PROGRAM facts

U.S. DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY

Strategic Center
for Natural Gas & Oil

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LIQUEFIED NATURAL GAS (LNG) RESEARCH AND DEVELOPMENT

Natural Gas demand is expected to increase by 30% in the next decades, rising from 22 Tcf to 31 Tcf over the time period between 2002 to 2025[1]. With the outlook for limited production resources from the U.S. lower-48 and non-Arctic Canada, new sources of supply will be required. To help meet this demand, LNG imports will need to make up 14-17% of the natural gas supply by 2025, with an increase from 0.7 Bcfd to 12.5 Bcfd. This increase in LNG imports, however, faces major barriers.

The goal of the Liquefied Natural Gas Program is to maintain and enhance the transportation, storage, and safety of the nation's liquefied natural gas system in order to meet the growing demand for natural gas. Based on a collaborative approach to identify priorities and opportunities for research and development (R&D) funding, projects supported by DOE are developing technologies to ensure the availability of clean, affordable, energy for our homes, businesses, and industries.

The Liquefied Natural Gas Program supports the development and deployment of a steady stream of products and technologies that will progressively expand the viability of LNG imports to ensure that sufficient quantities of safe, reliable, and affordable natural gas are available to American consumers.

The approach of the program is to work with industry, academia, non-profit trade organizations, other government agencies, and national labs to:

- Develop consistent local, state, regional and national outreach plans and communication tools.
- Develop science-based models to support risk analyses and new siting and security regulations.
- Develop protocols and standardized testing programs leading to national gas quality standards.
- Assess impacts of large increases in LNG imports on the existing natural gas infrastructure and on market functioning.
- Develop new technologies and new applications of existing technologies to improve safety and maximize supply.

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[1] EIA, 2004. Annual Energy Outlook: 2004.

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Why Do We Need Liquefied Natural Gas Research?

The North American resource base has met the natural gas demands of Canada, Mexico, and the United States to date. However, this is not expected to continue and increased imports of LNG will be required to help meet the growing demand. Advances in liquefaction and transportation technologies have driven down the unit cost of LNG by 30% over the past decade and LNG is now viewed as cost competitive with domestic supplies. Therefore, to meet future demand, it is projected that LNG imports will grow to become 14-17% of the total U.S. natural gas supply by 2025. This will require the construction of several new regasification terminals and expansions of three of the four existing terminals[2]. Research and development will be necessary to achieve this expectation.

Potential Large-Scale Sources of Natural Gas Supply

[2] National Petroleum Council. 2003. Balancing Natural Gas Policy – Fueling Demands of a Growing Economy. Volume I.