

RHODE ISLAND PUBLIC UTILITIES COMMISSION

IN RE: REVIEW OF AMENDED POWER :  
PURCHASE AGREEMENT BETWEEN : DOCKET NO. 4185  
NARRAGANSETT ELECTRIC COMPANY :  
D/B/A NATIONAL GRID AND DEEPWATER :  
WIND BLOCK ISLAND, LLC PURSUANT TO :  
R.I. GEN. LAWS § 39-26.1-7 :

Addendum to Attorney General Patrick C. Lynch's Response to  
Deepwater Wind Data Request 1-3

Certain documents were forwarded by the Attorney General in connection with the email version of the set of data request responses furnished by the Attorney General in response to Deepwater Wind Data Request 1-3.

The three documents (dated June 11, 2009, June 12 2009, and April 10, 2010) are provided herewith to complete the official paper filing.

RESPECTFULLY SUBMITTED  
INTERVENOR,

PATRICK C. LYNCH  
ATTORNEY GENERAL

By his Attorney,



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**1**

# **Presentation To FERC Commissioner Philip Moeller**

Lisa Linowes and William P. Short III  
June 11, 2009

- We identified serious public policy flaws in our country's energy policy toward renewable energy legislation and regulation;

- We are here to help explain these flaws;

- We are here to suggest ways to address the issues and ensure better policy for our citizens.

**Why are we here?**

- The Federal Production Tax Credit (PTC) does not differentiate between where/when renewable energy is produced.
- Ditto for State and possible Federal Renewable Portfolio Standards (RPS).

**What are the flaws?**

- Prices paid non-renewable generators reflect the power plant location and time of day production.
- The result: non-renewable generators sited closest to load, produce when load needs the power the most.

## **Public Policy in a Deregulated Market...**

- Current PTC after-tax value of \$21/MWh or \$31/MWh on a pre-tax basis;
- State RPS Credits valued up to \$61/MWh;
- All-in wholesale power price ranges \$40-50/MWh.

**... applied to renewables.**

- Renewables incentives 2x revenues received from electricity markets.
- Renewable projects encouraged to site where they produce lowest utility to consumers.
- Resulting consumer costs:
  - x new transmission lines;
  - x back-up generation;
  - x storage projects.

**Where is it headed?**

Adjust incentives toward renewables using criteria of the deregulated power industry to encourage proper siting and operation of generation assets.

**A better approach ... Yes!**

- Renewable generators located near load;
- Renewable generators that generate on-peak;
- Renewable generators that generate on-season;
- Taxpayers, Consumers and Ratepayers.

**Who Benefits?**

- Utility companies promoting significant transmission expansion to accommodate remote-sited renewables;
- Renewable generators promoting projects with large percentages of off-season, off-peak generation, located far from load.

**Who Loses?**

- Study the issue from within FERC and prepare a report on its internal findings;
- Convene regional conferences on the topic, soliciting comments on what adjustments should be made and how to quantify those adjustments;
- Issue a report on the subject to Congress and the Department of Energy.

**What can FERC do?**

**Comments?**

**Criticisms?**

2

# **Presentation To FERC Chairman Jon Wellinghoff**

Lisa Linowes and William P. Short III  
June 12, 2009

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3

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

Integration of Variable Energy Resources

Docket No. RM10-11-000

**COMMENTS OF WILLIAM P. SHORT III AND LISA LINOWES**

William P. Short III<sup>1</sup> and Lisa Linowes<sup>2</sup> respectfully submit these comments<sup>3</sup> to the Commission in response to its January 21, 2010 Notice of Inquiry regarding Integration of Variable Energy Resources.

**I. EXECUTIVE SUMMARY**

The true impact of our current national renewable vision is the massive public cost needed to transform our power grid to accommodate variable energy resources, despite the fact that these resources are not guaranteed to deliver energy at the very time of day and year when we need it the most. The unpredictability of variable energy resources will become more problematic as the country aims to deliver increasing amounts of remotely-sited generation to population centers on the East and West Coasts. While public policy regarding renewables has helped the emerging renewables market, it is time these policies were amended to better suit the public's needs. We respectfully ask that the Commission not adopt more lenient rules governing the integration of variable energy resources. Instead, we encourage proposals that adjust the

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<sup>1</sup> Mr. Short is an independent consultant with a practice that specializes in renewable energy in the New England states. Among his clients are wind, solar, hydroelectric and biomass generators.

