

**RHODE ISLAND OFFSHORE WIND STAKEHOLDERS
FINAL REPORT**

February 2008

**Prepared for
Rhode Island Governor Carcieri
and the
Rhode Island Office of Energy Resources**



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EXECUTIVE SUMMARY

In the summer of 2007, Rhode Island Governor Carcieri invited representatives from Rhode Island communities, the state's environmental community, maritime businesses and industry, and governmental officials to participate in discussions regarding the development of a wind farm in Rhode Island area waters. A study commissioned by Rhode Island in 2006 and completed in winter of 2007 had determined that 15% or more of Rhode Island's electricity requirement could be supplied by offshore wind farms and, further, that 10 specific areas were suitable for consideration as wind farm locations.

The Stakeholder Process was a series of four meetings in August, September, and October 2007. Meeting attendees included stakeholders (defined as town and city representatives, environmental organizations, local economic development organizations, and commercial fishing interests) as well as other participants (including state government agencies, U.S. Coast Guard, area university representatives, National Grid, consultants to the RI Office of Energy Resources, and others) who contributed technical information to the process.

Stakeholders identified a set of issues that they felt could, would, or should affect the siting of offshore wind farms in Rhode Island area waters. The Office of Energy Resources' consultants then provided stakeholders with additional information to help focus and clarify the issues raised and determine, where possible, which issues were most relevant to which sites.

The Stakeholder process was successful in identifying issues that appeared to be particular to some sites and not others. There was agreement that the formal environmental impact analysis and permitting processes that will come next, if Rhode Island elects to further pursue the wind option, can be used to compare and contrast the relative merits of the alternative sites.

Overall, participants in the Stakeholder process expressed their support for the concept of using wind energy to satisfy some portion of Rhode Island's future electricity needs, their approval that the Governor and Office of Energy Resources are investigating this potential opportunity for Rhode Islanders, and their desire to continue participating in future discussions and decision making on this topic.

INTRODUCTION

In January 2006, Governor Carcieri directed Rhode Island's Office of Energy Resources to determine whether 15 percent of Rhode Island's electricity requirements could be satisfied using wind generated electricity. Today, Rhode Island's average annual demand is 1,000 megawatts, supplied mostly by conventional fossil fuel burning and nuclear power stations. Approximately 400 megawatts (in nameplate capacity) of economical utility-scale wind turbines would be necessary to achieve the 15 percent goal.

A competitive solicitation by the state resulted in the selection of a study team to carry out the investigation. Over the next year, the team, working with representatives of the Office of Energy Resources and the Rhode Island Economic Development Corporation, evaluated the Rhode Island wind energy potential looking both at onshore and offshore sites. Their report, released in April 2007 found that:

- There are sufficient economical wind resources in Rhode Island to meet Governor Carcieri's 15 percent target
- Of the total resource available, 98 percent is located offshore and 2 percent is located onshore
- The offshore areas total 98 square miles
- 78 percent of the offshore opportunity is in state waters
- The total offshore resource, if fully developed using technology available today and without any additional siting constraints, could supply as much as five times the 15 percent goal

THE STAKEHOLDER PROCESS

Recognizing the need to include a broad range of perspectives and interests in the discussion of how Rhode Island should respond to this wind opportunity, Governor Carcieri initiated a Stakeholder Process. He invited the participation of Rhode Islanders who could speak to the issues that developing this native Rhode Island energy resource raised, and this group continued to grow organically throughout the process as additional interested parties joined. A list of participants and their affiliation is attached to this report.

First Stakeholders Meeting: August 30, 2007

Forty persons attended the opening meeting of the RI Offshore Wind Stakeholders. Andrew Dzykewicz, Commissioner of the RI Office of Energy Resources, welcomed participants and established the theme for the meeting: identifying and selecting the best sites for offshore wind generation for RI, with the goal of supplying at least 15% of the electricity used in Rhode Island using wind power. Mr. Dzykewicz introduced Rhode Island Governor Carcieri.

Governor Carcieri reflected on the importance of Narragansett Bay's recreational uses to the state's residents and the state's economy. He stressed his belief that protecting the Bay is compatible with using the Bay to support RI's future economic growth. Describing this as a "watershed moment," he expressed his excitement about the prospects for developing offshore wind development as a strategy to help RI take control of its energy future. He asked for the participants' assistance in selecting wind farm sites and exploring their ramifications so that RI can move forward with using this energy resource.

