

Rhode Island Senate LNG Task Force

March 9, 2010

Testimony of Weaver's Cove Energy

Ladies and gentlemen

Thank you for allowing me to come before you today and discuss our LNG project in Fall River, Massachusetts. In my testimony today, I will cover three areas. First, I will talk about the project itself, and more specifically the benefits we see the project bringing to the region and the local area. Second, I will discuss and refute some of the more outrageous claims that have been made about LNG in general and our project in particular, some of which have been or will be made in front of this task force. And third, I will be happy to answer any and all of your questions here today. To the extent you ask me a question for which I do not have an immediate answer, you have my assurance that you will receive the answer in writing within the week.

Let me begin by stating from the outset that we are committed to designing, constructing, and operating the safest and most secure LNG terminal possible. We are also committed to listening to and working with community members who understandably have questions and concerns about our project. That's why for the past eight years we've participated in dozens of state and federal public forums to address community concerns, and that's why I am here today. As the project review process moves forward, we look forward to continued public input and engagement.

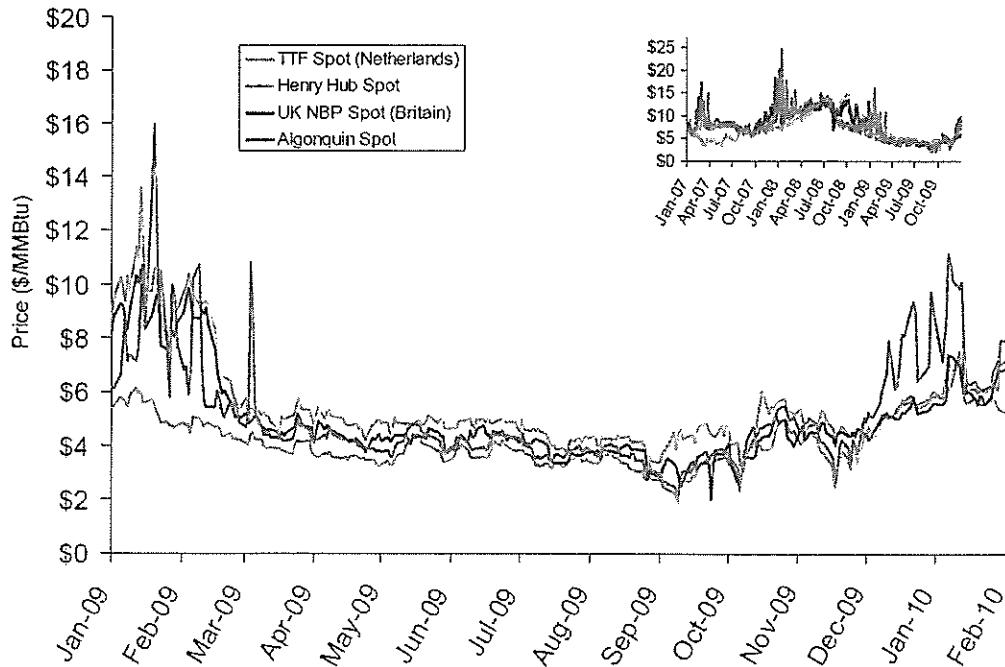
First let me speak briefly to the benefits of the LNG project. These can be grouped into three categories – the local impacts of the construction phase, the local impacts of the operational phase and the regional impacts of the operational phase. During construction, the project is expected to create around 600 jobs on average for a three year period. These jobs will peak at around 1,000 during the peak construction period in the second and third years. The payroll for these union construction workers will amount to some \$125 million (representing 2.5 million union labor hours). Prior to the announcement of our offshore berth project we commissioned Global Insight to assess the economic benefits of the project. The overall economic impact (measuring the direct and indirect effects on the local economy) of the construction was estimated to be 800 jobs and \$400 million of economic activity. If we assume the project now involves about 50% more investment, these figures should also rise by about 50%, or 1200 jobs and almost \$600 million of economic impact. Global Insight is presently updating these figures and we will be happy to provide a copy of the updated analysis when it becomes available.

During operations the benefits are smaller since the terminal requires a relatively modest, though highly paid workforce of about 50 employees. Global Insight estimated the direct and indirect job creation to be around 400 jobs and the annual economic benefit to be on the order of \$100 million. These benefits include contract employees providing a variety of services to the terminal, contract services including maritime support (tugs, pilots,

marine services, fuel suppliers, etc.) and terminal maintenance, and local and state taxes. You have heard testimony from others regarding some of these economic benefits, especially on the marine services industry in Narragansett Bay.

