


United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of: Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3)	
	ASLBP #: 07-858-03-LR-BD01
	Docket #: 05000247 05000286
	Exhibit #: NYS000090-00-BD01
	Admitted: 10/15/2012
	Rejected:
Other:	Identified: 10/15/2012 Withdrawn: Stricken:

NYS000090

Corrected: August 15, 2012

~~—NYS000046—~~

Submitted: December 14, 2011

EXCERPT



Synapse
Energy Economics, Inc.

The Proposed Broadwater LNG Import Terminal Update of Synapse Analysis

Prepared by:
Ezra Hausman and Kenji Takahashi,
Synapse Energy Economics
22 Pearl Street, Cambridge, MA 02139
www.synapse-energy.com
617-661-3248

January 19, 2007

OAGI0000225_1

Background

In March, 2006, Synapse Energy Economics (“Synapse”) released a report entitled “The Proposed Broadwater LNG Import Terminal: An Analysis and Assessment of Alternatives”¹ (“Synapse Report”). The purpose of the Synapse Report, prepared at the request of Save the Sound,² was to identify and evaluate potential alternatives to the proposed Broadwater Liquefied Natural Gas (LNG) import terminal in Long Island Sound to meet the long-term energy needs of the New York and Connecticut markets.

In brief, the Synapse Report concluded that:

- There is no evidence that the regional market requires a base load gas supply facility capable of providing an additional one billion cubic feet per day (bcf/d) of natural gas to meet its immediate or long-term needs. More pressing may be an infrastructure or other investment to address potential supply deficiencies during peak winter heating periods. However, the studies prepared by Broadwater Energy do not substantiate even this requirement for the region;
- Other, environmentally preferable approaches to resolving any anticipated peak load supply shortfall would provide economically and socially preferable alternatives to any perceived supply deficiency. Such approaches include increased development and use of local storage facilities; investments in natural gas and electric energy efficiency and renewable energy resources; expanded use of combined heat and power technology; and repowering of existing gas-fired power plants to increase fuel efficiency. The report quantified the substantial potential of these resources, and found them to be far more than sufficient to offset projected growth in natural gas demand. The increase in renewable energy assumed in our analysis is consistent with state mandates (called Renewable Portfolio Standards or RPS) in New York and Connecticut;
- Even if additional base load sources of natural gas are ultimately required to balance regional demand, Broadwater is not the most promising source of supply. The Bear Head and Canaport LNG import terminals in eastern Canada, for example, are expected to begin receiving deliveries and transporting gas to the northeast United States through the upgraded Maritimes and Northeast pipeline as soon as 2008. The total incremental volume of gas that could be delivered through these new and upgraded facilities will be 1.5 bcf per day, and these supplies will be available at least two years earlier than Broadwater could begin operations. These facilities, which are already under construction, are among a number of supply and demand alternatives which do not threaten the integrity of a national

¹ <http://www.synapse-energy.com/Downloads/SynapseReport.2006-03.Save-the-Sound.Alternatives-to-Broadwater-LNG-Terminal.05-033.pdf>

² Save the Sound (<http://www.savethesound.org>) is a program of the Connecticut Fund for the Environment (CFE; <http://www.cfenv.org>) dedicated to the restoration, protection, and appreciation of Long Island Sound and its watershed through advocacy, education and research.

environmental treasure³. They have not been given sufficient attention in the discussions over Broadwater.

- The proposition that LNG will represent an abundant and inexpensive source of natural gas is not supported by the existing and projected dynamics of the global LNG market.

Since the release of this report, a number of events have occurred which make it appropriate to review our analysis and conclusions. These events include:

- The delay of the proposed Bear Head LNG terminal in Eastern Canada for lack of reliable source of supply;
- The release of updated gas demand forecasts from the U.S. Energy Information Administration (US EIA);⁴
- The approval of two additional LNG import terminals, located in Massachusetts, to serve the northeast market;⁵
- The release of the Broadwater Draft Environmental Impact Statement (DEIS) in November 2006, which addresses some of the issues raised in our report;⁶
- The filing of a notice with FERC from the Repsol Energy North America Corporation, developer of the Canaport LNG facility in Saint John, New Brunswick, clarifying that they intend and expect to deliver 0.73 bcf of gas into the northeastern United States;⁷
- Certain public claims by Broadwater Energy regarding the economic benefits of the project, specifically their claim that it will save households in the region an average (median) of \$300 per year in energy costs from 2011 through 2025;⁸
- Legislation enacted in 2005 (Public Act 05-1) in Connecticut created a new requirement for electricity suppliers and distribution companies to acquire 1% of their supply from combined heat and power, or from commercial or industrial energy efficiency measures to be in place by January 2007. The requirement increases to 4% by January 1, 2010;

³ Long Island Sound was designated an "Estuary of National Significance" under §320 of the Clean Water Act in 1988.