Representatives of the Rhode Island Wind Energy Study team, which had analyzed RI's wind generation potential, presented their methodology, findings, and recommendations. A copy of the summary of their site ranking report, delivered to the Governor, and their August 30, 2007 presentation is attached.

The team reviewed their analytical process and conclusion that RI and its nearby waters have a technical wind generation potential of approximately 6.6 million megawatt hours per year, based on wind speeds and available sites and taking into account a variety of siting constraints. Their economic analyses found that the largest offshore projects would also be the most cost-effective to pursue, taking into account costs for equipment, installation and interconnection with the power grid, ongoing operation and maintenance, and other typical expenses. Further, based on forward analysis of future market prices for power, this wind development would appear to be able to generate power at a wholesale price competitive with conventional power sources.

ATM closed its presentation by summarizing opportunities and challenges related to wind development in RI. The greatest opportunity by far for wind development for Rhode Island is offshore (98%), driven by excellent offshore wind resources. With the price for wind generated power primarily a function of its first cost for installed equipment, RI can expect stable and predictable prices from such projects as well as the

environmental benefit of clean power generation. These projects can also create opportunities for RI businesses, further contributing to the state's economic strength.

There also are a number of challenges that must be faced as RI pursues this opportunity. If turbines were operating in Rhode Island waters today, there would be insufficient electrical transmission capacity near shore to distribute power that would be produced. Further, the cost for the wind generation and related infrastructure necessary to meet the 15 percent goal will be in the \$1 billion-plus range. Securing the necessary project financing in New England could be difficult. Delays in securing equipment should be anticipated in the face of international demand that exceeds supply. Finally, broad public support for this initiative will be necessary.

In closing the meeting, Commissioner Dzykewicz asked the group to participate in two additional meetings to identify and discuss issues related to offshore wind development and to determine which site or sites were most suitable for such development, setting the stage for initiating the permitting process by the end of 2007.

Second Stakeholders Meeting: September 20, 2007

The objective of the second Stakeholder meeting was to identify issues and concerns that would need to be addressed with respect to individual sites. In anticipation of the meeting, Office of Energy Resources consultants initiated a series of telephone interviews with individual stakeholders to begin to document specific issues and provide a basis for group discussion.

Commissioner Dzykewicz opened the meeting by clarifying the respective roles of invitees and participants in the Stakeholder Process. He differentiated between Stakeholders, representing Rhode Island's cities and towns and non-government organizations with missions giving them an interest in the siting of wind farms in Rhode Island area waters, and all other Participants, who were there as resources to support the Stakeholders in discussions and deliberations. He stated that the goal of the meeting was to agree on issues that were important to Stakeholders as they considered the proposed alternative sites for offshore wind development.

Interview responses had been organized into categories and were presented to meeting attendees for review and discussion. Additions to the list of issues were offered by participants, discussed by the group, and incorporated into the master list. Finally, the entire list was critiqued by all participants to identify those issues that the group agreed were relevant to the comparison of individual sites.

The list of issues identified by stakeholders is attached to this report.

Given the number of issues raised and the amount of information required to address them, two additional meetings were scheduled, for October 24, 2007 and October 31, 2007. These meetings would be used to present information needed to address issues and concerns raised by stakeholders and to differentiate the individual Areas identified in the study, in terms of these issues, as more or less suitable for wind project development.

Third and Fourth Stakeholders Meetings: October 24 and 31, 2007

The goal of the October meetings was to discuss the issues that had been identified by stakeholders and provide additional information and clarifications. This was also an opportunity for stakeholders to ask questions and express their thoughts and concerns about how a specific issue or set of issues might affect the viability of a potential wind farm site identified in the ATM study.

In planning for these final two meetings, the Office of Energy Resources decided that the limitations of this Stakeholder process did not lend itself to development of a definitive recommendation of a single site to be permitted, as had been originally hoped, but rather to identifying Area-specific issues and concerns which would help differentiate the relative merits of the individual Areas.

