STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

IN RE: REVIEW OF AMENDED POWER PURCHASE AGREEMENT BETWEEN NARRAGANSETT ELECTRIC COMPANY D/B/A NATIONAL GRID AND DEEPWATER WIND BLOCK ISLAND, LLC PURSUANT TO R.I. GEN.LAWS § 39-26.1-7

DOCKET NO. 4185

PRFILED TESTIMONY

OF

MARK B. LIVELY
UTILITY ECONOMIC ENGINEERS

FOR

OCEAN STATE POLICY RESEARCH INSTITUTE
AND THE FOUNDERS PROJECT

2010 JULY 20

Q. What is your name and business address?

A. My name is Mark B. Lively. My business address is Utility Economic Engineers, 19012 High Point Dr., Gaithersburg, MD 20879.

Q. On whose behalf are you presenting testimony in this proceeding?

A. I am presenting testimony on behalf of Ocean State Policy Research Institute and The Founders Project (OSPRI).

SUMMARY

Q. What areas of this proceeding did OSPRI ask you to review?

A. OSPRI asked me to review the effect of the contract on economic development in Rhode Island. As part of that review I also looked at the economic development effect of the price adjustment clause.

Q. What did you find as a result of your analysis?

A. I found that the contract would have a long term deleterious effect on economic development in Rhode Island. I also found that the price adjustment clause is ineffectual.

Q. What are the implications of your findings on whether the Commission should accept the contract as filed on June 30?

A. The Commission should not accept the contract as filed. It may be a matter of opinion as to whether the long term deleterious economic development effects of

the contract outweigh any purported short term benefits, but it is clear that the contract does not meet the requirements of the legislation in regard to having "provisions that provide for a decrease in pricing if savings can be achieved in the actual cost of the project." Thus, on a procedural ground the Commission should rule that that contract does not meet the adjustment clause requirements of the legislation without having to rule on whether the long term deleterious economic development effects of the contract outweigh any purported short term benefits.

PURPOSE

Q. What is the purpose of your testimony in this proceeding?

A. As is stated in "Filing Of Ocean State Policy Research Institute In Regard To The Commission's Requirement For The Identification Of Witnesses, The Supply Of CVs, And The Provision Of A Short Statement Of The Scope And Subject Of The Witness' Testimony, Referring To The Portion Of The Law To Which The Testimony Applies" (which I hereafter refer to as "OSPRI Identification of Witnesses",) I am testifying

> that the amended agreement is likely to stifle long term economic development in the State of Rhode Island, including a stifling of new and existing business expansion. The amended agreement will lead to an overall job erosion in the whole State of Rhode Island that will more than offset any local benefits that might be associated with the Quonset Business Park or the training of the Rhode Island workforce in regard to its support of renewable energy projects.

As is also stated in the "OSPRI Identification of Witnesses" my testimony is based on

> the excessive cost of the amended agreement relative to other sources of power that are available to Narragansett Electric Company and the effect that such excessive cost will have on the Rhode Island economy, taking out of the economy money that would otherwise be able to provide economic development benefits in the future. The excessive cost of the amended agreement will take money out of the economy causing a loss of jobs in the future that will be much greater than any transitory job creation that might occur as the result of building the Block Island project.

EXPERIENCE

Q. What is your experience in the utility industry?

A. I have worked continuously with the utility industry since 1971. After I got a masters degree that spring from the Massachusetts Institute of Technology, I began work with American Electric Power Service Corporation (AEPSC) in New York City. AEPSC is the management and engineering branch of American Electric Power Company, Inc., (AEP) a utility holding company. I spent five years with AEPSC working in both the controller's office and then the rate department. However, my actual work experience with utilities included a summer job two years earlier during the summer of 1969 for the AEP affiliate Kentucky Power Company.

Starting in 1976, I spent over fifteen years as a consultant with the Ernst & Ernst Washington Utility Group. Ernst & Ernst was succeeded by Ernst & Whinney in

1979 and Ernst & Young in 1989. At Ernst I worked on utility rate cases and negotiating purchased power agreements similar to the "Amended Power Purchase Agreement Between Narragansett Electric Company D/B/A National Grid And Deepwater Wind Block Island, LLC" which is the subject of this docket. My work on such purchased power agreements led to the development of the Committed Unit Basis (CUB) as the standard against which utilities gauged the reasonableness of the prices in such purchased power agreements. The Texas Public Utilities Commission adopted CUB by name in its regulation of utility contracts for buying electricity from Qualifying Facilities under PURPA.