<sup>2</sup> Ms. Linowes is the Executive Director of the Industrial Wind Action Group, an advocacy group focused on the impacts and costs of deploying large-scale wind generation.

<sup>3</sup> The viewpoints of Mr. Short and Ms. Linowes are solely theirs and are not necessarily the viewpoints of their clients.

non-energy market signals to all renewable generation in order to incent renewable generation to build closer to load, be capacity resources, operate on-peak and on-season and discourage the opposite behavior.

## **II. BACKGROUND**

As of May 2009, twenty-nine States and the District of Columbia have implemented renewable portfolio standards (“RPS”) policies to encourage the generation of renewable electricity. Most of these policies are mandatory, calling for aggressive development of renewable generators within this decade. These policies, coupled with the federal production tax credit (in place since 1992), generous tax depreciation schemes, and now the ARRA stimulus programs (for 2009 and 2010 projects only), have led to an explosion of renewable resources that operate largely off-peak, off-season and intermittently, and are located in rural areas with limited transmission. Conversely, there has been only limited development of renewable generation which operates largely on-peak, on-season, reliably or near load centers.

By the end of 2009, 35,000 megawatts of on-shore wind have been installed in the United States, double that which was installed just two years ago. Barring systemic barriers imposed on renewables development, including transmission constraints, this trend is likely to continue. Based on the interconnection queues of each grid region, industrial wind is the dominant renewable resource representing more than 90% of the proposed generating capacity of all renewable energy projects in the United States.

### III. DISCUSSION

Several recent reports released by the Department of Energy (“DOE”) and the National Renewable Energy Lab (“NREL”) highlight the opportunity for wind energy development in the country and attempt to describe scenarios in which wind can achieve up to 20% penetration. The first of these planning reports was the DOE study entitled “20% Wind Power By 2030”<sup>4</sup>. This 2008 study envisioned the United States satisfying 20% of its electricity needs through wind power. In February 2009, the “Joint Coordinated System Plan 2008”<sup>5</sup> (“JCSP”) proffered a conceptual regional transmission and generation system plan to meet 20% of the Eastern region of the United States’ energy needs solely with wind. And in January of this year, NREL released its “Eastern Wind Integration and Transmission Study”<sup>6</sup> (“EWITS”), which evaluated the feasibility and cost of implementing high-penetration wind scenarios to service portions of electric load located in the Eastern Interconnection.

The DOE report called for the deployment of 305,000 megawatts of wind by the year 2030. The JCSP and EWITS assumed over 220,000 megawatts of new wind capacity built by 2024. Each report also detailed a need to build tens of thousands of miles of new transmission lines to deliver the energy from the Midwest to points in the East (and West).

Despite these efforts, skeptics remained. Many dismissed the studies as “academic” and unrealistic. Others openly referred to the studies as nothing more than wind advocacy plans, while others stepped back from endorsing them. For example, both ISO New England and New York ISO withdrew from the JCSP plan.<sup>7</sup> Ian Bowles, Secretary of Energy and Environmental

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<sup>4</sup> Available on-line at: <http://www1.eere.energy.gov/windandhydro/pdfs/41869.pdf>.

<sup>5</sup> Available on-line at: <http://www.jcspstudy.org/>.

<sup>6</sup> Available on-line at: <http://www.nrel.gov/wind/systemsintegration/ewits.html>.

<sup>7</sup> See [http://www.nyiso.com/public/webdocs/services/planning/jcsp/2009\\_2\\_4\\_JCSP\\_Letter\\_FINAL.pdf](http://www.nyiso.com/public/webdocs/services/planning/jcsp/2009_2_4_JCSP_Letter_FINAL.pdf).

Affairs for Massachusetts, published an editorial in The New York Times<sup>8</sup> where he discouraged a “national grid system” for renewable energy, arguing for a better, lower cost option.