Office of Energy Resources consultant Applied Technology and Management (ATM), co-authors of the Rhode Island Wind Energy Study, presented an overview of the overall offshore wind project development process, from initial screening and feasibility analysis through construction and commissioning, to put the deliberations of the stakeholders group in a larger context.

Commissioner Dzykewicz stressed, as he had before, that ongoing stakeholder involvement in the environmental permitting process will be critical to the success of the process and that the stakeholders' interests and issues will be reflected in the scope of that process.

Specific points of discussion:

Physical characteristics of the wind farms

There was extensive dialogue about the potential size and location of groupings of turbines in the specific offshore Areas, the nature of the foundations and supports for the towers, their tolerance to 100 year storm conditions, and the potential effects of different sub-strata on tower design and installation.

Commercial shipping and cruise ship routes

Information presented by ATM showed that all of the Areas are outside the shipping lanes which are used by commercial and cruise ship traffic. The U.S. Coast Guard representatives stated that the any towers would be treated as "private aids to navigation" and be required to meet Coast Guard lighting standards and fog horn requirements. Marine wind turbine locations would ultimately be charted with other fixed obstacles on ocean charts.

Sailing regattas

While there are numbers of regattas and races held in the Bay and Sound, the only potential conflict mentioned was for *Area C* off of Point Judith.

Recreational fishing and boating

There is extensive recreational fishing and boating in the Bay, along the south coast, and around Block Island. Smaller boats tend to operate closer to shore and would be more

affected by near shore wind farms. The south side of Block Island and southwest ledge there, near **Areas J and K**, was identified as a “top fishing spot in New England.”

The possibility of deleterious effects on fishing during and after the installation of foundations is of concern to the recreational fishing and boating community, and will be studied in detail during the permitting/EIS process. A representative of the saltwater anglers did indicate however that placement of rubble around the monopoles could increase or improve fish habitat and opportunities for fishermen.

Commercial fishing

Commercial fishing interests invited to participate in the process included shell-fishermen, lobstermen, and boatmen that harvest bottom fish and other species. While shell-fisherman did not attend the meetings it was relayed from the President of the RI Shellfishermen Association that the potential areas identified in the study are outside their areas of interest which reside within Narragansett Bay Commercial fisherman expressed support for the concept of wind energy replacing conventional pollution-creating electricity generation, but also emphasized their concerns that the life-cycles of species important to the commercial fishery, as well as fishermen’s livelihoods, could be adversely affected by wind projects. Particular concerns include:

- Potential for adverse impacts on egg laying and fish food stocks during the construction process, potential disruption of ocean currents that are critical to life cycles of particular species, and how the design and placement of wind farms could affect fishing practices.
- Fishermen noted that many species transit through these areas and that there would be no benefit to creating additional ‘artificial’ bottom structures for them.
- **Areas B and F** were identified as prime fishing areas for squid and flounder and areas where squid eggs are laid and develop. In addition to squid’s value as a commercial species, it is also an important food source for other commercial species.
- **Areas J and K** are important flounder and cod fishing areas.
- Lobstermen use the entire offshore area for trapping and feared that driving monopoles into ledge on the bottom would create problems. Lobster interests were particularly concerned about the Little Compton, Middletown, and Newport waters, **Areas D and G** potentially, where lobster eggs are laid and hatch. Lobster eggs travel on the ocean currents and lobstermen asked for studies to identify any potential effects on these currents by wind farms. That said, they think it is possible for such projects to be built in the “right places” if it is done responsibly.

Rhode Island Department of Environmental Management provided maps it had prepared that incorporated information gathered from the Marine Fisheries Program concerning fishing grounds in proximity to the identified offshore Areas and integrating NOAA charts with suggested wind farm sites.

Military traffic

While no specific conflicts with military traffic were identified, there was some discussion of potential submarine traffic and torpedo testing which might be in the area. It is expected that no information about such activity would be available until such time as there is a specific proposal that would create a problem. It should be noted that areas labeled as torpedo testing on NOAA navigation charts were removed as potential sites, however these charts may not reflect a comprehensive inventory of all areas of interest of the military.

