

## INTRODUCTION

Broadwater Energy, LLC (Broadwater or the “Project”), is a joint venture between TransCanada Corporation and Royal Dutch Shell. TransCanada is one of the largest energy companies in North America, primarily known for its natural gas gathering and pipeline system from Alberta to eastern Canada. Royal Dutch Shell is a global oil and gas company – one of the largest suppliers of liquefied natural gas (LNG) around the world. Broadwater has proposed to build a Floating Storage and Regasification Unit (FSRU) to be permanently moored in the middle of Long Island Sound. Like other land-based LNG import terminals elsewhere on the Atlantic seaboard, the FSRU would receive LNG cargoes from overseas liquefaction plants and would have a large storage capacity in order to maintain adequate inventory in the event LNG tankers are delayed either crossing the Atlantic Ocean or entering Long Island Sound. Over 1,200 feet in length, 200 feet in width, and 80 feet above the water line, the FSRU is designed to hold eight separate tanks, a total capacity of 8 billion cubic feet (Bcf). An FSRU of the scale contemplated for Long Island Sound has not been commercialized elsewhere in the world. It therefore represents a substantial scale-up of conventional LNG and floating oil storage technology that has been used by global energy companies for decades.

The FSRU would help meet energy demand throughout the Northeast via a 21.7-mile long subsea pipeline that would connect to a marine tap on the existing Iroquois Gas Transmission System (Iroquois). The Iroquois mainline extends from upstate New York through western Connecticut and across the Sound to Long Island. Iroquois also has a separate high-pressure marine lateral, Eastchester, which connects the north shore of Long Island to New York City. The mainline tap on Iroquois would be located due west of the FSRU in the middle of Long Island Sound. Broadwater expects that the Project would be capable of operating near continuously at a production rate of 1.0 Bcf/d. Broadwater’s proposed in-service date for the Project is late 2010.

In May 2005, the Long Island Power Authority (LIPA) asked Levitan & Associates, Inc. (LAI) to conduct due diligence on Broadwater’s potential market and economic impacts, as well as to address highlights of the proposed technology. LAI also conducted an assessment of Broadwater’s environmental impacts and safety considerations. The assessment conducted herein constitutes an independent and objective assessment of the Project from a New Yorker’s perspective.

***From a market and economics standpoint,*** we have quantified the expected economic benefits ascribable to Broadwater for Long Island, New York City, and Rest of State consistent with Broadwater’s proposed regasification of 1 Bcf/d. Over the ten-year planning horizon, 2010-2020, we have held Broadwater’s operating regime constant in order to derive the economic impact attributable to the Project when its daily output is treated as a baseload gas supply for redelivery across the New York Facilities System (NYFS). The NYFS is the network of local transmission and distribution mains owned and operated by Con Edison and KeySpan to serve gas utility loads and power plants throughout the region. We have conducted a sensitivity analysis in order to gauge the potential value to New York associated with alternatives including pipeline expansions and/or rival LNG import terminals that have been proposed in New England or New Jersey.

***From a technology standpoint,*** we have compared Broadwater's proposed FSRU to other offshore LNG facilities. We have considered the integrity of the yoke mooring system to the stationary tower in 90 feet of water, and the delivery logistics associated with replenishment of the inventory of LNG stored on the FSRU via LNG carriers that would be escorted by the United States Coast Guard (USCG) through The Race to the FSRU each week. The technology review was based on the draft and final Environmental Impact Statements (EISs) from other proposed and approved LNG projects, industry LNG technology presentations and papers and publicly available reports on LNG technology.

***From an environmental standpoint,*** we have assessed the potential impacts to marine plants and animals during the construction period and the long-term operational phase. We have also evaluated the effectiveness and feasibility of mitigation methods proposed by Broadwater in light of observations at similar projects in Long Island Sound and other marine sites. Finally, we have considered the potential impacts of the Project on boating and commercial fishing, and on other marine traffic in Long Island Sound, including The Race. Our environmental review is based on the Resource Reports and other documents submitted by Broadwater to the Federal Energy Regulatory Commission (FERC), other publicly available reports pertaining to Long Island Sound, and discussions with state officials. LAI also researched post-construction monitoring reports prepared for other marine infrastructure projects constructed in Long Island Sound, and similar marine habitats in the Northeast. The scope of this review encompassed the potential impacts arising from the construction of the 21.7-mile pipeline from the FSRU to the Iroquois mainline, the construction of the yoke mooring system tower and riser pipe, and the operation of the pipeline, FSRU, and LNG cargo vessels.

***From a safety standpoint,*** we have assessed the magnitude of various hazards associated with LNG, including the likely results under a number of postulated bad events. We researched the impact of LNG spills over water for both accidental and intentional events based on both experimental and modeling studies performed by others. We also evaluated safety zones established or proposed for other LNG projects. Finally, we reviewed the Resource Report on Safety and Reliability in Broadwater's application to FERC. In performing the safety review, LAI relied upon publicly available information developed by Broadwater, as well as other technical studies performed on similar energy projects elsewhere in the U.S. and Canada, in particular, the Cabrillo Deepwater Port (Cabrillo Port) project proposed to be located about 14 miles off the southern California coast. LAI reviewed a technical report issued by Sandia National Laboratories (Sandia) under contract to the U.S. Department of Energy (DOE), on the risk analysis and safety implications of a large LNG spill over water – Sandia has been doing research on nuclear weapons, military technology and homeland security since 1949. LAI assessed the impact of an LNG spill over water based on both experimental and modeling studies referenced by Sandia.

Unless otherwise noted, the observations and findings presented in this report were the product of due diligence conducted from May 2005 through May 2006. LAI's assessment was conducted after Broadwater filed its Resource Reports at FERC on January 30, 2006, but prior to FERC's issuance of the Draft EIS (DEIS) on November 17, 2006, the USCG's issuance of the Waterways Suitability Report (WSR) on September 21, 2006 and the Government Accountability Office's (GAO's) maritime security report on March 14, 2007. LAI's review of

these documents is incorporated in the final section of this report, as an update of the regulatory status of the Project.