⁴ <http://www.eia.doe.gov/oiaf/forecasting.html>

⁵ http://www.boston.com/news/local/articles/2006/12/20/governor_approves_2_lng_ports/

⁶ <http://www.ferc.gov/industries/lng/enviro/eis/11-17-06-eis.asp>

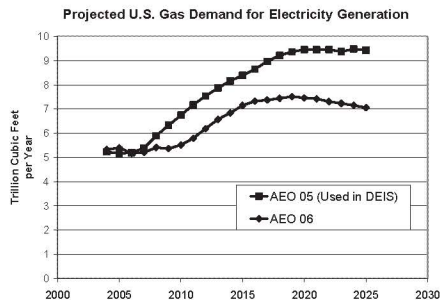
⁷ http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20070111-0066

⁸ http://www.broadwaterenergy.com/index.php?page=economic_benefits

- The Southwest Connecticut region now has around 250 MW of demand-response measures that are used to alleviate generation and transmission congestion in the region.

Review of basic conclusions

None of these recent events has altered our basic conclusion, that the Broadwater terminal is not required to meet the future energy needs of New York and Connecticut. To the contrary, both of our most basic conclusions have been strengthened. The newer forecasts for gas demand over the next two decades have been revised significantly downward relative to previously available forecasts, largely due to the disappearance of additional gas-fired electricity generation from utility resource plans. This change in projected gas demand for electricity generation is shown in the figure below.



Further, Public Act 05-1 in Connecticut, along with the expanded use of demand management in the southwest region of the state, demonstrate that the Synapse report may have been particularly conservative in estimating the future role of these resources in meeting the region's energy needs. Thus we conclude that it is still a preferable and feasible alternative for New York and Connecticut to meet their future energy needs with less costly, lower impact resources such as demand management, development of renewable resources, increased use of combined heat and power, repowering of existing inefficient plants, and increased use of seasonal storage.

In addition, the recent events make it even clearer that the region will be experiencing increased diversity and security of gas supply in the future, even without Broadwater. The LNG terminals in Canada and Massachusetts, all much further along than the Broadwater terminal, all add to the available gas supplies for New York and Connecticut. They can do this either directly, by transporting gas to the region through the interstate pipeline system, or indirectly, by releasing pipeline capacity that would otherwise be reserved for moving supplies through the region and northward.

Response to Draft EIS

The DEIS contains a discussion of the need for the project which would seem to contradict our conclusions, in addition to some specific discussion of the issues raised in our report. Unfortunately, the DEIS used data which is significantly out of date, particularly with respect to future growth in gas demand and gas-fired electricity generation. Many of the sources used in the DEIS were prepared as long ago as 2002 or 2003. As noted above, the gas demand outlook has changed significantly in just the past year.

Further, the DEIS evaluates alternatives such as energy conservation and renewable energy using extremely pessimistic assumptions. For example, the DEIS considers only renewable energy resources that are already planned or proposed, even though the Broadwater facility would be on line no sooner than 2011, and the relevant period for comparison is the decades thereafter. Quite frankly, we have more confidence in the people and the leadership of Connecticut and New York. Our assessment is that, given the increasing public awareness of the costs in dollars, national security, and damage to the climate that are associated with dependence on fossil fuels, the projections for energy efficiency and demand reduction in the Synapse Report were conservative. As evidence, we note that total natural gas consumption in New York *decreased* over the past decade, from 1.30 trillion cubic feet in 1997 to 1.16 trillion cubic feet in 2005, according to the US EIA.