Tourism and property values

There were concerns expressed about the potential adverse impacts on tourism from near-shore wind development, particularly with respect to the south shore beaches. This is a significant economic resource for Rhode Island with tourists coming from out of state to enjoy these beaches. While tourism officials acknowledged that beauty is in the eye of the beholder and that some persons may be attracted to the views created by wind farms, wind development near the south shore raised concerns, particularly about *Area F* and *Area A* and perhaps *Area D* and *Area G*.

Lighting and other warning signals

There was discussion of the lighting that would be required by Federal Aviation Administration rules to protect aircraft against collisions with turbines. Coast Guard representatives also provided information regarding their lighting requirements. Each turbine would be permitted by the Coast Guard as a “private aid to navigation” and integrated with existing federal aids to navigation. The objective of the Coast Guard lighting requirements is to reduce confusion to traffic, and not to increase it by creating a “Coney Island effect.” Towers would not be topped with strobe lights.

In addition to specific perimeter and interior lighting requirements for visibility from ships, fog horns will be required that are audible at one half mile distance. The lighting and fog horn requirements could be perceived as an on-shore nuisance when sites are near shore; on the other hand, they likely will be welcomed by boaters as additional navigation aids.

Environmental resources, including wildlife habitats

Environmental impacts of projects proposed for specific areas will be studied extensively through the environmental permitting process. This will include a public “scoping process” to ensure that all issues that are important to the public and stakeholders are addressed in the environmental analysis. The analysis will also include an investigation and comparative assessment of alternative sites.

While there was not sufficient environmental information presented in this process to differentiate the environmental impacts of developing wind farms on the alternative locations, a few specific observations were brought forward about individual Areas. *Area A* was identified as being on a prime migration route for both raptors and song birds. *Area D* was identified as particularly important to the life cycle of harlequin ducks (which are recognized as endangered by Canada though not by the United States). In addition, the Audubon Society of Rhode Island shared a recent study completed at

University of Rhode Island that summarized the numerous sightings of marine mammals in recent years in the waters off Rhode Island.

There was additional specific discussion of research results from URI that showed considerable numbers of marine mammal sightings in Long Island Sound eastward to Rhode Island. This will be an area for future study as specific projects are considered.

Aesthetics

Views of wind farms and potential sound associated with their operation were identified as issues which could be big differentiators between certain near shore and further off shore sites. Simulations of the views of wind farms prepared by Roger Williams University students and faculty were presented. They showed Areas E and H (as seen from Sakonnet Point in Little Compton) and Areas J and K (as seen from Black Rock on the southwest shore of Block Island). Vantage points were selected to provide representative views of the scale of turbines.

“Expectation of remoteness” was a concept raised to describe how certain locations might feel inappropriate for nearby large-scale wind development. Tourism officials spoke to the need for sensitivity to the landscape values that brought visitors to South County beaches. Another observation was that changes to typically visible wildlife behaviors (e.g. whales sounding) caused by the presence of turbines would be another visual impact. There was agreement that there would be fewer objections where farms were sited a greater distance from shore.

Interconnections to the utility grid

Costs for utility interconnection from individual Areas were included in pro-formas prepared for each Area, but interconnection issues could represent another differentiator between sites when specific proposals are made for needed onshore infrastructure improvements. Certain routes may be more difficult than others to secure permits for. Buried and pole-mounted transmission cable options will need to be explored. Capacity limitations of equipment at landing spots will need to be matched with anticipated production by wind farms. At the same time, National Grid noted that South County is experiencing the highest demand growth, perhaps arguing an additional benefit for favoring that location as a landfall for bringing power onshore.

These points and others could prove to be Area differentiators when detailed interconnection and transmission planning begins, though in most cases, they will just result in adjustments to project cost estimates. National Grid representatives observed that the permitting process for land-side transmission facilities will be extensive.

Electrical service platforms will be required to “transform” power from turbines to higher voltages for transmission by underwater cable to the onshore grid. Platforms were described as 25 by 25 feet, unmanned, numbering 2 or 3 in each Area, and daisy-chained for accumulating power produced. Each would likely be attached to a turbine tower. There was also discussion of potential use of such locations for research facilities or ocean observatories.