Since 1992 I have been self employed. For the last eighteen years I have continued to work on utility rate cases and have analyzed purchase agreements. For instance, in 1996 I analyzed the merger agreement between Potomac Electric Power Company (PEPCo) and Baltimore Gas & Electric Company (BG&E) for the Office of People's Counsel of the District of Columbia. The District of Columbia Public Service Commission (DC PSC) referred to me and my pre-filed testimony approximately forty times in its decision that the applicants had overstated the cost and understated the savings associated with the contract to merge the two utilities. The rate reduction ordered by the DC PSC based on my analysis appeared to be a significant factor in PEPCo and BG&E calling off the merger.

I am a registered professional engineer in the District of Columbia. My utility experience is shown in my resume which is part of the document "OSPRI Identification of Witnesses."

EDUCATION

Q. What is your educational background?

A. In 1969 I was awarded a Bachelors of Science in Electrical Engineering from the Massachusetts Institute of Technology. In 1971 I was awarded a Masters of Science in Management from the Sloan School of the Massachusetts Institute of Technology. Since then I have been a guest lecturer or have led seminars for Universidad Simon Bolivar (USB, Simon Bolivar University in English) in Caracas, Venezuela (2001): Sultan Qaboos University in Muscat, Oman (2003); Carnegie Mellon University (2004); Oklahoma State University (2006); New Zealand Center for Advanced Engineering of Canterbury University (2006); the School for Advanced International Studies of Johns Hopkins University (2009); and the University of Maryland (2009 and 2010). This educational background is shown in my resume which is part of document "OSPRI Identification of Witnesses."

CONTRACT STATUTORY NON-COMPLIANCE
RE THE STIFLING OF ECONOMIC DEVELOPMENT AND JOB EROSION

Q. Why do you believe that "the amended agreement is likely to stifle long term economic development in the State of Rhode Island, including a stifling of new and existing business expansion?"

A. The amended agreement will unnecessarily increase the prices that must be paid by the customers of National Grid. This increase in prices will take money out of the Rhode Island economy. The money that leaves the Rhode Island economy on an unwarranted basis will decrease the money available to the economy to finance payrolls. This will result in fewer jobs in Rhode Island than might otherwise be the case. As was stated in the document "OSPRI Identification of Witnesses,"

> The amended agreement will lead to an overall job erosion in the whole State of Rhode Island that will more than offset any local benefits that might be associated with the Quonset Business Park or the training of the Rhode Island workforce in regard to its support of renewable energy projects.

This job erosion issue has been a great concern to the organizations with which I have worked for the last thirty-nine years and has been the topic in my classes, both when I was a student at the Massachusetts Institute of Technology and when I have led classes at other universities.

Q. What professional experience do you have that is relevant to the issues that are being addressed in this proceeding?

A. This proceeding deals with utility economics and the effects that utility pricing will have on its customers. I have dealt with such issues during my entire career in the utility industry. These issues were of concern with my first job in the industry in 1969 with Kentucky Power Company; continued while I worked for Kentucky Power Company's affiliate AEPSC; were issues for my clients at Ernst; and continued as I developed my own consulting practice under the title Utility Economic Engineers.

Q. How did the issue of job erosion due to excessively high prices affect your work at Kentucky Power in 1969?

A. For my first job in the utility industry in the summer of 1969 I was in the customer service department interacting with commercial and industrial customers. These customers were concerned about their electric bills and how to reduce those bills. Some of my work that summer included helping commercial and industrial customers investigate installing equipment that improved the efficiency with which the customers used electricity. The Kentucky Power customers with whom I worked were concerned about their costs which affected their ability to compete in the various markets in which they sold their products. When the customer input prices went up, such as for electricity, the customers were less able to produce competitively priced goods.

My job as a utility employee that summer was to help Kentucky Power's commercial and industrial customers achieve that cost reduction even though achieving that cost reduction often meant less revenue for the utility. Kentucky

Power, as an AEP utility, was very concerned about having the lowest possible rates and about getting customers on the rate schedule that was most appropriate for the customer's consumption pattern. Even forty years ago Kentucky Power and the other AEP utilities were concerned about the job growth that was associated with having competitive electric rates and with the job extinctions that occurred when electricity rates were too high to be competitive.

I remember working with one customer who had installed a water system to improve its air conditioning system, similar to the groundwater heat pump concept used to increase the efficiency of air conditioners today. We also helped several customers with the installation of capacitors. Capacitors supply the reactive power that can support the voltage experienced by a customer. The AEP commercial and industrial tariffs had reactive power charges. Thus, by installing the capacitors the customers reduced their reactive power charges and the revenue received by Kentucky Power. This cost reduction helped the customers remain competitive in their own markets.

