

ANTI-BROADWATER COALITION: OPPOSITION TO LNG FACILITY IN THE LONG ISLAND SOUND

The undersign organizations of the **Anti-Broadwater Coalition (ABC)** oppose the Broadwater Energy Project to install an offshore Liquefied Natural Gas (LNG) facility in the Long Island Sound. We believe the project would pose safety, economic and environmental risks to the public in New York and Connecticut as well as damaging effects to the Long Island Sound.

INTRODUCTION

LNG is a hazardous liquid transported and stored in large quantities. LNG is the liquefied form of natural gas. Cooled to below minus 260 degrees Fahrenheit, LNG takes up 1/600th of the volume of natural gas in its vapor form. Pumped into enormous tankers- some large enough to fuel ten million homes for a day in one shipment- LNG is imported from countries throughout the globe including Trinidad and Tobago, Algeria, Nigeria and Qatar.

ACCIDENTS/SAFETY

Potentially catastrophic events could arise from a serious accident involving these facilities such as pool or vapor cloud fires.

Pool Fires – The most serious hazard is what’s known as a “pool fire”. A pool fire occurs when LNG spills onto water and ignites in the air. A pool fire is intense, burning far more hotly and rapidly than oil or gasoline fires. It cannot be extinguished-all the LNG must be consumed before it goes out. Because an LNG pool fire is so hot, its thermal radiation may injure people and damage property a considerable distance from the fire itself. Many experts agree that a large pool fire, especially on water (due to heat transfer), is the most serious LNG hazard.¹

Flammable Vapor Clouds – If LNG spills but does not immediately ignite; the evaporating natural gas will form a vapor cloud that may drift some distance from the spill. If the cloud subsequently encounters an ignition source, those portions of the cloud with a combustible gas- air concentration will burn.

¹ Congressional Research Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, September 9, 2003, Paul W. Parfomak.

Asphyxiation - Although not poisonous, exposure to the center of a vapor cloud could cause asphyxiation due to the absence of oxygen. If the vaporizing LNG does not ignite, the potential exists that the LNG vapor concentrations in the air might be high enough to present an asphyxiation hazard to the ship crew, pilot boat crews, emergency response personnel or others that might be exposed to an expanding LNG vaporizing plume.²

Skin Burns and Cryogenic Effects - The extreme cold of LNG can directly cause injury or damage. Although momentary contact on the skin can be harmless, extended contact will cause severe freeze burns. On contact with certain metals, such as ship decks, LNG can cause immediate cracking.³ Potential degradation of the structural integrity of an LNG ship could occur, because LNG can have a very damaging impact on the integrity of many steels and common ship structural connections, such as welds. Both the ship itself and other LNG cargo tanks could be damaged from a large spill.⁴

Since 1944, there have been approximately 31 serious accidents at LNG facilities and LNG transport vessels worldwide. On January 19, 2004 a fire at the LNG processing facility in Skikda, Algeria killed an estimated 27 workers and injured 74 others. The Skikda fire completely destroyed the processing plant and damaged a marine berth. According to a fact sheet published on April 20, 2004 by the California Energy Commission Staff, the accident was caused by a gas leak, which resulted in a gas vapor cloud. The gas cloud was drawn into the boiler and exploded. In addition to the loss of life the LNG units will cost \$800 million to replace.

TERRORISM RISKS

Because LNG infrastructure is highly visible and easily identified, it can be vulnerable to terrorist attacks. According to the *Congressional Research Service's (CRS) Report for Congress, Liquefied Natural Gas Import Terminals: Siting, Safety and Regulation*, January 28, 2004, "In light of the terror attacks of September 11, 2001, Congress is concerned about the security of existing LNG infrastructure and the security implications of a major increase in LNG imports to the United States." Tankers may be physically attacked in a variety of ways to destroy their cargo or commandeered for use as weapons against coastal targets.

Terrorist attacks on the LNG facility or tankers could have severe ramifications for the public and the Long Island Sound.

² Sandia Report, Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water, published December 2004, page37.

³ Liquefied Natural Gas in California: History, Risks, and Siting, California Energy Commission, Staff White Paper, July 2000.

⁴ Sandia Report, Guidance on Risk Analysis and Safety Implications of Large Liquefied Natural Gas (LNG) Spill Over Water, published December 2004, page 38.