Economics

The relative cost for energy produced was the screen that identified the combinations of *Areas E / H and J / K* as least-cost locations for offshore wind farms, on a dollars-per-megawatt hour (MWH) basis. This cost ranged from \$94 per MWH to \$137 per MWH. While cost proved to be a significant differentiator which might make one location more attractive than another for development in the near term, it does not eliminate an Area from future consideration and development if, at that future date, the public value created, site acceptability, and project economics are determined to be favorable.

The build-up of these cost estimates was shared with participants, accompanied by the detailed information included in the RI Wind Energy Study. Estimates include 20% contingency adders. Presenters noted that there is some interactivity in the pricing when contiguous Areas create economies of scale. They also explained that operation and maintenance costs are not part of the construction estimates. Detailed engineering and analysis will refine these estimates significantly. This will include extensive analysis of the sea bottom in the individual areas to evaluate the engineering, design, and cost implications of working with the site-specific geology.

Risk Assessment

A discussion of risks posed by large vessels straying into *Areas J and K* briefly touched on potential for collisions with wind turbines or interference with U.S. Naval Operations. *Area J* in federal waters was identified as the potentially bigger problem due to its closer proximity to sea routes and shipping channels, but the magnitude of this risk was not quantifiable at this time.

Community Meetings: Block Island, November 8 and 10, 2007

In the first of what are anticipated to be a series of meetings with communities that see themselves as potentially affected by the siting of an offshore wind farm in one or more of the Areas identified, Office of Energy Resources staff and their consultants presented an overview of the Rhode Island Wind Energy Study results to Block Island residents.

The meetings were initiated and organized by New Shoreham's representative to the Stakeholder Process and sponsored by local Block Island organizations. The objectives of the two Block Island meetings were 1) to inform Block Island residents about the conclusions of the Wind Energy Study and 2) to solicit their comments and concerns about potential wind development in Areas K and J south of the island.

Residents who attended had two primary responses to the potential for development in the area. The first was to consider what they might be losing if these projects were built. Concerns expressed focused almost entirely on the visual impacts of a wind farm on island residents (e.g., apparent size of towers as seen from shore, lighting requirements and their night time effects) and uncertainty as to what such projects might mean to the value of properties on the south end of Block Island with direct views of the affected seascape.

The other response was to consider what Block Island could gain from such a project if power produced could be brought to the island economically and used to supply island residents. Block Island power is presently supplied by diesel generators on the island and power costs approach \$0.40 per kilowatt hour. A wind project off Block Island would not only bring wind power to the island, but would also connect the island by cable to the mainland (which would not otherwise be economical) resulting in mainland electric rates for Block Island residents even when the offshore wind farm was not producing. Some residents suggested that this scenario might also include upgrades to the island's power distribution network. It was clear to residents that if Areas other than those near Block Island were developed, none of these benefits could accrue to them.

SUMMARY OF STAKEHOLDER PROCESS FINDINGS

After the four days of formal meetings, the Stakeholders Group supported the concept of Rhode Island securing some significant portion of the electricity consumed by Rhode Islanders from offshore wind farms. There was consensus that additional extensive research and analysis will be required to evaluate and select final locations, as well as to permit and build one or more wind farms off of Rhode Island.

General Findings

The process was successful in identifying differentiating issues that appeared to be particular to some sites and not others. However, none of the potential offshore sites identified by the RI Wind Energy Study were eliminated by the Stakeholders Group from further consideration. At the end of the four-meeting process, it was left to the Office of Energy Resources to determine which Area or Areas would be most immediately pursued for development, based on projected economics, Stakeholder concerns, permitting requirements, and the state's financial capacity. It appeared that any and all Areas identified through and remaining after the multi-stage screening process are viable as future wind energy generation locations if site-specific issues and concerns are effectively managed.