In responding to the Synapse Report, the DEIS mischaracterizes our assessment as requiring “fully implementing *all foreseeable* energy conservation measures and having *all potential* renewable energy sources online” (emphasis added) to offset 75% of anticipated gas demand growth. This is a significant misrepresentation. Our analysis was intentionally limited to efficiency measures and renewable resource penetration levels that we perceived as economically justified, likely to be implemented, and consistent with best practices in the United States. Although we have not performed an assessment of what implementing *all potential* demand-side management (DSM) and renewable resources would imply, we are confident that implementing all potential such resources would much more than offset more than 100% of New York and Connecticut’s growth in gas demand for decades to come.

Conversely, the DEIS specifically addresses only one program to promote renewable energy, the voluntary approach often referred to as “green energy markets”. While we agree that these have had only limited success in increasing the share of renewable resources on the grid, we note that there are much more effective approaches. In the Synapse Report we described Renewable Portfolio Standards (RPS) in detail, which are mandatory programs that have proven much more effective than green energy markets. This is not merely theoretical; to date, perhaps 25 states have RPS or similar laws in place, including the New England states of Maine, Massachusetts, Rhode Island, Connecticut, and Vermont, and the Mid-Atlantic states of New York, New Jersey, Pennsylvania, Maryland, and Delaware, plus the District of Columbia. Some of these states have mandated utilities to acquire as high as 10% of their supply from renewable energy and other resources by 2010.

While the DEIS attempts to refute our assessments of the need for new gas supplies, it does so by relying primarily upon outdated forecasts from a 2002 New York State Energy Plan and a Task Force on Long Island Sound (TFOLIS) report from 2003. (A 2006 Long Island Sound LNG Task Force report is also cited, but no specific forecasts are referenced.) DEIS also cites the EIA 2005 forecasts which, as we have noted, have been superseded and revised sharply downwards in the readily available 2006 report. (The 2007 report is also now available.)

Finally, the DEIS takes issue with our description of DSM and renewable energy as “socially preferable” to increasing reliance on imported natural gas. We use this term as a shorthand reference to all of the benefits that are difficult to quantify in economic terms—decreased reliance on foreign sources, geopolitical benefits, environmental and recreational benefits of avoiding industrial development in Long Island Sound, and reduced impact on the environment, on human health, and on global climate. Other social benefits of renewable energy and energy efficiency programs include local job creation and increases in disposal income, at a level that would far exceed such benefits associated with the Broadwater project. These are all benefits for which we believe society at large has a preference, and thus we describe the resources that confer more of them as “socially preferable.”

Savings in Energy Costs

Broadwater has begun a public information campaign claiming that the presence of the proposed terminal would result in \$680 million per year in reduced energy costs in New York, Connecticut and Long Island, and “median household energy cost savings” of \$300 per year from 2011 to 2025. Our assessment, by contrast, was that the facility will result in little to no cost savings for the region.

Unfortunately, Broadwater has provided no substantiation of this claim⁹, so it is impossible to audit or refute their estimate. It is likely that the project would have some economic benefits in terms of construction and operations jobs, but these would be many fewer and more short-lived than the comparable benefits associated with energy conservation programs and renewable energy. In fact, most of the economic benefit would be claimed by gas exporting countries, and most of what is left would be claimed by Broadwater. There is little reason to believe that consumers would benefit.

One of our conclusions, detailed in the Synapse Report, was that the global demand for LNG is growing faster than supply, and that both international prices and transport costs to Long Island Sound would be high. We have seen no evidence that Broadwater is committed to delivering natural gas to New York and Connecticut at anything less than

⁹ The Broadwater “Economic Benefits Fact Sheet”

(http://www.broadwaterenergy.com/pdf/Fact_Sheet_EconomyFinalM.pdf) supports this with a reference to “Resource Report 5”, filed under docket CP06-54 on January 30 2006. However, this report, a Microsoft Word version of which can be found at <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=10945975>, contains no data to substantiate this claim.

market prices. If there were a specific commitment to ensure that consumers would share any economic benefit of this facility, that would be a different situation indeed.

Conclusions

We find that the conclusions reached in the March, 2006 Synapse Report have withstood, or been strengthened by, developments since its release. In particular, we find that projected demand for natural gas is lower, the projected role for energy efficiency and combined heat and power is greater, and the prospects for competing LNG import facilities are stronger than they were at the time we issued the report. We thus continue to conclude that the proposed Broadwater facility is simply not required to meet the region's current or projected energy needs.