Achieving widespread adoption of renewable energy is not as easy as the popular catch phrases “25 x 2025” and “20% by 2030” would have us believe. Nor will it be cheap.

Last fall, the New York Public Service Commission (“NY PSC”) took an important first step toward understanding whether enormous new transmission deployment in New York to deliver renewable energy was warranted. In its October 20 order,<sup>9</sup> the NY PSC acknowledged that, of the nearly 1,300 megawatts of wind energy installed in New York, the majority of the development

*“occurred in a very small area(s) geographically and depended on the same bulk electric facilities to move the wind energy toward loads. These same facilities carry significant amounts of energy produced by hydro and combined cycle plants. RPS goals for New York target 25% of energy consumed to be from renewable sources by 2013. This goal will not be realizable if the energy from new renewable resources just replaces the energy produced by existing renewable resources.”*<sup>10</sup> [Emphasis added]

New York's transmission policy is based on a FERC-approved Standard Market Design (“SMD”). This policy uses energy market prices to discourage power plants from being built long distances from New York City, whose citizens and businesses are the largest consumers of electricity in New York State. The figure below highlights the success of New York's implementation of SMD. It shows that 80% of the new generation installed in the state since 2000 was located in the Hudson River Valley, suburban New York City (including Long Island) or New York City proper. If one subtracts the wind generation out of this slide, over 96% of this

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<sup>8</sup> Ian Bowles, Op-Ed., *Home-Grown Power*, N.Y. Times, Mar. 6, 2009, available on-line at: [http://www.nytimes.com/2009/03/07/opinion/07bowles.html?\\_r=1](http://www.nytimes.com/2009/03/07/opinion/07bowles.html?_r=1).

<sup>9</sup> Order Prescribing Study Methodology, *In the Matter of Generator-Specific Energy Deliverability Study Methodology*, NY PSC CASE 09-E-0497 (Oct. 20, 2009) (“NY PSC Order”). Available on-line at: <http://documents.dps.state.ny.us/public/Common/ViewDoc.aspx?DocRefId=%7B973392F1-C3D9-4198-98D7-93E640AA42DD%7D>.

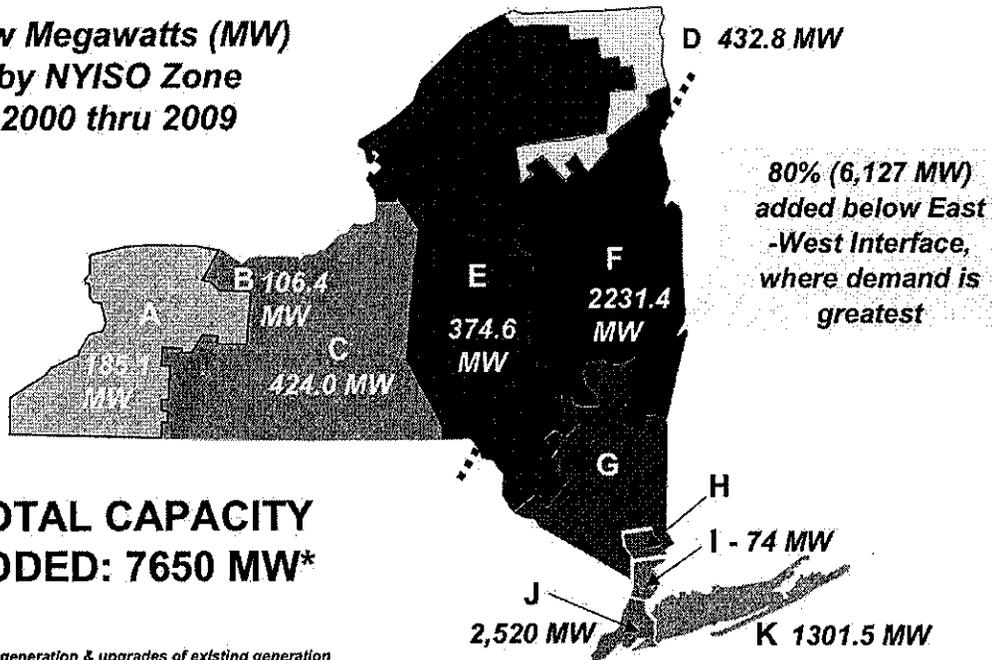
<sup>10</sup> NY PSC Order at p. 6.

generation was built near load. Conversely, nearly all of New York State's renewable generation was built behind constrained transmission interfaces. Consequently, these renewable generators have minimal value for reliability even if they were not intermittent.