Specific Findings by Area

Area A – 3.7 sq. mi., off Westerly, state waters, wind speed 7.75 m/s

- Tourism organizations expressed particular concern that development in this area could adversely affect summer tourism and reduce the economic benefits tourism creates for Rhode Island
- In addition to general concerns expressed about the impact of wind farm development in all areas on wildlife habitat and migrating species, this area was identified by conservation organizations as being on a prime migration route for raptors and shore birds

Area B – 5.36 sq. mi., off Charlestown, state waters, wind speed 8.25 m/s

- Prime fishing areas for squid and flounder
- Areas where squid eggs are laid and develop, also serving as food source for commercial species
- Construction impacts on fisheries are a concern here

Area C – 7.55 sq. mi., off Point Judith, state waters, wind speed 8.25 m/s

- Identified as potentially conflicting with sailing events
- Extensive fishing boat traffic entering and leaving, though a well-marked wind farm could serve as an important supplemental private aid to navigation

Area D – 5.32 sq. mi., off Newport, state waters, wind speed 7.75 m/s

- Important location for the lobster fishery since lobster eggs are laid and hatch in this Area and then drift on currents and settle; effect of a wind farm on ocean currents in this area needs study
- Location of a significant number of fish traps that are provided for in Rhode Island General Laws (per maps provided by RI DEM)
- Concern expressed about impacts of development of near-shore location on tourism and property values
- In addition to general concerns expressed about the impact of wind farm development in all areas on wildlife habitat and migrating species, this area was identified by conservation organizations as being particularly important for harlequin ducks (which are recognized as endangered by Canada, though not by the United States)

Area E – 7.78 sq. mi., off Little Compton, federal waters, wind speed 8.75 m/s

- In combination with Area H, identified as one of the most cost effective locations for offshore wind, on a dollars per megawatt hour basis, and large enough to achieve the Governor's 15% supply goal

Area F – 9.97 sq. mi., off Charlestown, state waters, wind speed 7.75 m/s

- Prime fishing areas for squid and flounder
- Areas where squid eggs are laid and develop, also serving as food source for commercial species
- Tourism organizations expressed particular concern that development in this area could adversely affect summer tourism and reduce the economic benefits tourism creates for Rhode Island
- Construction impacts on fisheries are a concern here

Area G – 22.3 sq. mi., off Newport/Little Compton, state waters, wind speed 8.25 m/s

- Important location for the lobster fishery since lobster eggs are laid and hatch in this Area and then drift on currents and settle; effect of a wind farm on ocean currents in this area needs study.
- Location of a significant number of fish traps that are provided for in Rhode Island General Laws (per maps provided by RI DEM)
- Concern expressed about impacts of development of near-shore location on tourism and property values

Area H – 9.69 sq. mi., off Little Compton, state waters, wind speed 8.75 m/s

- In combination with Area E, identified as one of the most cost effective locations for offshore wind, on a dollars per megawatt hour basis, and large enough to achieve the Governor's 15% supply goal

Area J – 12.94 sq. mi., off Block Island, federal waters, wind speed 9.25 m/s

- In combination with Area K, identified as one of the most cost effective locations for offshore wind, on a dollars per megawatt hour basis, and large enough to achieve the Governor’s 15% supply goal
- Wind farm development in this area could have the additional benefit of bringing economical power to Block Island residents, who are presently supplied by on-island diesel generators
- Southwest Ledge identified as a “top fishing spot in New England” that is a destination for saltwater anglers
- Important flounder and cod fishing areas
- Bottom conditions may require alternative tower structures to the driven monopoles assumed in the site screening. Drilled foundation supports could create tailings that might impact fisheries
- Commercial trawlers expressed concerns that the placement of turbines in these areas might restrict their fishing operations
- Close to major shipping lanes, creating potential for risk to and from large vessels straying into area

Area K – 13.14 sq. mi., off Block Island, state waters, wind speed 9.25 m/s

- In combination with Area J, identified as one of the most cost effective locations for offshore wind, on a dollars per megawatt hour basis, and large enough to achieve the Governor’s 15% supply goal
- Wind farm development in this area could have the additional benefit of bringing economical power to Block Island residents, who are presently supplied by on-island diesel generators
- Southwest Ledge identified as a “top fishing spot in New England” that is a destination for saltwater anglers
- Important flounder and cod fishing areas
- Commercial trawlers expressed concerns that the placement of turbines in these areas might restrict their fishing operations
- Close to major shipping lanes, creating potential for risk to and from large vessels straying into area

RECOMMENDATIONS AND NEXT STEPS

Alternatives Impact Analysis

The Stakeholders observed that much additional information was needed to fully understand the relative merits of the Areas identified, beyond the economic analysis that brought Areas E, H, J, and K to the forefront. They recommended that the Environmental Impact Analysis include a thorough review of alternative Areas and the issues and opportunities they create before final site selection and permitting.

