PROGRAM facts

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

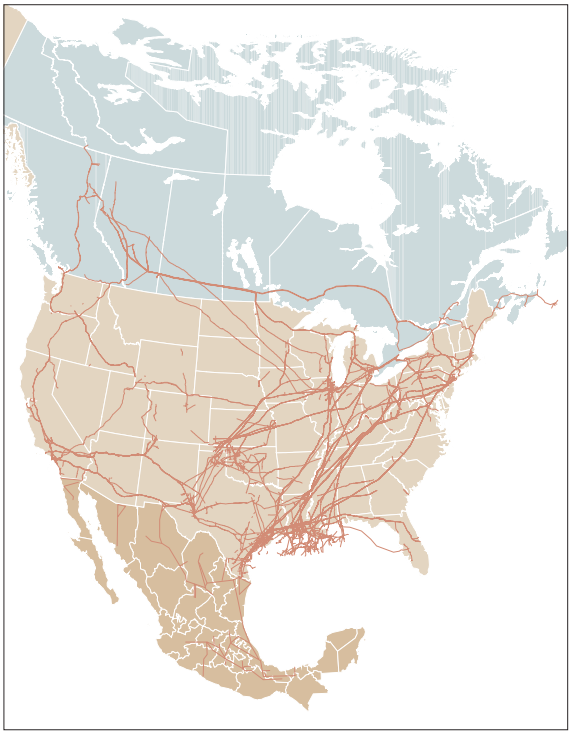
Strategic Center for Natural Gas & Oil

01/2005

NATURAL GAS DELIVERY RELIABILITY

The U.S. Interstate natural gas transmission and distribution network, at the end of 2002, operated about 1,471,253 miles of pipeline[1] and had the capability to deliver more than 133 billion cubic feet (Bcf) of gas per day.[2] This includes more than 3,500 miles of pipeline that were added to the national pipeline network during 2002 at an estimated cost of $4.4 billion.[3] It is anticipated that the United States will have to invest $8 billion per year in new and expanded transmission and distribution infrastructure through 2025 to handle new productive capacity and to meet increased demand for natural gas.[2] At the same time the pipeline industry also faces the immense challenge of ensuring the integrity and reliability of its aging infrastructure. As the nation increasingly depends on natural gas to meet its year-round energy needs, it is essential that the infrastructure that connects demand with supply be expanded, improved, and maintained.

The goal of the Natural Gas Delivery Reliability Program is to maintain and enhance the integrity, operational reliability, and efficiency of the nation's natural gas infrastructure. 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.



North American Pipeline Grid (24" Diameter and Greater)

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The Delivery Reliability Program supports the development and deployment of a steady stream of products and technologies that will progressively expand the nation's natural gas transmission and distribution system while improving the efficiency of the existing system. Program areas include Inspection Technologies, Remote Sensing, Operational Technologies, and Materials Development.

Specific objectives are:

- Ensure integrity by developing advanced technology to prevent damage or service disruption by quickly detecting and diagnosing defects, leaks and failures.
- Focus the program on public benefit Research and Development that results in readily apparent deliverability advantages for consumers.
- Maintain operational reliability by increasing pipeline capacity and enhancing the flexibility and responsiveness of the network to react to changes in long term demand.
- Improve infrastructure efficiency using new analytical tools.
- Protect the environment by fostering new technologies that reduce or eliminate fugitive emissions, and minimize environmental impacts resulting from construction activities.
- Increase efficiency of construction, operation and maintenance practices.
- Develop and demonstrate advanced security concepts that enhance the nation's energy assurance.

Achieving these goals will result in a viable technology foundation for our nation's future natural gas transportation and delivery network. To enhance technology development and operations improvements, the Department of Energy will collaborate with the private sector in implementing best practices and utilizing industry know-how.

Potential program benefits include:

- Increased integrity, operational reliability, safety and security of the of the nation's natural gas infrastructure.
- Provide industry with new capabilities to meet the predicted growth in demand.
- Reduced greenhouse gas emissions resulting from pipeline and equipment leakage.
- Minimize environmental impact by providing new tools for construction and rehabilitation.
- Enhanced U.S. economic competitiveness, technology leadership and energy security.

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[1] DOT Office of Pipeline Safety. 2004. Annual Pipeline Mileage Totals. http://ops.dot.gov/stats/GTANNUAL2.HTM

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

[3] EIA. May 2003. Expansion and Change on the U.S. Natural Gas Pipeline Network – 2002.

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STRATEGIC CENTER FOR NATURAL GAS & OIL WEBSITE

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