# New Generation

**New Megawatts (MW)  
by NYISO Zone  
2000 thru 2009**



**TOTAL CAPACITY  
ADDED: 7650 MW\***

\* Includes new generation & upgrades of existing generation developed by both public power and private companies

State and federal subsidies, which encourage renewable resources regardless of where they are located or when they generate, run counter to SMD. Generous governmental subsidies are skewing the market such that on-shore wind energy facilities can afford to be located in remote areas despite the locational price penalties of SMD. In addition, public policies found in Texas, New York and other regions, which permit negative energy pricing, have little effect on the situation. The result? Rather than trying to keep the deployment of transmission to a

minimum, renewable energy facilities are fueling the race to build thousands of miles of new transmission capacity where none was needed before. New power lines are now proposed nationwide with costs forecasted well into the tens of billions of dollars.

Only a few years ago, electric energy policy was focused on servicing the power needs of the region with the most reliable, least cost generation. Energy pricing for over a decade dissuaded generators from building their plants long distances from load centers, thereby reducing the pressure to build costly transmission. Projects able to meet our peak demand requirements assured us that we were not building redundant, backup energy sources beyond what was necessary to cover reserve requirements. This coupled with the air, water and other environmental rules led to our energy resources becoming progressively cleaner, safer, more efficient and with a smaller footprint.

In just a few short years, there has been a dramatic shift in thinking in energy policy as regulators and the public raised concern about the levels of greenhouse gases in the atmosphere. Many states adopted renewable energy legislation with the intent of lowering greenhouse gas emissions levels.

RPS programs have set arbitrary goals for megawatts of new renewables which were predicated on the assumption that increased renewable generation would reduce fossil fuel, and consequently, reduce greenhouse gas emissions. A very simple metric was implemented -- one megawatt-hour of energy equaled one renewable energy certificate, regardless of where and when the generation was located.

In the rush to shift the country's energy supply to renewables, basic planning concepts have been brushed aside. Policy makers charged with regulation and siting decisions are under tremendous pressure to get renewable projects and needed transmission approved. Policies,

rules, and regulations are now in effect which, if left unchallenged, will result in the massive and costly build out of variable energy resources located hundreds of miles from load.

In his comments to Congress regarding a national RPS,<sup>11</sup> Dr. Jay Apt of Carnegie Mellon University argued,

*“Mandating technologies can be much more expensive than mandating performance, by capping emissions at a level that declines over time or by requiring that no more than a given amount of CO2 be emitted for every kilowatt-hour produced. Renewables portfolio standards unnecessarily increase costs (and often leave out efficiency and demand-side response) in an attempt to eliminate the use of uranium, coal, natural gas, and large hydroelectric power. What is needed instead is a direct performance standard that lowers the limits on emissions of CO2 in a predictable fashion over the next few decades to very low levels.”*<sup>12</sup>

Specific to variable energy resources, Dr. Apt stated:

*“Even in good areas, the wind doesn't blow all the time. Looking at all the wind power plants in Texas in 2008, we find that in a quarter of the hours during the year Texas wind production was less than 10% of its rated capacity. That means that when a wind farm is built, some other power source of the same size must be built to provide power during those calm hours. Our research shows that natural gas turbines, that are often used to provide this fill-in power, produce more CO2 and much more nitrous oxide (as they quickly spin up and then slow down to counter the variability of wind) than they do when they are run steadily.*

*“The point is that wind and solar can lower the amount of fossil fuels used for generation, but they don't lessen the need for spending money on always-available generation capacity, nor do we get all the air emissions benefits we once expected. For new generators, the capital cost is the vast majority of new costs and so the savings by having free fuel from the wind or sun are small.”*<sup>13</sup>

Current federal public policy has shifted the focus away from a primary goal, *i.e.* to service our power needs with the most reliable, least cost generation that is low emission.