These are the more localized benefits. The broader regional benefits flow from the increased gas supply which the terminal would provide, which in turn will bring downward pressure on natural gas and electricity prices. I need hardly remind you or your constituents that New England, and Rhode Island especially, experience among the highest prices for natural gas and power of any region of North America, with only New York City being higher. The two following charts show the recent history of natural gas prices in the Northeast, as compared to other US locations and European markets. On the first slide, the blue line traces the price at the “Algonquin citygate”. Algonquin is the primary pipeline serving New England and the pipeline into which the Weaver’s Cove project will be connected. You will note that during the winter Algonquin has the highest prices of any region, and comparable pricing during the rest of the year. I would further note, that these prices cover a period when both the offshore Massachusetts terminal, Northeast Gateway, and the New Brunswick terminal, Canaport, were fully operational and supplying natural gas to New England.

Atlantic Basin European and US Spot Natural Gas Prices

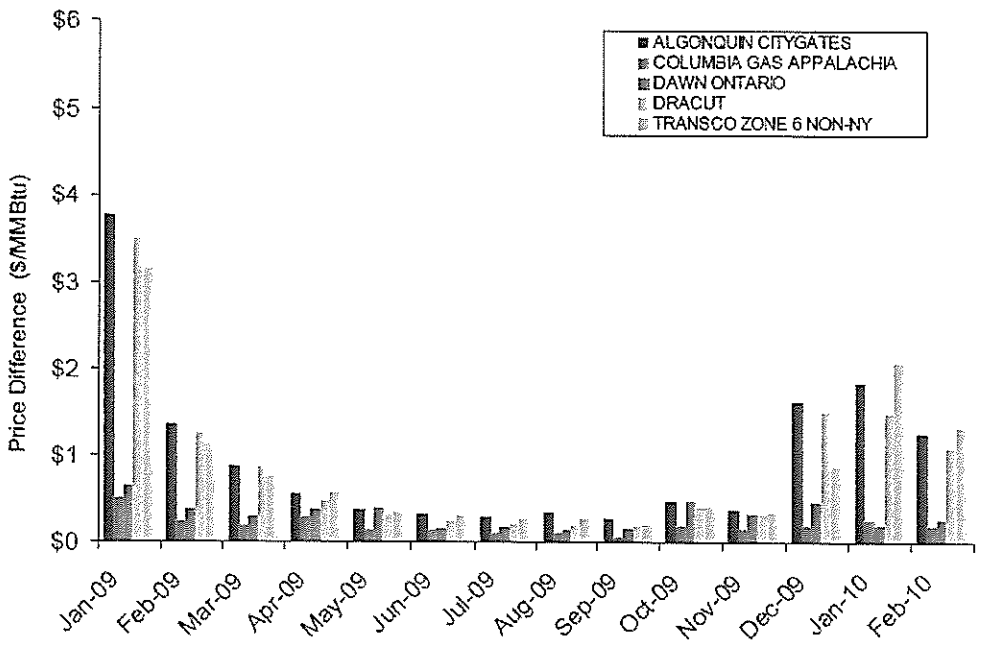


Source: Derived from Bloomberg and ICE data

Updated February 5, 2010

I know that other witnesses have testified that these new terminals will supply all the additional gas supply our region needs, but the data shows this simply isn't the case. If our infrastructure and gas supply were adequate, we wouldn't see our region paying more than other areas in the Atlantic Basin. The next slide shows just how much of a premium we pay. Not surprisingly, New England has historically paid a much higher price in the winter than during the rest of the year, but if our infrastructure was adequate, then the premium would be no higher in the winter than it is in the summer.

