

JUST THE FACTS: Spotlight Edition

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The Journey from Wellhead to Burner Tip

The tale of natural gas is one of ancient geological processes, advanced technology and continuous research by trained personnel. Its journey from deep underground to the flames of our stovetops and furnaces an involved process of science, engineering, and logistics, and one that is constantly improving to become safer and more efficient.



1. The Geology: Natural gas starts in various rock foundations thousands of feet below ground, where organic materials are subjected to millions of years of heat and pressure. The Marcellus and Utica shales in Ohio, Pennsylvania and West Virginia are one of many regions in the U.S. that include significant reserves of this form of energy.



3. To The Transmission Lines

Once processed, natural gas continues on its way through pipelines. The U.S. boasts a sprawling network of over 305,000 miles of gathering and transmission lines – a distance greater than from the Earth to the Moon.



2. At The Wellhead

Extraction starts at the wellhead, where gas first emerges and undergoes initial processing to separate valuable byproducts like natural gas liquids (NGLs), which include ethane, propane, and butane and other valuable hydrocarbons.



4. Cryogenic Processing

Some types of natural gas, called "wet gas" that includes NGLs, undergoes a carefully monitored cryogenic process. By cooling it to a -120°F, methane is efficiently separated from the NGLs. Those hydrocarbons are further processed into their specific elements at a second facility, and the methane continues its way to end users.



5. Compression Stations

Natural gas, during the transportation process, needs to be compressed and pushed along the way. Compressor stations, placed every 40-100 miles, ensure that gas remains pressurized and maintains a consistent flow.



6. Storage

The natural gas system in the U.S. includes NUMBER HERE of underground storage fields. During periods of low demand, gas is stored in these geological formations, most often depleted oil and gas reservoirs. Storage fields can then provide rapid access to needed supply when demand surges.



7. Local Distribution

Local distribution companies play a pivotal role before the gas enters our homes. These companies reduce the pressure of the gas to safe, usable levels. While gas in interstate pipelines can be pressurized up to a 1,500 pounds per square inch (psi), it is steadily reduced in pressure to as little as ¹/₄ psi at the customer's gas meter.



8. Ensuring Safety

An impressive array of state and federal agencies, including the Federal Energy Regulatory Commission (FERC) to the U.S. Department of Transportation's Office of Pipeline Safety at the federal level and Pennsylvania's Department of Environmental Protection and Public Utility Commission, oversee every step of this process, ensuring the safety of the system and the protection of the environment.

In Conclusion:

The saga of natural gas is a compelling blend of nature's prowess and human ingenuity. It brings energy resources found in ancient geological formations to residential, commercial and industrial used through the sophistication of modern science and engineering. And, it is a process that aims to keep improving at every step of the way.



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