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<sup>11</sup> See Panel on Low Carbon Electricity, Carbon Capture and Storage, Renewables and Grid Modernization: Hearing on The American Clean Energy Security Act of 2009 Before the H. Comm. on Energy and Commerce Subcommittee on Energy and Environment (Apr. 23, 2009) (statement of Dr. Jay Apt, Distinguished Service Professor of Engineering & Public Policy and Associate Research Professor, Tepper School of Business Carnegie Mellon University). Available on-line at: [http://energycommerce.house.gov/Press\\_111/20090423/testimony\\_apt.pdf](http://energycommerce.house.gov/Press_111/20090423/testimony_apt.pdf).

<sup>12</sup> *Id.* at p. 3.

<sup>13</sup> *Id.*

Instead, policies biased in favor of preferred technologies like on-shore wind and solar are discouraging new energy options and ideas.

#### IV. CONCLUSION

The true impact of our current national renewable vision is the massive public cost needed to transform our power grid to accommodate variable energy resources, despite the fact that these resources are not guaranteed to deliver energy at the very time of day and year when we need it the most.

The unpredictability of variable energy resources will become more problematic<sup>14</sup> as the country aims to deliver more remotely-sited generation to population centers on the East and West Coasts. The DOE and state regulatory bodies have argued that geographically dispersing renewable projects nationwide will help to dampen the broad swings in available energy, but this provides no assurances that the energy will be where or when we need it the most.

It is well established that the traditional power market responds to energy and capacity market signals. However, current policies that encourage renewable generation at the State and Federal levels reward all renewables equally for placing a megawatt-hour of energy on the grid. There is no adjustment to the federal or state subsidies based on time of day or seasonal demand requirements nor is there a meaningful adjustment for location of the power facility.<sup>15</sup> These policies have created artificial and unsustainable market pressures; thus, compelling system planners to respond with more transmission and the fast-tracking of renewable projects that may be not only not needed but actually of poor quality from a grid reliability perspective.

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<sup>14</sup> Jeffrey Ball, *Unbridled energy: Predicting volatile wind, sun*, Wall St. J., Oct. 2, 2009, available on-line at: <http://www.windaction.org/news/23403>.

<sup>15</sup> For example, most state RPS programs require the renewable energy from the generator to be imported into the control area where the state is located; however, no adjustment is made for transformer or line losses.

If renewable subsidies were to discriminate in favor of those renewables that produce close to load and during the time of day and year when the energy is most needed (i.e. capacity rather than energy), we would expect the response in the market to be almost immediate. The need for expansive transmission would drop off. More renewables would be proposed for sites closer to our population centers and that can service our peak demand periods. The market would decide which renewable solutions best met the goal. Rather than seeing 125 megawatts of unpredictable wind built we might get 25 megawatts of baseload biomass; rather than remote-sited solar generation in the Mojave desert requiring 100 to 200 miles of new transmission, we may see a greater effort to build rooftop solar in California's cities. Reliable generation would mean less need for storage, less redundant generation and a better opportunity for *replacing* fossil fuel generation with renewables rather than merely displacing some fuel.

While public policy regarding renewables has helped the emerging renewables market, it is time these policies were amended to better suit the public's needs. We recommend abandoning ill-defined plans to reinvent our existing electric system so it can better accommodate variable energy renewable sources, and focus on consumer-centric, market-based policies that will move us towards real world, reliable solutions for our renewable generation.

We respectfully ask that the Commission not adopt more lenient rules governing the integration of variable energy resources. Instead, we ask that the Commission request ISO/RTOs to prepare proposals that adjust the non-energy market signals to all renewable generation. These proposals would be designed to incent renewable generation to build closer to load, be capacity resources, operate on-peak and on-season and discourage the opposite behavior. Upon the receipt of these proposals, the Commission would prepare a report to Congress, the DOE and the various state regulatory commissions on the Commission's findings and recommendations.

We thank that the Commission for this inquiry. It is an opportunity to shed a bright light on whether the public policies now in place should be modified to encourage variable energy resources that will deliver results that best serve the renewable energy needs of America.

Respectfully submitted,

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