production for nearly three decades. In 2008, President Bush and the Congress lifted the longstanding prohibitions; however, before additional leasing can take place, the Department of Interior must approve plans to lease areas for exploration. The government estimates that **the OCS contains 86 billion barrels of oil and 420 tcf of natural gas** – enough to fuel America’s needs for decades. These estimates are conservative since the last surveys were conducted 30 years ago using outdated technology.



Hydraulic Fracturing: Often referred to as “fracking” or hydrofracking, it is the process of pumping a fluid comprised mostly of water and sand under high pressure into rock formations to bring energy resources such as natural gas to the surface. Since the 1940s, fracking has been used to **drill more than 1 million wells** in the U.S. Hydraulic fracturing has been used safely for over 60 years.

Shale: A type of rock found in at least 22 onshore shale basins in more than 20 states. Over the past several years, shale gas production has increased significantly while large new deposits have been located. Some studies conclude that there are **more than 2,247 tcf of recoverable domestic shale gas** – enough to meet America’s needs for nearly 100 years at current consumption rates. Natural gas is released from this very dense rock through the hydraulic fracturing process.

FREQUENTLY ASKED QUESTIONS:

Where is natural gas found? Natural gas is found in many places, including onshore and offshore wells that are comprised of both oil and natural gas. In addition, it is found in unconventional sources such as shale deposits; natural gas trapped in hard rock formations underground (known as **tight gas**); deposits that are found very far below conventional drilling depths (**deep gas**); **coalbed methane**; and **methane hydrates**, an ice-like substance containing natural gas that holds enormous potential. Production from unconventional natural gas resources is expected to meet most of the United States’ natural gas demand by 2030.

If natural gas is such a plentiful, clean energy source, why aren’t we using more of it? In addition to America’s vast untapped offshore energy resources, about 83 percent of America’s onshore resources are under moratoria or severely restricted. In order to take advantage of this plentiful resource, the federal government must make these areas available for production under a predictable regulatory regime.

If Alaska has such vast natural gas resources, why aren’t we able to take advantage of them? Alaska’s natural gas resources are enormous – nearly **250 tcf, enough to support all of the United States natural gas needs at current consumption rates for more than a decade**. However, there is currently no cost-effective infrastructure to move these natural gas resources to market in the lower 48 states. Although there is widespread support for the construction of a pipeline to bring Alaskan natural gas through Canada to the continental U.S., economic and regulatory uncertainty have precluded industry from investing in this capital intensive project, which could cost over **\$40 billion**.

Can natural gas be used to fuel vehicles? Yes. In fact, there are approximately 150,000 natural gas vehicles (NGVs) on the road today. Although this figure is relatively small compared to America’s current fleet of 230 million cars, this number is projected to increase as the number of NGV’s in county, state, and federal government and corporate fleets grow, and fueling stations become more accessible. In addition, heavy truck drivers use the same routes and venues to refuel, and installing natural gas pumps at these sites makes natural gas a viable alternative to diesel fuel.

What other uses are there for natural gas? Natural gas is used not only as a residential fuel source, but also as a raw material to manufacture products that Americans use every day, such as clothing, plastics, sports equipment, pharmaceuticals and medical equipment. Many industrial facilities, like manufacturing plants, use natural gas to create process heat to power their machines and physical. In addition, it can be used as a clean fuel alternative for cars and trucks. Natural gas is also used to generate critical backup power for renewable energy sources such as solar and wind.

What are the economic impacts of increased domestic natural gas production? There is no question that increased production will stimulate our economy by creating well paying jobs. In 2008 alone, **natural gas production supported nearly 3 million jobs and contributed \$385 billion to our nation’s economy**. Putting America’s natural gas supplies to work will not only help fuel our economic recovery, but it will create much needed jobs, increase our energy security, and avoid greenhouse gas emissions.



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