

## Natural gas junior

Natural gas is a fossil fuel, just like oil and coal. It is composed of a mixture of hydrocarbons, mainly methane, and other gaseous substances such as carbon dioxide, nitrogen, hydrogen sulphide and, in some cases, helium. If methane is the primary component, the mixture is called dry, while when hydrocarbons like propane and butane are present, it is called wet. Natural gas is extracted from underground deposits and before being used it is treated in order to remove carbon dioxide and nitrogen (which make the gas less flammable) and hydrogen sulphide which is a toxic gas. What remains is primarily methane: a gas which is lighter than air, colourless, odourless and non-toxic.

Natural gas, like oil, has been known since ancient times. In a Chinese manuscript dating back to 347 B.C. there is the description of a strange gas that could be used for illumination. About 200 years ago, Alessandro Volta "rediscovered" the potential of natural gas as an energy resource, when he observed that the small gas bubbles that emerged from the muddy depths of the Lago Maggiore would catch fire when a burning match was brought close to them. A few decades later many American and European cities were illuminated thanks to gas-powered street lamps. Today methane is used to run gas cookers, domestic heating systems and as a fuel for auto-traction. It also is used in the metal and ceramic industry.

Often, but not always, natural gas can be extracted from an oilfield. Like oil, in fact, natural gas is the result of the transformation that the organic matter deposited on sea or lake floors has undergone over a long period of time.

"Associated gas" refers to natural gas found dissolved in oil or in the layer covering an oilfield while "non-associated gas" is found in reservoirs composed almost exclusively of natural gas. Once the methane is extracted, it is transported as a gas through pipelines or as a liquid (LNG or Liquefied Natural Gas) in LNG tankers. Before being introduced into the distribution network, methane is mixed with a strong smelling odorant named "mercaptan". In this way, even a minor gas leak can be immediately detected. In fact, in enclosed spaces (such as a room) methane, on mixing with air and in the presence of a trigger (a flame or a spark caused by switching on a light), catches fire causing dangerous explosions.