New Terminals: Highlights

In addition to important expansions at existing LNG receiving terminals in Lake Charles, Louisiana, Cove Point, Maryland and Elba Island, Georgia, new world class terminals have been built in Canada, the United States and Mexico. Examples are the following.

**Canaport™ LNG (St. John, New Brunswick, Canada)**

Canaport™ LNG is the first land-based LNG receiving and re-gas facility built on the East Coast of North America. In over 20 years and the first ever built in North America, Canaport LNG can supply natural gas to New Brunswick for the first time per day (BCHP). Canaport LNG's facility has a train to re-gas and is able to receive the largest LNG tankers currently designed. Repsol is the majority owner, controls 100% of Canaport LNG's capacity and capacity on the TransCanada Pipeline and thus is the dominant supplier of LNG to the Northeastern U.S. Repsol signed a multi-year supply agreement with Uragas. [http://www.canaportlng.com/](http://www.canaportlng.com/)

**Neptune LNG (offshore Gloucester, Massachusetts)**

Neptune LNG is an offshore LNG receiving station located several miles off the coast of Massachusetts. Neptune can supply about 40 percent of the state's demand, providing natural gas to other New England states as well. Neptune entered commercial operation in 2010. This ship-based transport and regasification technology provides critical supplemental capacity to the Everett terminal. [http://www.suezenergyna.com/ourcompanies/lngna-neptune.shtml](http://www.suezenergyna.com/ourcompanies/lngna-neptune.shtml)

**Cameron LNG (Cameron, Louisiana)**

Cameron LNG has liquefied natural gas (LNG) sendout capacity of 3.0 BCFD. Commercial operations began in July 2008. Cameron supplies not only local demand but also serves different regions of the U.S. See [http://www.ameryspring.com/Pages/Terminals/Cameron/default.htm](http://www.ameryspring.com/Pages/Terminals/Cameron/default.htm).

**Freeport LNG (Quintana Island, Texas)**

Freeport LNG Development, L.P. owns and operates the LNG regasification terminal located near Freeport, Texas. The Freeport terminal location provides favorable economic, geographic and infrastructure characteristics. Positioned between two large natural gas trading hubs and an abundant industrial consumer base. Freeport LNG Development, L.P. owns and operates the LNG regasification terminal located near Freeport, Texas. The Freeport terminal location provides favorable economic, geographic and infrastructure characteristics. Positioned between two large natural gas trading hubs and an abundant industrial consumer base. The Freeport LNG terminal can process approximately 2 BCFD and began commercial operations in 2010. Freeport can transport and regasify LNG from Cameron and Cameron LNG. [http://www.freeportlng.com/index.htm](http://www.freeportlng.com/index.htm)

**Golden Pass (Sabine Pass, Texas)**

The Golden Pass LNG terminal can receive LNG from around the world to provide a reliable, long-term and competitive source of energy to the local area. Golden Pass LNG is a joint venture between Cheniere Energy, Inc. and Cameron LNG. Cheniere Energy, Inc. has developed and commissioned near Sabine Pass, Texas, with an associated pipeline connecting to the existing U.S. pipeline infrastructure. Louisiana Pass has the capacity to process and deliver approximately 2 BCFD and began commercial operations in 2010. Golden Pass is part of a global LNG supply chain linked to Qatar LNG production. [http://www.goldenpasslng.com/index.htm](http://www.goldenpasslng.com/index.htm)

**The Sabine Pass LNG Terminal (Cameron Parish, Louisiana)**

The Sabine Pass LNG terminal is located in the Gulf of Mexico 3.5 miles from the openwater Sabine Pass has two berths capable of receiving the largest D-class (3,000 ft) vessels. Its nominal capacity was expanded to in mid-2006 by 1.4 BCFD to a total of 4 BCFD. The terminal has 180,000 cubic meter LNG storage tanks, two of which were added during the expansion, bringing total LNG storage capacity to 10.0 BCF. Sabine Pass is one of the first new terminals to meet in the U.S. in over 30 years and is the largest liquefaction terminal in North America. The entire capacity of Sabine Pass has been contracted under three 20-year terminal use agreements. [http://www.golarlng.com/](http://www.golarlng.com/)