Ongoing Public Participation Process

Commissioner Dzykewicz asked the stakeholders if they would continue to meet to build on their efforts to date and to contribute their perspectives to future analysis and site selection. The stakeholders indicated that they would be willing to do so.

Scoping Process for Environmental Impact Review

Stakeholders specifically asked to be participants in the scoping process that helps define the issues to be included and analyses required in the Environmental Impact Report (EIR). Stakeholders suggested that the EIR should include both the impacts of the development of the offshore Areas and also the impacts associated with necessary landfalls and interconnections with the power grid.

ATTACHMENTS

- 1. Stakeholder Process Participants**
- 2. Site Selection Issues Identified by Stakeholders**
- 3. Stakeholder Meeting Presentations**

OFFSHORE WIND STAKEHOLDER PROCESS
PARTICIPANTS
AUGUST 30, SEPTEMBER 20, OCTOBER 24 & 31, 2007

John McJennett	Adams Hill Consulting
Alan Shoer	Adler Pollack & Sheehan
Daniel Mendelsohn	Applied Technology & Management
Deborah Crowley	Applied Technology & Management
Eugenia Marks	Audubon Society of RI
Peter Voscamp	Block Island Times
Dennis Duffy	Cape Wind
Jim Saletnik	citizen
Ken Payne	citizen
Ed Lavallee	City of Newport
Trish Reynolds	City of Warwick
Cynthia Giles	Conservation Law Foundation
Dan Goulet	CRMC
Matt Autin	Environment Rhode Island
Randall Carnaham	Gencorp Insurance
Chris Long	Governor's office
Steve Kass	Governor's office
Dennis Loria	Loria Emerging Energy Consulting
Dana Walters	National Grid
Dave Jacobson	National Grid
Dave Larson	National Grid
Ed Kremzier	National Grid
Henri Daher	National Grid
Tim Roughan	National Grid
Howard McVay	Northeast Marine Pilots
Paul Costabile	Northeast Marine Pilots
Vince Kirby	Northeast Marine Pilots
Karina Lutz	Peoples Power and Light
Omay Ephick	Peoples Power and Light
Paul Gromer	Peregrine Energy Group
Steve Weisman	Peregrine Energy Group
Tim Barmann	Providence Journal
Chris Brown	RI Commercial Fishermen's Association
Kenneth Ketcham	RI Commercial Fishermen's Association
Bob Ballou	RI DEM
Janet Keller	RI DEM
Mark Gibson	RI DEM
Tom Getz	RI DEM
W. M. Sullivan	RI DEM
Tom Ahern	RI Division of Public Utilities
Benny Bergantino	RI DOP / SPP
Michael Walker	RI EDC
Judy Jones	RI Housing

Larry Dellinger	RI Lobstermen's Association
Ken Kubic	RI Marine Trades Association
Andy Dzykewicz	RI Office of Energy Resources
John McDermott	RI Office of Energy Resources
Julie Capabianco	RI Office of Energy Resources
Stephen Medeiros	RI Saltwater Anglers Assn.
Robert Kalaskowski	RI Senate Policy Office
Mike McGiverney	RI Shellfishermen's Association
Kevin Flynn	RI Statewide Planning
Mark Brodeur	RI Tourism
Paul Sanroma	RI Wind Alliance
Lefteris Pavlides	Roger Williams University
Curt Spalding	Save The Bay
John Torgan	Save The Bay
Ken Payne	Senate Policy Office
Myrna George	South County Tourism Council
John Farley	TEC-RI
John Paul	TEC-RI
Jeff Brenner	Town of Barrington
Edward Barrett	Town of Charlestown
Don Wineberg	Town of Jamestown
William Smith III	Town of Jamestown
Robert "Bob" Mushen	Town of Little Compton
Roy F. Bonner	Town of Little Compton
Samantha Hogan	Town of Middletown
Christine Forster	Town of Middletown Wind Committee
Diane Johnson	Town of Narragansett
Peter B. Baute MD	Town of New Shoreham
Ray Torrey	Town of New Shoreham
Gary Gump	Town of Portsmouth
John McColloch	Town of Portsmouth
Robin Schutt	Town of South Kingstown
Glenn Steckman	Town of Tiverton
Joseph DePasquale	Town of Warren
Anthony Guida	Town of Warren citizen
James Angelo	Town of Westerly
Mike Elliott	U.S. Army Corp of Engineers
Alford Danzy	U.S. Coast Guard
Kevin Blount	U.S. Coast Guard
Alexander Hoar	U.S. Fish and Wildlife
David Farmer	URI Graduate School of Oceanography
Kate Moran	URI Graduate School of Oceanography
Tania Lado Insua	URI Ocean Engineering