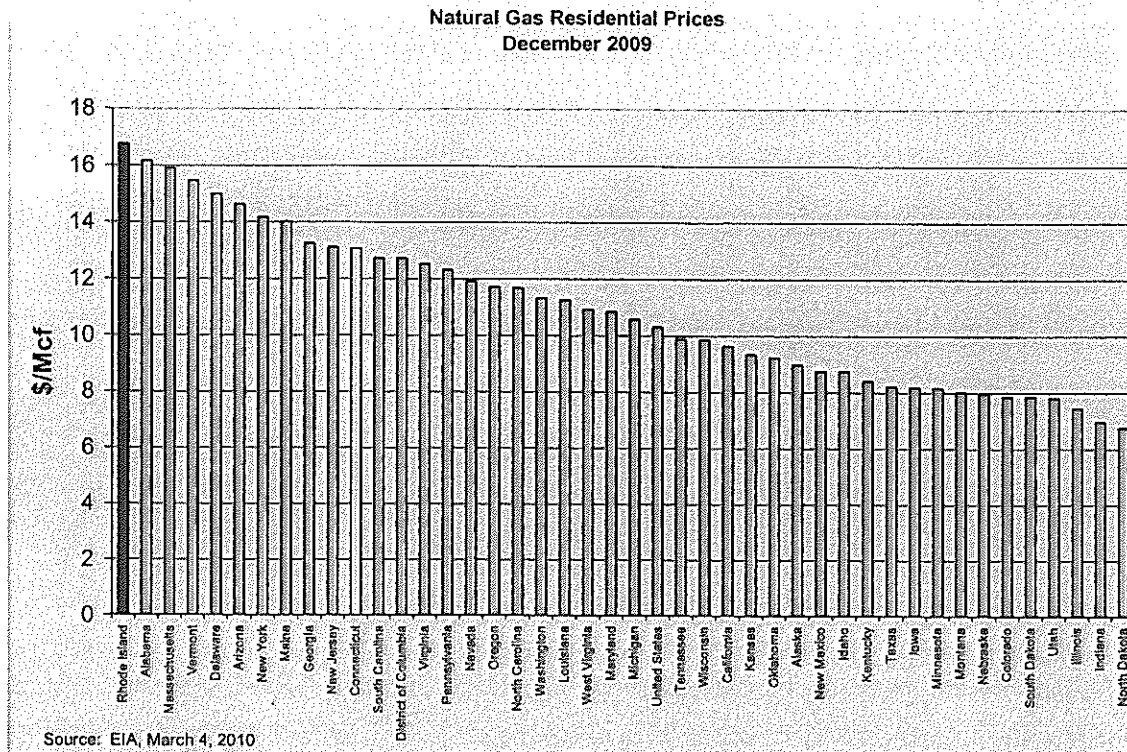
Northeastern Monthly Average Basis Value to Henry Hub



Source: Derived from Platts data.

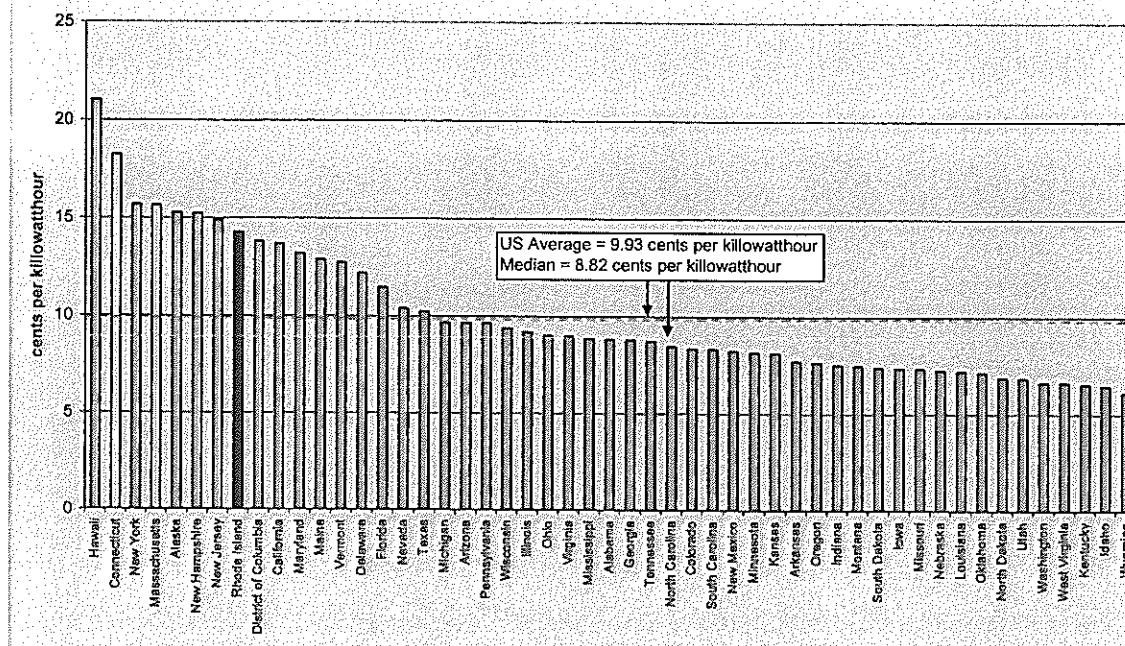
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Of course, these are wholesale prices, but they clearly have an impact on retail prices. As the following data from the Energy Information Administration clearly demonstrates, Rhode Island “enjoys” the distinction of having the highest residential natural gas prices in the lower 48 states.



