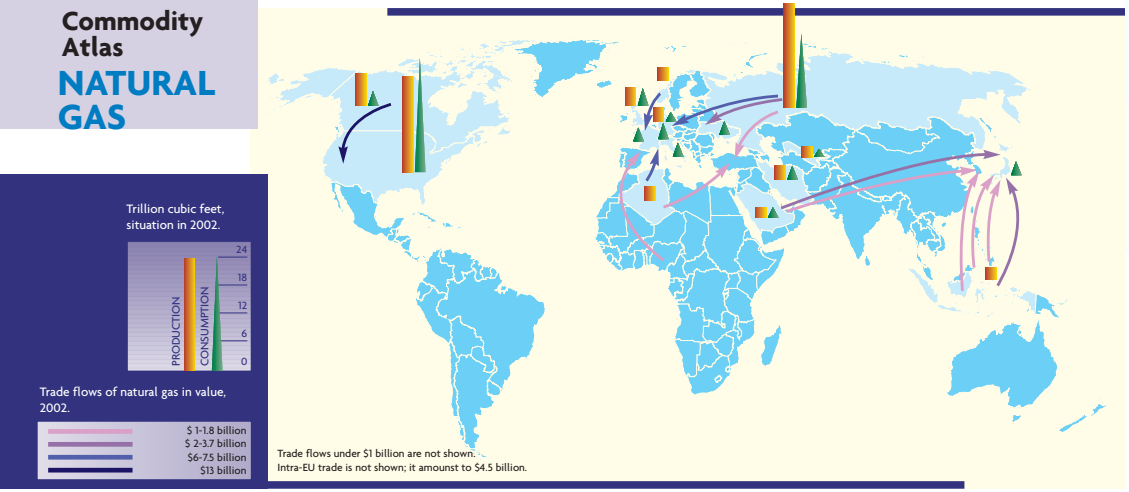


Production, consumption and trade of natural gas.

The United Nations SITC (revision 2) defines natural gas as gas, natural and manufactured SITC code 341.

While there are "dedicated" gas fields, most natural gas is a by-product of crude oil production. Natural gas consists mostly of methane and is colourless and, in its pure form, odourless. For many years, natural gas was discarded as worthless, and even now much of it is still burned in giant flares. But its importance as a fuel of choice is increasing, particularly because it burdens the environment less than other fuels. Natural gas already provides one fifth of all energy used in the United States, and half of home energy consumption. Its use world-wide is growing fast.

Gas flaring in Alaska.

Natural gas: a major source of energy

Natural gas reserves are spread fairly evenly around the world, but, because exploitation is expensive, many countries are unable to make effective use of their reserves. However, the situation is changing. Natural gas is the world's second major energy source, as it has overtaken coal recently. In 1999–2000, international trade in natural gas was $67 billion, making it the second-ranking commodity traded internationally (after crude oil and oil products).

Transporting natural gas

Around a quarter of the gas that is produced (and not flared off) worldwide enters international trade. Four fifths is compressed and transported through pipelines (including the major pipeline from Russia to Europe), and the remainder is carried in the form of liquefied natural gas on gas tankers. Liquefied natural gas needs to be cooled to -160°C (-259°F) at atmospheric pressure and stored in insulated containers before it can be stored or transported, making both the costs of ships and the variable costs of transport very high.

The major natural gas traders are the Russian state company Gazprom, which has a monopoly on Russia's gas exports, and western oil companies, with Shell being the most involved.

Transporting gas to consumer markets can be expensive. For transport by ship, the gas needs to be cooled until it is liquefied, and plants for doing this can cost billions of dollars. Long-distance pipelines can also cost billions. Using the gas to produce electricity for exports is an alternative, but again, long-distance grids are expensive. Financing such projects can thus be difficult and time-consuming.

Commodity Atlas
NATURAL GAS

Flaring

In 1996, gas flaring accounted for some 20% of worldwide carbon dioxide emissions. From an environmental perspective, using gas that would be otherwise flared has two important benefits: it directly reduces such emissions, and it produces liquefied natural gas, which can replace more polluting coal or crude oil in electricity generation. Nowadays, the ability to reduce carbon dioxide production is worth a great deal of money to electricity plants.

Not just for energy

Much natural gas consumption in Asia goes to producing urea fertilizer; many countries in the region have major natural-gas-based urea factories. Natural gas is also used for the production of methanol, an input for the chemical industry. A by-product is liquefied petroleum gas, which is often bottled for the domestic consumer energy market.

The development dimension

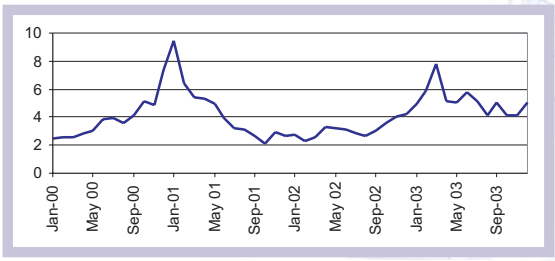
In order to continue their economic development, developing countries will need to greatly increase their electricity-generating capacity. They will also need to increase fertilizer consumption in their efforts to feed their rapidly growing populations. Natural gas can meet both needs, with much less negative impact on the environment than alternative substances would have.

Unfortunately, while the gas itself is often almost free, gas-to-power plants and fertilizer plants require an investment of more than $300 million, which is beyond the reach of most developing countries. Private-sector financiers have difficulty funding the plants because most revenue will be created in the country, in local currency. More intensive partnerships between development finance agencies and the private sector are needed for developing countries to realize their potential in this area.

Prices

Natural gas prices largely follow crude oil prices: in effect, in long-term offtake contracts with European and Asian buyers, the natural gas price is set as a function of crude prices. Only in the United States is pricing a function of spot prices in a major delivery point, the Henry Hub. Still, such prices primarily reflect local developments, and in particular, the severity of winter – hence the price peaks in January 2001 and February 2003.

Price of US natural gas imports
US$/million cubic feet



Source: US Energy Information Administration.

To learn more

UNCTAD/INFOCOMM, Market Information in the Commodities Area
www.unctad.org/infocomm

International Gas Union
www.igu.org

International Energy Agency
www.iea.org