

# FACT SHEET: Liquefied Natural Gas (LNG)

## Why LNG?

97% of natural gas consumed in the U.S. is from the U.S. and Canada, transported via pipeline.<sup>1</sup> However, natural gas production has peaked in North America. Over time, we're drilling more and more, but finding less and less.<sup>2,3</sup> Between 1998 and 2007, natural gas prices more than tripled as imports from Canada slowed and domestic production failed to keep up with demand.<sup>4</sup> To feed the increasing demand, more liquefied natural gas (LNG) terminals are being proposed, to increase imports from overseas.

## How Many?

The U.S. has five existing LNG terminals – in Massachusetts, Maryland, Georgia, Louisiana and a newer one in the Gulf of Mexico. Approximately 60 additional LNG terminals have been proposed in North America (45 of which would be in the U.S.),<sup>5</sup> though the Federal Energy Regulatory Commission (FERC) has estimated that only 10 LNG terminals are needed to meet short-term demand (of which two are in Mexico and two are in Eastern Canada).<sup>6</sup> Thirty-one proposals have been approved by federal regulators already. Many are being fought by local opposition groups, but fighting them is difficult in the U.S. since local and state rights to block such projects are largely overridden by the Energy Policy Act of 2005.

## Peak Gas

Globally, the demand for natural gas is increasing faster than it can be met. Global production is going to peak around 2020,<sup>7</sup> meaning that supply will start to drop as demand continues to rise. This will drastically increase costs and will exacerbate global conflict, as China, India and other growing economies compete with the U.S. for the world's limited gas supplies. China has plans for 8-9 LNG terminals.<sup>8</sup>

## Bad Economics

An LNG terminal will be an economic nightmare. Gas prices have already tripled since their historical average, which was fairly constant from 1976 through 1998. The push for LNG won't help in the long-run, since these new terminals wouldn't be built until around 2010. Companies will have to compete with India, China and the

rest of the world for competitive contracts to secure LNG supplies (or the U.S. will use military force – also very expensive – to control the supply). Since natural gas production is going to peak globally around 2020, any new LNG import terminals will only have around 10 good years of economic life (propped up by excessive use of U.S. tax dollars to support military ventures to secure foreign sources of gas) before global prices start to skyrocket.

## LNG = More Wars

Globalization of gas markets increases global conflict over gas supplies. Liquefied natural gas would be imported from Qatar, Algeria, Nigeria, Trinidad and Tobago, Australia



and Indonesia. Iraq, Iran, central Asia and Russia are also have major gas resources<sup>9</sup> and are likely to remain the focus of US military ventures.

The U.S. has a long-standing history of conflict with oil-producing nations, to control oil supplies. Now, as natural gas markets globalize, our military conflicts are starting to be about natural gas as well.

## Terrorism

Currently, LNG is produced in Trinidad, Iran, Algeria, Malaysia, Brunei, Libya, Egypt, Bolivia, Indonesia, Venezuela, Oman, Nigeria, Qatar and the United Arab Emirates, which are members of the four-year-old Gas Exporting Countries Forum. Most of these countries are locations where al Qaeda has an already established foothold.<sup>10</sup>

The U.S. policy of using military power to dominate world energy supplies is the prime inspiration for terrorism as a form of resistance.

In 2004, former White House counterterrorism director Richard Clarke revealed that intelligence analysts believed al Qaeda operatives had entered the country in the years before the 9/11 attacks by stowing away on LNG tankers in Algeria and jumping ship in Boston.<sup>11</sup>

A May 2005 report for the Rhode Island Attorney General found that terrorist groups have the intent and ability to launch another attack on U.S. soil and that US oil and gas infrastructure is a desired target. LNG tankers and terminals are vulnerable to attack and cannot be cost-effectively secured.<sup>12</sup>

GAO, the investigatory arm of Congress, recommended in 1979 that the government prohibit any additional large-scale LNG facilities in or LNG tanker transit through urban areas.<sup>13</sup>

When LNG shipments are brought past Boston area to an existing import terminal in Everett, MA, flights are halted, highways are shut down, bridges are closed and underwater dive teams are sent to explore for threats. The economic impact of these preparations alone are good reason not to invite such risky projects to coastal communities.

## Accidents

Terrorism isn't the only risk. LNG carries an inherent risk of accidents, as do all industrial facilities. LNG's properties make it uniquely dangerous if there were to be a spill or fire.

According to a December 2004 report by Sandia National Laboratory,<sup>14</sup> an accident or terrorist attack on a liquefied natural gas tanker could cause "major injuries and significant damage to structures" a third of a mile away and could cause second-degree burns on people more than a mile away. A "worst case scenario" could set structures aflame out to 2,067 feet and burn people as far as 6,949 feet away. The report's idea of "worst case" didn't include the actual worst case, failing to study larger ships that are planned and assuming that only some of the LNG tanker contents are released.