SITE SELECTION ISSUES IDENTIFIED

SEPTEMBER 20, 2007

NOTE: Issues that participants decided would be relevant to the recommendation or selection of one or more sites for offshore wind development are in **bold.**]

Conflicts with Existing Uses

- **Scale of the projects proposed (number, layout, size, maximum height)**
- **Commercial shipping (including impacts of marine accidents and turbine interference with clean-up)**
- **Cruise ship routes**
- **Sailing regattas (e.g. Block Island Race Week, Newport – Bermuda Race)**
- **Potential for reduction of wind available to sailboats in vicinity of wind farms**
- **Recreational fishing and boating effects**
- **Commercial fishing and also authorized trap sites, lobstering, and shellfishing**
- **Operations of military air traffic and submarines**
- **Local and area tourism**
- **Impacts on property values**
- **Commercial air traffic, e.g. at Westerly airport**
- **Wildlife habitats**
- Sea bottom damage, incl. shipwrecks, communication cables, etc.
- Spoils disposal
- **Impacts of necessary and potential wind farm lighting**
- Impacts on other states

Conflicts with Future Uses

- Foreseeable future offshore uses
- Other future water based energy generation
- Aquaculture

Impacts on Environmental Resources (on and off shore)

- Creation of new fish habitats
- **Seasonal bird use of area waters**
- **Migratory bird patterns**
- **Pelagic birds**
- **Marine turtles**
- **Sea mammals**
- **Endangered species**
- Quantification of wind power's environmental benefits (i.e., the cost of not doing it)
- Health benefits of wind power vs. other generation (and cost of not doing it)
- Impacts of decommissioning requirements
- **Impacts on ocean currents**

SITE SELECTION ISSUES IDENTIFIED (CONTINUED)

Aesthetics

- **Appearance of offshore wind farms (under various environmental conditions)**
- Deterioration of wind turbines due to lack of maintenance
- Potential design variables and the alternative visual impacts they would create
- **Numbers of people who are “receptors” and their perception of what they see**
- Allowing advertising on towers
- Comparative aesthetics of different technologies
- **Sound impacts**

Interconnection with the Power Grid

- **Different onshore infrastructure requirements for each suggested site**
- **Difficulty in securing easements necessary for onshore transmission, substations, etc. to connect each of the proposed sites**
- **Offshore interconnection infrastructure**
- **Adequacy of existing transmission (generally and in relation to specific sites)**
- Potential for transmission corridors
- Conflicts or synergies with other generation

Project Economics

- **All-in cost for each of the sites, including interconnection to the grid**
- **Cash flows for each site (life cycle)**
- Administrative costs of public ownership
- **Security costs to protect farms from potential terrorist attacks**
- **Potential for storm damage and associated costs**
- **Risk assessment of alternative sites**
- **Cost variability of alternative sea bottoms and necessary foundations**
- Economic costs of other sources (e.g. externalities)
- Health impacts (and cost of not doing it)
- Economic development / job creation (mfg, installation, O&M)
- Useful life – lease vs. buy decision
- Potential for long term contracts and known rates
- **Creation of new fish habitats and aquaculture**
- Impacts of alternative ownership models
- Impacts of decommissioning requirements
- Opportunity for upgrades to better technology

Benefits Sharing

- Opportunity for “my town” to invest and own
- **Commitment to supply economically priced power to Block Island**
- Availability of long term power purchase contracts?

MEETING PRESENTATIONS:
AUGUST 30, 2007
OCTOBER 24 AND 31, 2007

Presentations are available separately as PDFs.