Q. How did the issue of job erosion due to excessively high prices affect your work at AEP in the early 1970s?

A. The AEP companies served a patchwork of rural areas and towns. While I was there, the largest communities were cities like Fort Wayne, Indiana; Canton, Ohio; and Charleston, West Virginia. The patchwork of areas meant that a large portion of our distribution area was within a few miles of the distribution area of another utility, often a rural electric cooperative or a municipality. AEP competed

with these other utilities to get new homes and businesses to be located on our lines instead of a few miles away on the lines of a competitor. We had to keep our prices low in order to attract the new customers who wanted to build a new home or a new business. Without those low prices, AEP would not have had jobs for its employees in the distribution business, the transmission business, and the generation business.

The patchwork further meant that AEP was interconnected with many other utilities, most of which occasionally bought power at wholesale under FERC tariffs from AEP. Without reasonable prices, AEP would not have been able to make those wholesale transactions and would not have been able to provide the employment in its power plants. So, in the controller's office I worked on projects to reduce the costs incurred by AEP. In the rate department, I worked on setting reasonable prices that were kept low by negotiating cost effective contracts with the AEP suppliers.

Q. How did the issue of job erosion due to excessively high prices affect your work at Ernst in the 1980s?

A. Off and on for my first six years at Ernst, I was a consultant to Reynolds Metals Company in regard to the prices it paid Arkansas Power & Light (AP&L). During that time AP&L had four retail rate cases. I prepared pre-filed testimony in a few of them. In one proceeding, my work reduced the annual bill paid by Reynolds by $4 million. In another proceeding, the annual effect for Reynolds was about $5 million, and many other customers saw comparable savings relative to the

size of their annual bill. For the fifth rate case in this series, AP&L hired Ernst to perform a special study with the stipulation that I couldn't testify for Reynolds. Not long after the fifth rate case was concluded, Reynolds announced that it was closing the facility in Arkansas, costing the state many jobs.

Q. How did the issue of job erosion due to excessively high prices affect your work since you have been self employed?

A. Since I have been self employed, I have again seen the issue of high electricity prices causing job erosion in regard to the aluminum industry. Most people know about the California electricity debacle of 2000/2001, where prices soared. As the crisis was winding down, I was asked to lead a three-day program on electricity restructuring at Universidad Simon Bolivar (USB) in Caracas, Venezuela, with about 50 students. Most of the students already worked in the utility industry and were members of IEEE Venezuela. During the discussions, students brought up how the California electricity debacle increased electricity prices in Venezuela.

I was quite skeptical of their contention that linked electricity pricing in Venezuela to the California crisis because of the lack of electrical connection between California and South America. My students explained that the high prices in California spread to bulk consumers in the US Pacific Northwest and Western Canada. The aluminum smelters were particularly affected. Several aluminum smelters shut down, laying off employees. The aluminum smelter shutdown reduced the world supply of aluminum. The reduced world supply of aluminum

raised the world price of aluminum ingots, which raised the price of electricity in Venezuela.

My students explained that the aluminum smelters in Venezuela had net back pricing arrangements with the electric company. Under net back pricing, product prices affect input prices. Net back pricing contrasts sharply with most other pricing schemes. In most pricing schemes the input prices affect the product prices. In the case of an aluminum smelter, the product is aluminum ingots and the input is electricity. Thus, under netback prices, as they existed in Venezuela, higher ingot prices increased the price of electricity.

Though I was told the story in the context of electricity prices, part of the collateral damage of higher prices was a decline in the number of workers in the US and Canadian aluminum industry. In the same way, an unnecessary increase in the cost of electricity delivered by National Grid can have a result of exporting jobs. The increase in electricity cost associated with the contract in this docket may not be exporting jobs to Venezuela, as was the case with the aluminum jobs, but maybe an exporting of jobs to other states, whether in New England or elsewhere in the US. I am reminded of my surprise when Sigma Xi, the Scientific Research Society, of which I am a member, moved from New England to North Carolina, taking with it several highly skilled jobs.

Q. Do you have an estimate of the number of jobs that might be lost to Rhode Island as a result of the implementation of this contract?

A. No. I have not made such an estimate. The most accurate way to estimate such job losses would be to determine how marginal each employer is in regard to electricity. There are many such massive studies of the employment effect of money being taken out of the economy for the dead weight cost imposed on local economies. Many such studies relate to local tax issues. Some such studies relate to electricity price increases. All are beyond the scope of my testimony in this proceeding.

My previous examples of job losses dues to increases in the cost of electricity dealt with aluminum smelters, which live and die on their cost of electricity. A more general approach uses the average wage rate in the area to translate the dead weight cost of money being taken out of the economy into job losses. This general approach provides rough estimates of the number of jobs that might be lost as a result of dead weight costs being incurred by a society. Intervenors in this proceeding have provided some information to estimate that average wage rate.