And it is not just natural gas where we pay more than the rest of the country. Because of the extensive use of natural gas for power generation in New England, coupled with the design of our power market, we pay the highest prices for electricity as well, as the following diagram illustrates.

2009 Average Price of Electricity All Sectors (Jan- Nov 2009)
Source: Report No.: DOE/EIA-0226 (2010/02)



While we have made some estimates of the value of the Weaver’s Cove project to lower the region’s gas and power prices, I think the more compelling case is that made by the operator of the region’s power grid, ISO-New England. ISO-NE not only operates the grid but is charged with forecasting the long term outlook for electric supply and prices for all of New England. In August 2007, ISO-NE produced a report titled “New England Electricity Scenario Analysis” which reviewed the long term outlook for electric prices within the region. ISO-NE considered a wide range of possible future developments, including conservation measures and aggressive growth of renewable energy. What ISO-NE reported was startling. The report’s conclusions were simple and stark:

“Across all the scenarios and sensitivity cases, gas-fired power plants tended to be among the last plants dispatched (the so-called marginal units) to serve typical daily loads in New England to meet demand. These plants set the wholesale electric energy clearing prices in most hours of the year, approximately 90% of the time.”¹

In other words the price of natural gas is the dominant factor in determining the price of wholesale electricity which in turn sets the prices that businesses, industry, government

¹ “New England Electricity Scenario Analysis”, ISO-NE, August 2007, page 6

and homeowners pay for their power. And the figures are stunning. The following chart shows the amount of money that ISO estimates customers in New England will spend for electricity under each of the scenarios they studied.

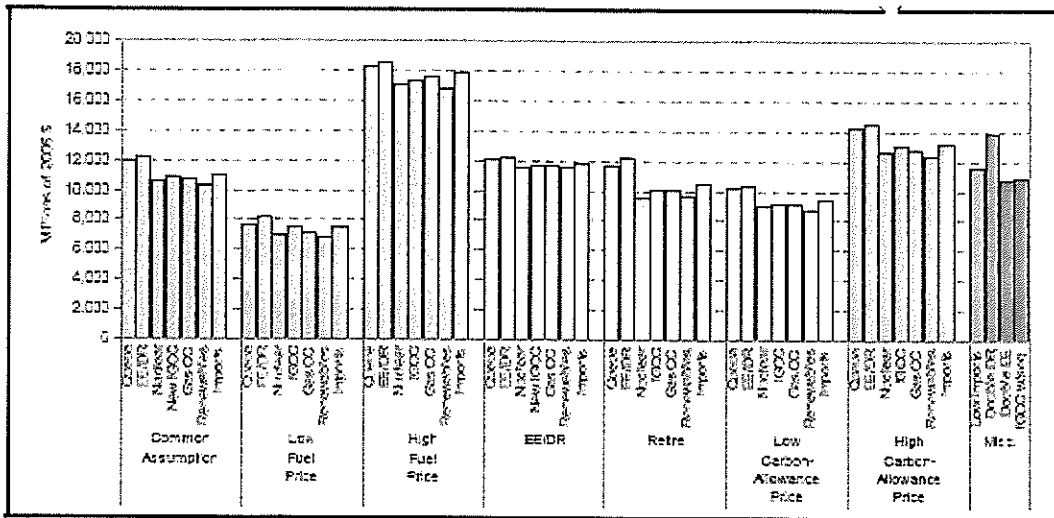


Figure 5-3: Load-serving entity annual expense for wholesale electric energy, grouped by sensitivity case, millions of 2006 dollars.