- Severe structural damage could occur from some of the very large spills caused by intentional breaches. This result is because the volume and rate of the LNG spilled could significantly impact the ship's structural steel. A cascading failure that involves damage to adjacent cryogenic tanks on the ship from the initial damage to one of the LNG cargo tanks is a possibility that cannot be ruled out.⁵
- The vapor cloud for large spills could extend to beyond 1600 meters, depending on spill location and atmospheric conditions. The thermal radiation from the ignition of a vapor cloud can be very high within the ignited cloud and, therefore, particularly hazardous to people.⁶

ENVIRONMENTAL RISKS

The Long Island Sound is recognized by the federal government as an estuary of national significance. The Sound's fragile ecosystem is already severely stressed. The federal government and the states of New York and Connecticut have entered into a partnership agreement to provide the necessary funding to implement such far reaching and protective programs as the reduction of nitrogen loading, wetlands protection and restorations, storm water discharge mitigation and the development of successful stewardship programs. Federal government spending to help restore the Sound was over \$7 million in 2004 and is budgeted for \$6.5 million for 2005. Since 1985, federal tax dollars have contributed \$45 million to protect the Long Island Sound. In addition, according to EPA documents the Sound generates \$5.5 billion per year in our regional economy.

- **Sea Floor Impacts** - the mooring platform, which is projected to cover 7,000 square feet of the sea floor and the 25 miles of ditching for a pipeline connection, would degrade the ecosystem of the Long Island Sound. The ditch cuts for the pipeline would allow fine sediments and organic material to fill in the exposed area. The break down of the organic matter will cause a decrease in oxygen in that area having a detrimental effect on the benthic community, shellfish and other bottom dwellers in the surrounding area. In addition, pipelines have been denied in the past because of the degrading effect on the LIS ecosystem. The Connecticut Department of Environmental Protection denied the proposed Islander East Pipeline Project because it would "cause degradation of water quality through the sediment suspension caused by dredging, plowing and the short-term in water storage of dredged materials".⁷ The Conn. DEP also cited the alteration and destruction of shellfish habitat through direct trenching and plowing of the sea bottom and the displacement or disturbance of a water dependent use (shellfishing) by a non-water dependent use as reasons for denial.

⁵ Ibid, page 50.

⁶ Ibid, page 46.

⁷ Connecticut Department of Environmental Protection, Press Release, October 17, 2002, *DEP Issues Denial to Islander East, Project Inconsistent with Connecticut's Coastal Management Program*.

- **Sea Water Impacts** - Hydrostatic testing, a process to ensure that the pipeline won't leak prior to LNG use, would use water from the Sound. A biocide may be added to control the growth of hydrocarbon degrading bacteria and fungi. After hydrostatic testing is complete the water will be tested and, if required, treated before discharging back into the Sound.”⁸ Biocides are harmful or fatal if swallowed and, if combined with water from the Sound, *must* be treated before releasing it into the Sound. Even after treatment some biocide materials would be introduced into the Sound, further degrading the ecosystem. In addition, the LNG barge and tankers require the use of ballast water. During operation the tankers will intake ballast water from the Sound to keep the vessel balanced. As this water is drawn in, the process utilizes screens to control the intake of fish, shellfish, organisms and debris. Fish and other organisms will be destroyed in this process.
- **Species Protection** - Threatened or endangered species can be found in the Sound from May to November each year. To address this problem, Broadwater plans to establish windows for construction activities and trained marine species monitors will be available. The Broadwater report notes “Should a sighting occur, the appropriate actions will be used to minimize potential impacts.” There is no indication that this has successfully been used as a means to protect marine species nor do we believe it is feasible or would be effective.
- **Lighting** - LNG terminals require extensive lighting for safety purposes. Light pollution poses a threat to Long Island's habitat. Light pollution affects fish and migratory birds. Mortality rates will increase as birds fly into lights and structures around the lights.
- **Global Warming** - LNG uniquely increases the emission of carbon dioxide (CO₂), which is the primary cause of global warming, into the atmosphere. The processes necessary to convert and transport LNG are energy intensive. The process of converting natural gas into a liquid, transporting it across the ocean, and then returning it to its gaseous form, known collectively as the “LNG supply chain”, causes an increase in natural gas consumption of 18-22%.⁹ The combined impact of venting CO₂ during processing and the energy penalty during the LNG supply chain reduces the difference between a natural gas power plant CO₂ emissions and coal power plant emissions by nearly half.¹⁰ This difference is insignificant when the cost of environmental degradation and safety issues associated with LNG are considered.

