LNG - fueling the future

ExxonMobil

Taking on the world's toughest energy challenges.™

The increasing importance of LNG

As economies grow, and as billions around the world strive to attain an improved standard of living for themselves and their children, the demand for energy rises. In fact, by 2040, global energy demand is expected to be about 35 percent higher than it was in 2010.

Natural gas is projected to be the fastest-growing major fuel source through 2040 because it is cleaner-burning, reliable and abundant.

Additionally, advances in technology have made it economical to ship natural gas all over the world, making it a truly global resource.

By transforming gas from its natural state into liquefied natural gas (LNG), it can be delivered via tanker from distant production areas to markets that need it. Given its flexibility, environmental benefits and large resource base, LNG is a natural choice to help meet the world's growing energy needs.

An industry leader for over 40 years

ExxonMobil has been a key leader in the LNG business, with over 40 years of LNG project development experience.

Starting with our involvement in one of the world's first LNG facilities – PT Arun in Indonesia – we have worked with our valued partners to transform the LNG market into a more efficient, global business.

Our experience spans the entire LNG value chain, including upstream development, pipelines, liquefaction plants, shipping, and regasification terminals. Our ability to successfully link these complex elements distinguishes us from our competitors and provides a reliable gas supply to buyers and end-users.

We can also market regasified LNG volumes across the globe by utilizing our extensive network of gas marketing organizations.

LNG value chain

LNG facilities usually require the execution of several concurrent and interconnected projects, as well as an international commercial structure, to form the value chain that delivers gas to the customer. ExxonMobil has demonstrated expertise in all aspects of the LNG value chain. Successful implementation requires unwavering focus on:

strong partnerships | long-term vision | technological innovation
extraordinary investment discipline | robust commercial and fiscal structures
safety and environmental leadership
project execution and operational excellence | comprehensive market knowledge

Gas production

- Natural gas is produced from subsurface reservoirs both onshore and offshore.
- In 2012, ExxonMobil produced more than 12 billion cubic feet per day of natural gas in 16 countries.

Gas liquefaction

- LNG trains condense natural gas into a liquid at atmospheric pressure by cooling it to -260° F. Natural gas in liquefied form takes up about 1/600th less space than in gaseous form.
- ExxonMobil, together with its partners, had an LNG production capacity of approximately 65 million tonnes per annum (MTA) in 2012.

LNG shipping

- LNG is transported at a constant temperature and pressure by dedicated carriers, designed and built to meet the most rigorous safety standards.
- Together with its joint venture partners, ExxonMobil delivered LNG to 20 countries around the world in 2012.

Regasification

- Regasification terminals warm the LNG to a temperature at which it reverts to its gaseous state. It then can enter the national gas transmission system of the importing country.
- ExxonMobil has interests or leased capacity in five regasification terminals in Europe, Asia and the United States.

ExxonMobil's LNG joint ventures

Qatargas and RasGas

- Features the largest production trains in the world, with a capacity of 7.8 MTA
- Located about 50 miles northeast of Doha in Ras Laffan Industrial City
- Production from these ventures is more than 61 MTA
- Helping to develop the world's largest non-associated gas field, with reserves in excess of 900 trillion cubic feet
- ExxonMobil has interests in 12 trains through participation in two Qatargas joint ventures and three RasGas joint ventures

Adriatic LNG Terminal

- World's first offshore gravity-based structure LNG storage and regasification terminal
- Located 10 miles off the Vento coastline, North Adriatic Sea, Italy
- Has 800 million cubic feet per day of regasification capacity
- Supplies approximately 10 percent of Italy's natural gas consumption
- Owned by affiliates of Qatar Petroleum, ExxonMobil and Edison

South Hook LNG Terminal

- Europe's largest LNG terminal
- Located at Milford Haven in South West Wales (U.K.)
- Has 2.1 billion cubic feet per day of regasification capacity
- Provides a key gas entry point for western Europe via the national grid gas system
- Owned by affiliates of Qatar Petroleum, ExxonMobil and Total

Golden Pass LNG Terminal

- One of the world's largest LNG terminals
- Located near Sabine Pass, Texas
- Has 2 billion cubic feet per day of regasification capacity
- Owned by affiliates of Qatar Petroleum, ExxonMobil and ConocoPhillips

and projects around the world

PNG LNG Project

- Features liquefaction and storage facilities with 6.9 MTA capacity
- Located in the Southern Highlands and Western Province, Papua New Guinea (PNG)
- Expected to produce 9 trillion cubic feet of natural gas over the life of the project
- First LNG deliveries scheduled to begin in 2014
- Owned by affiliates of ExxonMobil, Oil Search Limited, National Petroleum Company of PNG, Santos, JX Nippon Oil and Gas Exploration, Mineral Resources Development Company and Petromin PNG Holdings Limited

Gorgon Jansz LNG Project

- Largest single resource project in Australia
- Located about 81 miles off the northwest coast of western Australia
- Features liquefaction facilities with 15 MTA capacity
- Contains an estimated total recoverable resource of 40 trillion cubic feet of natural gas
- Owned by affiliates of Chevron, ExxonMobil, Shell, Osaka Gas, Tokyo Gas and Chubu Electric Power

PT Arun LNG Plant

- One of the world's first LNG facilities
- Located in the Indonesian province of Aceh
- Has supplied more than 4,000 cargoes since 1978
- Features liquefaction facilities with 1.5 MTA capacity
- Operated by a company owned by affiliates of Pertamina, ExxonMobil and Japan Indonesia LNG Company

Shimizu LNG Terminal

- Features three in-ground tanks with storage capacity of 337 thousand cubic meters
- Located on a former TonenGeneral Sekiyu refinery site in Shizuoka, between Tokyo and Nagoya, Japan
- Has 250 million cubic feet per day of regasification capacity
- Began operations in 1996; the third tank expansion was completed in 2010
- Owned by Shizuoka Gas and TonenGeneral Sekiyu (of which ExxonMobil is a principal shareholder)

Advancing LNG technology

Technology has allowed us to unlock new supplies of natural gas once considered “uneconomic” or “inaccessible,” leading to a rapid transformation of the global energy landscape.

This same pattern of innovation and investment can be seen in the LNG business, where new technologies have expanded and economized every link in the value chain.

With our partner Qatar Petroleum, we have increased the size of liquefaction trains to nearly four times that of previous trains.

We also helped develop LNG tankers that are capable of carrying up to 80 percent more natural gas than a conventional LNG ship. The largest of these ships, the Q-Max, has more than 265,000 cubic meters of capacity.

In addition to the size advantage, the ships also feature several new enhancements. These include onboard reliquefaction units, slow-speed diesel engines, twin propellers and rudders, and the largest shipboard LNG tanks ever built.

Such advances have underpinned the creation of a global LNG market. As a proven industry leader and innovator, ExxonMobil is well-positioned to help fuel the future with LNG.

www.exxonmobil.com/LNG

ExxonMobil

5959 Las Colinas Boulevard
Irving, Texas 75039-2298