Based on the analysis, the difference between high and low electricity prices amounts to some \$10 billion per year. Most of that differential reflects higher or lower forecasts for North American domestic gas prices, measured by reference to the Henry Hub, the primary natural gas pricing point in Louisiana. In the price forecast used by ISO-NE the price differential between gas purchased in New England and gas purchased in Louisiana at the Henry Hub is \$1 per MMBtu², representing a \$1.25 billion per year premium in wholesale power prices. If a new LNG terminal such as Weaver’s Cove could lower this price by just \$0.10 per MMBtu, New England’s power prices would be lower by \$125 million per year. And we would expect that the region’s natural gas prices would also be reduced by adding more supply to the market.

Now let me turn to the safety and security aspects of the LNG project. LNG is among the safest if not the safest hydrocarbon fuels in the world. Since commercial, ocean-going deliveries of LNG began in 1964, the industry has clocked over 55,000 voyages into numerous ports including some of the busiest harbors in the world, all without any significant incidents. Indeed, we are not aware of a single incident involving an LNG tanker or import terminal that has resulted in any injury to the public or damage to any public property, nor any cargo spills or vessel collisions or allisions (where a ship runs into a stationary object like a bridge). Have there been incidents or accidents? Yes, a few, but when the record is considered you will note that the last incidents involving deaths or injuries (and these limited to employees of the facilities – not the general public) occurred

² “Scenario Analysis Project- Long-Term Forecast of Oil, Natural Gas, and Coal Prices in New England”, Levitan and Associates, March 22, 2007. Highest price for 2022 was \$14 per MMBtu, and lowest price was \$8 per MMBtu (www.iso-ne.com/committees/comm_wkgrps/othr/sas/mtrls/apr22007/fuel-price-forecast.pdf)

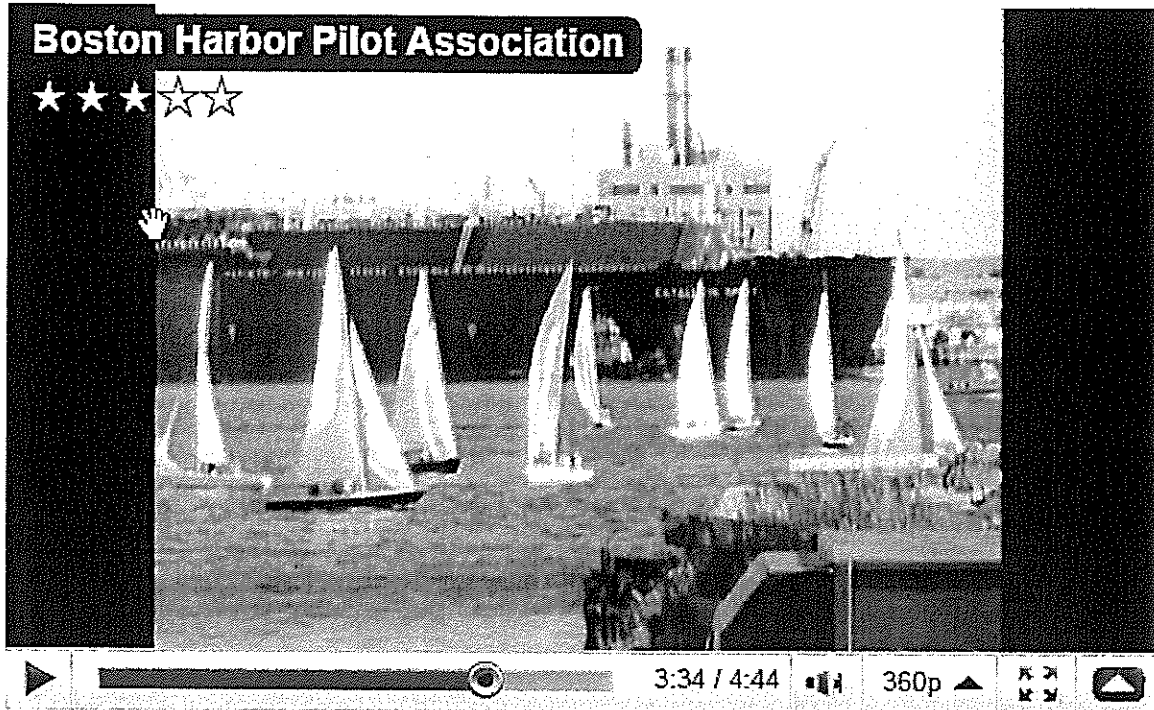
in the 1970s, and even then the fact that they occurred at an LNG terminal was incidental to the cause of the accident (these were construction accidents). What accounts for this record? There are numerous factors, but I would first point to the nature of LNG itself. As a liquid, LNG is too concentrated and too cold to burn. So it must first be spilled onto the ground or water, evaporate, then mix within air in a range of 5-15% before it becomes flammable. The regulations which govern the design of terminals and ships do not assume this will never happen. Rather they assume “reasonable worst cases” of accidental or deliberate spills, and then require measures, such as impoundments to capture the spill and separation distances between facilities and populated areas to essentially eliminate the risk to the public or reduce it to very low levels. LNG cannot explode, nor can natural gas unless it leaks into a confined space. Again, we employ measures to avoid this occurrence, by deploying gas detectors to measure gas concentrations in confined spaces, eliminating sources of ignition, and ventilating areas where gas might be present to name but a few.