⁸ Broadwater Project Description. Page 31.

⁹ Liquid Natural Gas: A roadblock to a clean energy future, Greenpeace, PG 3.

¹⁰ Ibid. Page ii. This statistic was based on the travel distance a tanker would travel to California.

INDUSTRIALIZATION OF THE LONG ISLAND SOUND

This project would allow multi-national corporations to assume control of several square miles of a local public resource. The Broadwater barge would dramatically change Long Island Sound from an open natural resource into commercial real estate. The required “safety zone” around the facility would no longer allow accessibility for commercial or recreational fisherman, lobstering, sailing, boating or other user activities. Additionally, a “no fly zone” would be established about the area. LIS should not be perceived as a “buffer zone” to protect populations along its shore from potentially dangerous, private industrial activities. **Long Island Sound is not for sale.**

RELIANCE ON IMPORTED FOSSIL FUEL

Investing an estimated \$700 million to construct an LNG facility runs counter to much needed efforts to reduce our reliance on environmentally destructive fossil fuels and significantly delays the possibility of moving towards clean, safe and renewable energy resources. New York State recently adopted a Renewable Energy Portfolio Standard (RPS), which requires New York to utilize renewable energy to meet 25% of our electricity needs by 2013. Implementation of the RPS should be among the state’s highest energy priorities. Instead of supporting construction of infrastructure that will shackle us to more fossil imports from volatile areas of the globe until at least 2040, the region would be better served to encourage capital investments in energy infrastructure that helps us make the transition to domestically available renewable energy sources such as solar, wind, and biomass.

Additionally, there are concerns regarding the impact of this facility on gas prices. The LNG terminal is expected to be capable of supplying a very significant percentage (about one-third to one-quarter¹¹) of the region’s demand for natural gas. If the facility became unable to supply this enormous portion of our energy need, due to a malfunction, terrorist attack or other disruption, energy prices could be expected to spike dramatically. Even if no unanticipated events occurred, this facility is likely to increase our reliance on a single energy source, thus increasing gas price volatility¹².

Natural gas is a direct competitor of renewable technologies. Broadwater’s project will undercut New York’s effort to increase the role of renewable energy. The LNG facility will not act as a bridge to renewable energy but rather as a roadblock.

¹¹ Broadwater Project Description, pg3: facility would supply 1 billion cubic feet (Bcf) daily to NY & CT, where demand is between 3 and 4 Bcf per day.

¹² The Ability to Meet Future Gas Demands from Electricity Generation in New York State, Charles River Association, July 2002, stated “The more natural gas pipeline capacity built and used to serve electricity generation, the more dependent the electric system is on natural gas availability and the more exposed it is to natural gas price volatility.”

HIDDEN COSTS

The cost of protecting each LNG tanker shipment is about \$80,000 per tanker. Broadwater estimates that 2 to 3 LNG tankers per week will travel to the Long Island Sound and offload their fuel to the proposed facility. The costs of protecting LNG tankers entering Long Island Sound could reach a sum of \$12.48 million per year. State residents of Massachusetts absorb 47% of the security costs for the LNG facility in Boston.¹³ The responsibility for hidden security costs associated with the Broadwater project has not yet been determined.

Development Concerns- The overwhelming majority of the natural gas involved in the Broadwater project would serve New York City and Connecticut.¹⁴ Additional national gas supplies would encourage development on-shore, especially on eastern Long Island, and would increase concerns about development of a gas-fueled power plant in the Pine Barrens and elsewhere that would require the storage of large quantities of diesel fuel as a backup source of energy for the generators.

¹³ Letter from Senator John F. Kerry and Senator Edward M. Kennedy to Federal Energy Regulatory Commission Chairman, Patrick Henry Wood, III. November 19, 2004. Based on Boston LNG facility statistics.

¹⁴ Broadwater presentation, Miller Place Firehouse, November 16, 2004.