FERC allows damaging thermal radiation beyond the site boundary as long as its level is below 5 kilowatts per square meter. However, it is not until the thermal radiation intensity falls below 1.6 kilowatts per square meter that there is no damage to exposed humans.<sup>15</sup>

**Mike Ewall**    **215-743-4884**    **catalyst@actionpa.org**    **www.energyjustice.net/naturalgas/**    Nov 2007

<sup>1</sup> 97.3% of U.S. natural gas comes from the U.S. and Canada via pipelines (80.7% from U.S., 16.6% from Canada). 2.7% comes via LNG from Algeria, Egypt, Malaysia, Nigeria, Oman, Qatar and Trinidad. Data is from U.S. Department of Energy's Energy Information Administration for 2006. See [http://tonto.eia.doe.gov/dnav/ng/ng\\_move\\_imp\\_s1\\_a.htm](http://tonto.eia.doe.gov/dnav/ng/ng_move_imp_s1_a.htm) for raw data on imports and [http://tonto.eia.doe.gov/dnav/ng/ng\\_cons\\_sum\\_dcu\\_nus\\_a.htm](http://tonto.eia.doe.gov/dnav/ng/ng_cons_sum_dcu_nus_a.htm) for U.S. gas consumption data.

<sup>2</sup> Julian Darley, "High Noon for Natural Gas: The New Energy Crisis," Chelsea Green Publishing Company, Aug 2004. <http://www.highnoon.ws>

<sup>3</sup> "Exxon: Natural Gas Has Peaked in North America," June 30, 2005. [http://www.pastpeak.com/archives/2005/06/exxon\\_natural\\_g.htm](http://www.pastpeak.com/archives/2005/06/exxon_natural_g.htm)

<sup>4</sup> Annual average wellhead prices of natural gas climbed from \$1.96 per thousand cubic foot in 1998 to \$6.42 in 2006. Energy Information Administration <http://tonto.eia.doe.gov/dnav/ng/hist/n9190us3a.htm>

<sup>5</sup> Federal Energy Regulatory Commission (FERC) Liquefied Natural Gas page: <http://www.ferc.gov/industries/lng.asp> (see maps in "LNG Projects" section at top of page)

<sup>6</sup> Presentation by FERC Chairman Pat Wood before Stanford Washington Research Group 2005 Institutional Policy Conference, May 5, 2005. <http://www.ferc.gov/EventCalendar/Files/20050512094600-PW%20Stanford%20Washington%20Research%20Group%20May05%20speech1.pdf>

<sup>7</sup> "HUBBERT REVISITED-6: Multicyclic Hubbert model shows global conventional gas output peaking in 2019," Oil & Gas Journal, Aug. 16, 2004. <http://www.energyjustice.net/naturalgas/2019globalgaspeak.pdf>. See also note 2 *supra*.

<sup>8</sup> "China clamps down to avoid LNG terminal glut," *Reuters*, September 5, 2005. <http://sg.biz.yahoo.com/050902/3/3uoqd.html>

<sup>9</sup> Note 2 *supra*.

<sup>10</sup> "Public Safety and FERC's LNG Spin – What Citizens Aren't Being Told," Pipeline Safety Trust, May 14, 2005. [http://www.lngwatch.com/race/docs/LNG\\_Public\\_Safety\\_\\_FERC.pdf](http://www.lngwatch.com/race/docs/LNG_Public_Safety__FERC.pdf)

<sup>11</sup> "Study spells out high toll on city in LNG," *Boston Globe*, Dec. 21, 2004.

[http://www.boston.com/news/local/articles/2004/12/21/study\\_spells\\_out\\_high\\_toll\\_on\\_city\\_in\\_lng\\_attack/](http://www.boston.com/news/local/articles/2004/12/21/study_spells_out_high_toll_on_city_in_lng_attack/)

<sup>12</sup> "LNG Facilities in Urban Areas: A Security Risk Management Analysis for Rhode Island," May 2005.

<http://www.projo.com/extra/2005/lng/clarkereport.pdf>

<sup>13</sup> *Ibid.*

<sup>14</sup> "Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water," Sandia National Laboratories, December 2004. [http://www.fe.doe.gov/programs/oilgas/storage/lng/sandia\\_lng\\_1204.pdf](http://www.fe.doe.gov/programs/oilgas/storage/lng/sandia_lng_1204.pdf)

<sup>15</sup> Dr. James A. Fay, "Public Safety Issues at the Proposed Fall River LNG Terminal," January 12, 2004. <http://nolng.org/Dr.Fay-report.pdf>