I would also point to the very strict regulations enforced by countries which host these facilities including the United States where the regulations for import terminals are administered by the Federal Energy Regulatory Commission (or FERC), the US Department of Transportation and the US Coast Guard. The LNG tankers are overseen by their “flag states”, governed by the International Maritime Organization³ Gas Carrier Code and are subject to rigorous regulation and inspection by the US Coast Guard when they plan to call in a US port. The robustness of the facilities’ designs plays a role. LNG tankers are double hulled in order to create the rigidity necessary to support the LNG cargo tanks, which are themselves double layered and insulated within the ship’s inner hull. The terminal itself has a storage tank which has a nickel steel inner storage tank surrounded by an outer containment tank made from reinforced concrete with a thick layer of insulation between the inner and outer tank. These layers of protection and reinforcement make it hard to envision any scenario which involves an accidental or deliberate leak of LNG. Most of the plant is built with similar levels of redundancy. Then there is the self interest of the industry itself. Because the investments we make are so large (\$200+ million for an LNG tanker, \$500++ million for an import terminal, and billions for the export facilities), the industry has an enormous stake in ensuring the safe operation of these assets. Yes, we are in business to try to make a profit, but making a profit is very hard if we suffer from catastrophic accidents or simply operate in a fashion which causes the regulators to shut us down.

In the post-9/11 world we all have to deal with increased security, and LNG shipping and terminals are no exception. There will be security around the LNG tankers as they enter Narragansett Bay and make their way to Fall River. However, the exact size of the moving safety and security zone remains as now undetermined though it will not exceed two miles ahead, one mile astern and 1000 yards on either side of the vessel. Other marine traffic will be allowed to enter or remain in the safety and security zone with permission of the Coast Guard. In Boston Harbor which is more confined, busier and more complex than Narragansett Bay, the security zone extends to 500 yards on either

³ International Maritime Organization, a body under the United Nations which promulgates regulations for maritime shipping.

side of the vessel and 400 yards of the tanker once it is docked at the terminal. There is no evidence that we have seen to suggest that commercial, ferry, cruise ships or recreational traffic have in any way been discouraged or disturbed by the ongoing presence of LNG tankers in Boston Harbor as the clip below demonstrates:



A primary aspect of concern that has been expressed is the potential for closing the Pell and Mount Hope bridges when LNG tankers pass underneath. No federal or state security or police agency has found any reason to close any of these bridges (and nor did Massachusetts when the Braga Bridge also formed part of the transit route). However, RITBA, for reasons of their own, appear to be willing to subject the users of both bridges to this inconvenience. Even if this was to happen, we contend that the disruptions would not be anywhere close to the magnitude claimed by the agency. There are traffic survey data contained in the Environmental Impact Statement for the Weaver's Cove project, but none has been submitted by RITBA. However, it might be more useful to look at a real world example of what might happen. In Boston Harbor the Tobin Bridge carries between 60,000 and 85,000 vehicles per day. When an LNG tanker passes underneath the traffic is halted or constrained by the State Police. Yet since 9/11 there have been no reported major traffic delays, economic disruptions or other adverse impacts from these closings which are longer in duration than they would be in Rhode Island since the LNG tanker in Boston Harbor is moving backwards under the Tobin Bridge at a very slow speed. In contrast, the traffic numbers for the Pell Bridge are 27,000 vehicles per day and for the Mount Hope Bridge, 18,000 vehicles per day, or less than half to one quarter of the traffic on the Tobin Bridge. In addition, the LNG tanker will be passing under these bridges much faster than in Boston Harbor.

