

LNG

And Its Many Uses

LNG, or liquefied natural gas, is simply natural gas converted into a liquid by cooling it to -260° Fahrenheit. This process reduces its volume by a factor of more than 600 – similar to reducing the volume of a beach ball to the volume of a ping-pong ball. This allows natural gas to be transported efficiently by sea. Once it reaches the United States, LNG is unloaded from ships at import terminals where it is stored as a liquid until it is warmed back to natural gas. The natural gas is then sent through pipelines for distribution to businesses and homeowners.

Although the majority of Americans know very little about LNG, it has been a part of the nation's energy mix for almost 100 years.

LNG has been used in this country since 1912, when the first facility to store natural gas in its liquid state was built in West Virginia.

Currently, there are over 100 production, transport and storage facilities across the country. When LNG is returned to its gaseous state, it is used across the residential, commercial and industrial sectors for purposes as diverse as heating, cooking, generating electricity and manufacturing a wide variety of products. LNG is also used as a fuel for heavy-duty and other vehicles.

HOW IS LNG USED TODAY?

A Major U.S. Energy Source

Natural gas supplies our nation with much of its energy. According to the EIA, in 2009 natural gas accounted for:

76% of the residential and commercial sectors' energy needs

Slightly more than half of U.S. homes use natural gas as their main heating fuel. Natural gas is also used to fuel stoves, water heaters, clothes dryers and other household appliances.

Hospitals, schools, office buildings, restaurants, stores and other commercial establishments rely on natural gas for space-heating, water-heating, cooking, air conditioning, dehumidification and on-site power generation.

40% of the industrial sector's energy needs

Natural gas is a dominant fuel for the production of paper, metal, chemicals, petroleum, stone, clay, glass, clothing and food processing industries. Natural gas is also used as an essential raw material for many common products such as paints, fertilizer, plastics, antifreeze, dyes, photographic film and medicines.

18% of electricity generation

In the last several years, most of the new power plants built in the United States have used natural gas because it is a clean-burning fuel.

3% of the transportation sector's energy needs

Over 110,000 transit buses, taxi cabs, package delivery trucks and other vehicles operating in the U.S. are fueled with clean-burning natural gas, according to the Natural Gas Vehicle Association. According to the American Public Transit Association, 27 percent of all new transit bus orders in 2008 were for natural gas. According to the association, about 18 percent of U.S. transit buses run on natural gas. (Source: Natural Gas Vehicle Association)

LNG fueled vehicles

Some heavy duty vehicle fleets are moving to LNG as their fuel of choice. LNG allows more energy to be stored onboard a vehicle in a smaller volume. Using LNG and natural gas to fuel vehicles reduces greenhouse gas emissions by 30-40 percent and also saves vehicle maintenance costs. (Source: www.fueleconomy.gov)

LNG from landfill gas

LNG can also be derived from landfill gas. At a landfill near Livermore, California, landfill gas converted into LNG is being used as fuel to power trash collection vehicles. The plant can produce up to 13,000 gallons of LNG per day from landfill gas, enough fuel for 300 LNG powered collection trucks across 20 California communities. This technology not only turns waste into a renewable energy source, but it also benefits the environment due to the significant reduction in fuel emissions produced by the garbage truck fleet. (Source: <http://EarthandIndustry.com>: Article: Developing Clean Fuels from Landfill Gas, Wes Muir, 11/23/10)