

BULLETIN

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The United States and the International LNG Markets

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The United States is witnessing a debate about the prospects of launching large-scale exports of liquefied natural gas (LNG). The debate is fuelled by forecasts of the gradual phase-out of natural gas imports, the competitiveness of North American gas compared with other regional markets, and growing demand from leading importing states. For the U.S. to become a major LNG-exporting country, there are some bureaucratic and infrastructure hurdles to be cleared, along with establishing the long-term impact of exports for the U.S. economy and ensuring competitiveness vis-à-vis other producers.

Determinants. The United States is the world's largest natural gas consumer (about 680 billion cubic metres, or 25% of worldwide consumption) and producer (19%). The American energy mix depends on gas for 25% of its needs; only oil takes a larger share of the U.S. energy demand (37%), in particular because of the transportation sector, which is heavily dependent on oil (94%). Transport uses natural gas only to a limited extent (2%), but it still requires 20 billion cubic metres of annual supply. More than 30% of the natural gas consumed in the U.S. is used by households, 76% of which depend on it for heating needs. Natural gas is the third-largest (19%) source of electric power generation after coal (48%) and nuclear power (21%), and has a wide range of applications for U.S. industry (about 225 billion cubic metres of annual consumption).

Domestic supply satisfies 85% of the overall demand for natural gas. Imports are in the range of 100 billion cubic metres per year, with 90% delivered via pipelines from Canada. LNG imports are thus insignificant in relative terms since they constitute only 1.5% of total consumption, though they amount in real terms to 11 billion cubic metres annually. In recent years, both imports (LNG and network gas) and its share of total consumption have declined. In 2007, which saw record-high imports of 130 billion cubic metres, LNG accounted for 20% of demand.

Imports have dropped for three reasons. First, in light of the economic slowdown, U.S. demand for natural gas has not been growing at the previously expected pace. Between 2007 and 2009, U.S. consumption decreased, but recovered in 2010 to the pre-economic crisis level. Second, the trend of declining domestic production was reversed, mainly because unconventional deposits were tapped (growing by 48% in 2007–2010). From 2000 to 2005, production had fallen by 6%, or 33 billion cubic metres annually, whereas 2006–2011 saw a 24% increase, up to a total volume of 644 billion cubic metres. As a result, the United States now runs a surplus of natural gas supply, as indicated by the high utilisation rate of natural gas storage. The U.S. Department of Energy (DoE) expects that by 2035, shale gas alone will provide almost half of the total forecasted domestic production to somewhere in the range of 380 billion cubic metres per year. Third, despite launching new import terminals and increasing the availability of LNG in the U.S., imported gas is more expensive than domestic production. The fee for 1,000 cubic metres of gas collected by drilling companies is at its lowest point in the last decade, and four times lower than before the outbreak of the economic crisis. LNG imports have precious little chance to compete with domestic production because operators of the import facilities need to ensure a return on investments made when U.S. production was falling and demand was on the rise. All in all, DoE expects the United States to be independent in its natural gas supply within two decades.

It is against this backdrop that a debate about launching LNG exports from the U.S. is gaining momentum. Currently LNG accounts for about 30% of all natural gas traded worldwide, but its share is growing quickly. Short-term (spot) prices on the Asian market are significantly higher than in North

America. Despite the expansion of the European spot market in recent years as a result of new re-gasification plants being brought on-line and the re-direction of additional LNG shipments to European customers, nearly 70% of gas imports to Europe are made based on long-term contracts and oil-indexed prices. In the short to medium term (2014–2015), new opportunities will arise to offer LNG to consumers in the Far East, following the expansion of re-gasification capacities and taking into account the constantly high demand for gas. Following the accident in Fukushima, Japan—already the world's largest LNG importer—temporarily increased imports by 20%. China intends to triple its LNG imports by 2015, and South Korea has plans to expand its imports as well, which will keep it as the world's second-largest importer. Among those advocating an "escape" from a saturated North American market are drilling companies, for which the profitability of continuing their activities is dictated by the possibility of acquiring so-called natural gas condensates, rather than gas itself, and also local authorities from regions with large production volumes. Depressed prices and little capacity to store gas force the drillers to resort to either flaring or venting gas, thus harming the environment.

Challenges. The key obstacle to introducing U.S. LNG to the world markets has to do with insufficient liquefaction capacity. Operators of LNG import terminals are attempting to acquire permission and capabilities to export. Interest in new export terminals is also on the rise. U.S. regulators are currently reviewing projects that could result in a liquefaction capacity of about 85 billion cubic metres per year. Launching all of the planned facilities—no sooner than 2015–2016, given the usual construction time—would equip the U.S. with the third-largest LNG export capacity in the world, after Qatar and Australia, though the latter is expanding its potential at a rapid pace. The first multiyear contract for shipments of U.S. LNG, which could guarantee a return on investment in the new liquefaction plants, was signed in October 2011.

U.S. federal legislation favours natural gas exports (both LNG and network gas) to countries with which the U.S. has a free-trade agreement (FTA). The U.S. has entered into over a dozen such agreements, including with South Korea and Chile, where LNG accounts for 90% of total gas imports. LNG shipments to non-FTA countries, e.g., those in Europe, requires a separate authorisation from DoE, which resolves whether a specific transaction is in line with the "public interest". In practical terms, DoE will examine the impact of exports on the U.S. economy, specifically the domestic supply of natural gas and its price.

Prospects. The U.S. debate is marked with a notable hesitation about launching large-scale LNG exports, as large as 15% of current domestic production, and is attributable to two factors. First, it is unclear whether the forecasts about maintaining, or even expanding production from unconventional deposits are accurate. Large-scale production from these fields began only a few years ago, thus making it hard to determine its longevity. At the same time, the share of natural gas in the U.S. power generation and transportation sectors is expected to grow—natural gas is relatively cheap and its use releases less GHG than oil. Second, the largest natural gas consumers, such as the petrochemical industry, are expecting a price spike as a result of shipping large volumes of gas abroad, thus thwarting their competitiveness. It is also unclear if the U.S. can become a meaningful player in East Asia in light of the rapid build-up of delivery capacity by other exporters, e.g., Australia, which wants to triple its exports by 2016. In the short to medium term, there are little chances for political gains as well. A greater availability of LNG will lead to a fairly small drop in demand for oil and, by extension, its global price, and will not undermine the role of unstable oil-producing regions (such as the Persian Gulf or Gulf of Guinea). Despite a rapid expansion of the infrastructure, technical barriers still matter most for a greater integration of the LNG markets.

Shipments of U.S. LNG to Europe would be advantageous as an instrument of diversification of natural gas supplies. Still, although geography favours Europe over Asia and irrespective of legal barriers, exports to Europe are considered less profitable. Even as demand by key consumers (Germany, France) is growing, the leading suppliers can make up for it. This could lead to a decrease in reliance on oil-indexation and help to further bring down spot prices. However, the future price of gas in foreign markets will be the key criterion for exporting U.S. LNG.