Finally there are environmental impacts, some of which are transitory and some of which are permanent, and some of which are unavoidable. There will be a permanent loss of potential winter flounder spawning habitat amounting to some 73 acres out of a total of 7,400 acres of spawning habitat in Mount Hope Bay. While this loss is unavoidable, and while it seems clear based on the scientific evidence that winter flounder stocks are suffering from overfishing, not a lack of habitat, we have nevertheless offered to mitigate this impact through habitat or other restoration programs. Weaver's Cove has offered \$15 million in mitigation, but to date we have not received a response from the resource agencies or volunteer groups who could identify suitable projects to which these funds would be applied. Nearly all the other impacts associated with dredging or the construction of the berth and underwater pipeline would be transitory in nature, and would be further restricted to taking place between August 1st and January 14th in Mount Hope Bay. These windows are imposed by the fisheries agencies to ensure that there are no adverse impacts to fish migration or spawning arising from the dredging or construction activities.

As for the nature of the dredge material, or spoil, itself, Weaver's Cove has conducted extensive testing of all the areas which would be the subject of dredging or construction work. This testing involves gathering extensive samples of the materials and analyzing their chemical and physical characteristics. In the final stage, the dredge material is mixed with water in which sensitive marine micro-organisms are present, in order to measure the effects of the dredge materials on the marine environment. These testing protocols are defined in detailed procedures issued by the Army Corps of Engineers and the EPA. Every step of the extensive testing process requires these agencies' approval and the samples are tested by independent laboratories that are certified by the Army Corps. The results of testing the Mount Hope Bay and the Taunton River sediments have shown they are free of hazardous or toxic levels of contaminants and are suitable for disposal in the offshore sites in Rhode Island Sound and Massachusetts Bay. Only the cleanest sediments can be disposed of in these sites. The tests also show that harmful levels of chemicals are NOT released into the water column when the sediments are mixed with the water.

Finally, it would be remiss to discuss the environment without covering the beneficial aspects of natural gas. Natural gas is the cleanest fossil fuel, producing less CO₂ than oil or coal, and virtually no other pollutants of note. It does not pose a contamination risk to water or land. And, in the context of our nation's and region's energy policy, which is strongly supportive of wind and other alternative energies, it provides an ideal, if not the only proven means to back up these intermittent sources of energy. In this context LNG is especially useful in New England, as it is the only means by which natural gas can be stored and released to the grid on short notice to fuel back-up power, since unlike the rest of the country we have no other facilities to store gas in our area.

To summarize this part of my testimony, let me repeat: LNG is safe, is the least environmentally damaging fossil fuel, and an LNG terminal in Fall River would provide a strong economic stimulus during its construction and operations, both to the immediate area through the creation of well-paying jobs and a steady stream of tax revenues to local

communities, but also a wider benefit through helping lower the region's energy bills, the highest in the nation.

I would now like to move on to the next area of my testimony, which is to address some of the claims and statements made by others appearing before you, or which you may have seen printed in the local media. Frankly, when I reviewed the first two hearings I was at a loss to know where to begin, so overwhelmingly inaccurate was much of the testimony being presented in front of you. So let me try to cover some of the highlights (or perhaps more accurately the lowlights) from those hearings and contrast the statements made with the facts as they have been documented in connection with the permitting of this project.

One area which you heard much testimony was in regard to the loss of jobs if our project went forward. The primary source of this claim appears to come from the Aquidneck Island Planning Authority report which was prepared in 2005, and was flourished dramatically in front of the committee at the first hearing. A reading of that report, however, makes it clear that there was only one reference to "loss of employment" or "loss of jobs" in the entire report – on page 36, where the report stated "Many tourism-based workers live in Newport and Middletown and any loss of employment would adversely affect other areas of the economy in those communities". Nowhere does the report identify where jobs would be lost, how many would be lost and why. I'd also note that this report, although prepared in 2005 was not submitted to the FERC until 2008, well after the analysis of the project had been prepared and published in the Environmental Impact Statement, and where the report's claims would have been subject to third party scrutiny, analysis and validation.

You also heard numerous claims that LNG will explode on contact with water, or create flammable vapor clouds travelling for miles, then igniting and exploding. None of this is supported by any reliable study I have ever seen or read. You were told the Sandia Report states that thermal radiation from a fire following spill from an LNG tanker poses a major threat up to one mile away, with no-one surviving and buildings collapsing from the ensuing fire. The Sandia Report states no such thing. It identified that an intentional breach of an LNG carrier represented a major risk up to 500 meters away, and then only in the absence of any mitigation (i.e. security) being applied to the ship. 500 meters is not one mile – it's less than one third of a mile. What Sandia also states is that at a distance of one mile, the risk to public safety (people and property) is "low" meaning there is the possibility of "minor injuries" and "minor property damage", again in the absence of any mitigation which would reduce these impacts further.