**Altamira and Costa Azul, Mexico**

In August 2006 the Altamira LNG terminal in Mexico near Tampico, on Mexico's Gulf Coast received the first cargo of LNG and the plant was commissioned. The terminal de Altamira has 1.86 BCF per year and is connected to Mexico's existing pipeline systems. [http://www.shell.com.mx/home/content/mex/products_services/gas/](http://www.shell.com.mx/home/content/mex/products_services/gas/)

**Cove Point, Maryland**

Cove Point is the newest regasification terminal on the East Coast of North America. Located between Baltimore and Annapolis in the Chesapeake Bay, the terminal is capable of processing 1.0 BCFD of natural gas with room for expansion. [http://www.energy.gov/gas/dumps/index.html](http://www.energy.gov/gas/dumps/index.html)
INTRODUCTION TO LNG

LNG is not new. For more than 4 decades, the LNG industry has established a noteworthy safety record. The highly regulated U.S. LNG industry has a track record of more than 4 decades of safe operations with its 113 active LNG facilities, including 1 export terminal and 5 land-based import terminals. The delivery system, and more than 100 sites owned and operated by local utilities to meet peak natural gas demands. The highly regulated U.S. LNG industry has a track record of more than 4 decades of safe operations with its 113 active LNG facilities, including 1 export terminal and 5 land-based import terminals. The delivery system, and more than 100 sites owned and operated by local utilities to meet peak natural gas demands.

New terminals are subject to a rigorous permitting process that addresses engineering design, safety and security of terminals and shipping, and potential environmental and socioeconomic impacts. More than a dozen Federal and State agencies are involved in these reviews, with the Federal Energy Regulatory Commission overseeing permitting for onshore projects and the U.S. Coast Guard and the U.S. Maritime Administration handling similar duties for offshore projects.

The delivery of LNG requires significant investments in the LNG “value chain” operations that are highly linked and interdependent.

LNG SAFETY AND SECURITY

The LNG industry owes its 40-year record of safe operations to a thorough understanding of technical and operational processes and procedures by the companies involved. Risks and potential hazards are well understood, and safeguards and mitigation measures are firmly entrenched. Every element of the LNG industry adheres to strict U.S. and global regulatory and industry standards and codes. Safety in the LNG industry is ensured by four elements that provide multiple layers of protection for the safety both of LNG workers and communities that surround LNG facilities:

- Primary containment using steel alloys and other materials,
- Secondary containment including impoundments around facilities,
- Safety systems such as emergency fire and gas detection, and
- Security distances to protect people and property.

LNG has been safely transported in double-hulled LNG ships that have logged more than 60,000 voyages, covering more than 130 million miles, without a major incident involving release of LNG either in port or at sea.

“A conclusion of this report is that North America needs new natural gas supplies from a diverse array of sources, and that LNG represents a critical component of future natural gas supply to the United States.”

THE ROLE OF LNG IN NORTH AMERICAN NATURAL GAS SUPPLY AND DEMAND

North America has abundant natural gas resources and capacity to receive and store LNG from diverse sources and suppliers. New, world-class receiving terminals and expansions to existing terminals have been built. Investments in infrastructure that can handle larger quantities of imported LNG enables North American suppliers and customers to reduce any “gaps” in deliveries of natural gas, increasing reliability. Global natural gas and LNG capacity are expanding from diverse sources and new, more flexible mechanisms for buying, selling and delivering LNG are being developed.

“Constant improvement of LNG safety, environmental, and security infrastructure to the industry and regulations is focused on protecting the public, LNG assets, and workers.”

www.beg.utexas.edu/energyecon/lng