The Petition to Intervene of Polytop Corporation states that Polytop has an annual payroll of approximately $10 million in Rhode Island and that Polytop employs about 200 people in Rhode Island. This is an average pay rate of about $50,000 per year per employee. At this rate, the effect on Rhode Island employment of any unwarranted rate increase would be about 20 people per million dollar of rate increase.

The Petition to Intervene of Toray Plastics (America), Inc, states that Toray employs about 600 people in Rhode Island and has an annual payroll and purchasing costs of $76 million in Rhode Island. This is an average pay and purchasing cost rate of about $125,000 per year per employee. At this rate, the effect on Rhode Island employment of any unwarranted rate increase would be about 8 people per million dollar of rate increase. The use of Toray data understates the effect because of the Toray calculation is based on payroll and purchasing costs, not just payroll costs.

The estimated factors for the number of jobs lost per million dollar of dead weight electricity cost increase should be considered to be a rough order of magnitude, since there is an uncertain multiplicative effect. The multiplicative effect could make the factor two or three times larger, moving the estimates to 24 to 60 jobs per million of dead weight electricity cost increase, or a half or a third as much. The multiplicative effects reflect the ripple effect that a job will have as that employee spends money in the local economy.

Part of the calculation of the effect a dead weight rate increase will have on the job market includes the necessity for employers to make investments in plant and equipment used by those employees. For instance, Petition to Intervene of Toray Plastics (America), Inc, states that Toray has invested $750 million in North Kingston since 1985. For its 600 employees, that is an investment of over one million dollars per permanent employee. In contrast, a similar absolute investment in the Deepwater Wind Block Island project will produce only eight (8)

full time employees, many fewer employees than the number of jobs likely to be lost as a result of the deadweight cost of paying for the revised contract.

Q. Why do you describe the effect on the prices of National Grid as unnecessary?

A. I see no need for National Grid to enter into a power supply contract to buy electricity which results in an increase in the prices charged by National Grid. The new legislation makes the amended contract provisional based on the effect it might have on economic development in Rhode Island. Since the amended contract will have a negative effect on economic development in Rhode Island, the increase in the price of National Grid is unnecessary. Further, as I mentioned previously and as I show below, the amended contract does not meet the absolute requirement of the new legislation that customers share in any cost reduction that might occur in the construction of the project. Thus, any increase in the prices of National Grid as the result of this contract is unnecessary.

During the 1980s I had many engagements that dealt with the federal Public Utilities Regulatory Policies Act (PURPA) of 1978. One of the primary features of PURPA and the regulations implementing PURPA was the concept of Avoided Cost. Under PURPA, utilities were required to buy electricity from Qualifying Facilities. Qualifying facilities included renewable energy projects such as the Deepwater Wind Block Island project. PURPA required the local utility to buy the output of the Qualifying Facility at the utility's avoided cost. By setting the purchase price at avoided cost, PURPA kept such purchases from increasing the

prices paid by consumers. That the subject power supply contract substantially increases the rates paid by the National Grid consumers convinces me that the prices in the contract are too high, at least relative to avoided cost.

Typically Avoided Cost meant the cost the utility would have incurred but for the presence of the electricity from the Qualifying Facility. Since National Grid is part of the highly organized market operated by ISO New England, the cost of electricity sold in the ISO New England market provides a gauge in determining avoided cost for the contract in this docket. Others have pointed out that paying for the electricity under this contract will increase the cost of the electricity sold by National Grid. This anticipated increase in the cost of electricity sold by National Grid tells me that the price in the contract is significantly above avoided costs.

CONTRACT STATUTORY NON-COMPLIANCE RE REQUIREMENT TO SHARE PROJECT COST SAVINGS WITH CUSTOMERS

Q. Are the customers of National Grid protected by the contract "provisions that provide for a decrease in pricing if savings can be achieved in the actual cost of the project?"

A. No. The contract severely limits the ability of the Verification Agent to determine the savings achieved in the actual cost of the project. The contract allows the Verification Agent to disallow costs only if the seller did not incur the cost, does not provide documentation, or had arithmetic errors in the calculation. The Verification Agent cannot disallow costs because of inadequate

documentation, because the cost was paid to an affiliate, or because the cost was paid for work done on behalf of an affiliate. Thus, the contract does not seem to provide the protection that was specified in section (c) (ii) of the new law.

CONCLUSIONS

Q. Should the commission approve the contract as the contract has been proposed in this proceeding?

A. No. The contract is not in compliance with the terms of the enabling legislation for at least two reasons. First, the contract will unnecessarily cause the rates of National Grid to increase, thus stifling economic development instead of promoting economic development as is required by the legislation. Second, the contract does not have an adequate mechanism to ensure that construction cost savings are shared with National Grid consumers through lower rates.