You were told that federal exclusion zones around LNG tankers were established following the publication of the Sandia report, and reflected the risks identified in that report. False. There is no such thing as an "exclusion zone." The federal safety zone process has been in place for decades, and reflects the need to control other shipping around a major vessel operating in confined waterways. The safety zones for LNG tankers in Boston Harbor were established in 1984, twenty years before the publication of the Sandia Report. Common navigation practice dictates that large commercial vessels

(LNG tankers, large oil tankers, and other large ships) maintain a safe separation distance between themselves and other large vessels. You were also told the same safety and security zones apply on the outbound leg because cargo was left on board the tanker. Again, untrue. There is a very small volume of liquid LNG left on board to keep the tanker cargo tanks cool until it reaches the next port, but no-one believes it represents any risk, and certainly there isn't enough cargo to give rise to any of the concerns addressed in the Sandia Report. In fact the quantity in each tank is so small it is far below the ship's water line.

You heard that the federal safety and security zones require foot patrols on land where the exclusion zone touches the land. Again, false. You heard that the town of Hull in Massachusetts spends tens of thousands of dollars on security for LNG tankers. False. Hull spends nothing, but those communities which do provide security in Boston Harbor are fully reimbursed for those services. And, as a condition of our FERC authorization, we must reimburse any costs incurred by communities or states as a result of a federally approved security plan.

You also heard that there will be severe disruptions in the Bay as a result of unannounced arrivals, and a prohibition on nighttime transits. Again, completely false. There is no requirement to keep these vessels' movements "secret". Indeed with the advent of automated vessel tracking systems, anyone with access to the internet can determine where each LNG tanker is on any given day, as well as the next port of call and the time it will arrive there. We will have no concern sharing that information with the other Bay users so no-one can be surprised. Also, we can enter the Bay at night following a short period to give the pilots time to familiarize themselves with the ship handling characteristics. There is no prohibition on nighttime transits, and obviously once these go into effect, most, if not all, the risk of interference will disappear. In addition we have committed to avoid transits at peak periods, generally during the day on weekends and holidays between Memorial Day and Labor Day.

Finally, on the environmental front, you heard that the sediments that we plan to dredge are toxic, that sediment plumes will flow miles downstream, and that 73 acres of flounder spawning habitat will be lost. Of these the only accurate statement is the loss of potential flounder habitat, though you also heard others testify that spawning habitat is not the factor which puts flounder at risk – overfishing does. For the rest, exhaustive and expensive testing under the direction of the EPA and the Army Corps of Engineers has shown that the sediment is clean, clean enough to be disposed of in the open ocean, the most stringently regulated disposal process that dredge material can meet. There will be some sediment created but the effects of that are limited by our adherence to strict dredge or environmental windows which limit dredging to between August and January of any given year when the fish are not at risk, windows established by the fisheries protection agencies. And to offset the loss of potential winter flounder spawning habitat, we have offered millions of dollars to fund mitigation measures. These measures should offset those impacts and more.

These points cover some of the more egregious mis-statements and misrepresentations you have heard these past few weeks. Among others I could cover are the claims that real estate values will drop, airports close when LNG tankers sail by, that biker paths on Mount Hope Bridge will create as many jobs as a \$700 million terminal, that harbor seals will be threatened, that we are violating federal law, that there are active geological faults in the Bay we haven't accounted for, that most of the US terminals are in the Houston Ship Channel, that the Coast Guard won't provide security, but Blackwater will. All of these are false, and I encourage you to request that the witnesses making these statements provide the documentation to back up all their claims. I suspect you will be waiting a long time to receive it.

Mr. Chairman, as you yourself observed, the only other Bay in the US with the same types of values as Narragansett Bay is the Chesapeake Bay. I won't debate that issue, but I will observe that for four decades there has been an operating LNG terminal in the Chesapeake Bay, with an offshore berth, and cryogenic unloading lines buried in a tunnel under the Bay. For those four decades the recreational values and life on the Chesapeake has continued with little problem. There is no reason to think the same would not be true in Narragansett Bay.