



Ability of the U.S. to Compete in the Global LNG Marketplace

An Assessment of Challenges and Opportunities

The American Gas Foundation (AGF) commissioned the firm of Benjamin Schlesinger and Associates, Inc. (teamed with Poten & Partners and Altos Management Partners) to analyze the adequacy of the world's liquefied natural gas (LNG) producing capacity to meet the needs of the United States (U.S.) natural gas industry and to assess the current and likely future competitiveness of the U.S. in the global marketplace over the next decade.

The overall goals of this study were to:

- 1) Provide an analysis of world LNG availability, import levels, regional demand and prices;
- 2) Evaluate the adequacy of U.S. infrastructure (pipelines, distribution, storage) to accommodate increased LNG imports;
- 3) Project future market mechanisms for the global LNG industry – particularly long-term versus spot contracts and oil-indexation versus domestic gas prices – and identify what the U.S. will need to do to obtain their needed LNG supplies;
- 4) Assess state and federal regulatory developments that have stimulated LNG imports, as well as measures that may be needed in the future to enable the U.S. natural gas industry to participate in the emerging global LNG markets; and
- 5) Analyze geopolitical risks that may impinge upon LNG supplies and offer mitigation strategies for the U.S. natural gas industry.

Major Findings

- U.S. LNG imports in late 2007 and through mid-year 2008 have been less than 50% of year- earlier periods as a result of stronger year-on-year demand in Europe, particularly Spain, and cargo diversions from the Atlantic Basin to Asia. These diversions, many at exceptionally high prices, have been needed to offset supply shortfalls caused by startup delays in Pacific basin supply projects, production declines in Indonesia, and increased demand in Japan due to the shutdown of a major nuclear facility following the July 2007 earthquake.
- In the short term, until worldwide LNG supplies increase more substantially and U.S. demand requirements increase as projected, the study shows relatively little LNG headed toward this country. The high, albeit volatile, level of U.S. natural gas prices makes shale and other domestic unconventional gas supplies economic. The development of these unconventional supplies will enable the U.S. to meet demand as LNG goes to other markets.

- In the medium and longer term, far more LNG will be available to meet U.S. buyers' needs. Nineteen gas liquefaction trains at twelve LNG complexes on four continents are now in or nearing their construction stages. Together, these will increase by more than 50 percent the availability of LNG in world markets in the next decade. Sellers in 8-12 countries will be providing LNG to the U.S. market by 2016, with the largest two suppliers likely to be Trinidad and Nigeria.
- The U.S. will need increased LNG imports to supply growing gas demand for electricity generation in new U.S. power plants and to help the nation comply with climate change strategies. LNG importation to the U.S. is expected to surpass that of Europe within the next decade, although the Asian market for LNG will remain the world's largest in the meantime, especially as China and India increase their LNG imports.
- Long-term sales and purchase agreements are the norm in the global LNG business to enable the industry to raise the significant amounts of construction capital it requires. Therefore, it may be necessary for buyers, including importers of LNG into the U.S., to maintain a substantial portfolio of long-term contracts to ensure predictable LNG supply levels. Reliance on spot LNG cannot ensure reliable supplies for U.S. utilities for the foreseeable future because 'spot' LNG typically consists of cargoes that have been temporarily diverted from their primary destinations under existing long-term contracts.
- Oil-indexed gas prices will continue to be the norm in Asia and Europe. However, if crude oil prices remain very high, e.g., around \$100 per barrel or more, continuation of this practice could reduce worldwide gas demand. This, in turn, could lead to a situation where spot and short-term LNG prices could clear far enough below parity with high oil prices to form an independent gas market apart from oil, as natural gas routinely does in the U.S. commodity markets.
- In summary, as the world's LNG supplies grow and global energy markets stabilize, the U.S. will find that it is more than able to compete in global LNG markets. Even though others will sometimes pay higher prices, the U.S. will offer sustained prices sufficient to support LNG projects from around the world. Additionally, the U.S. will be a desirable and dependable destination for LNG because of the sheer size and depth of its gas markets, its world-leading underground gas storage infrastructure, and the innate flexibility of its commodity gas trade.