

Workshop Summary

National Wind Coordinating Committee
New England Wind Power Siting Workshop

October 24, 2001
Boston, MA

Final

Workshop Description and Purpose

Compared to the impacts of fossil and nuclear-generated electricity, wind power has a more benign environmental profile. However, certain effects of wind power, such as noise, visual, and biological issues, can raise environmental and community concerns. Questions about the impacts of wind development can, in some cases, delay or prevent their permitting. This workshop sought to explore the issues and challenges of siting wind turbines in New England, a region more densely populated than the regions where U.S. wind-power development has concentrated to date, and where many windy locations are valued for multiple uses and environmental values.

The workshop sought to:

- Provide a state-of-the-art national and regional perspective on siting of wind turbines relevant to New England states.
- Provide a forum for stakeholders from the environmental, industry, legislative, regulatory, municipal government, and community sectors to discuss issues and shape next steps.
- Address these questions:
 - What are the issues of concern associated with wind turbines?
 - How were the issues raised in the siting and permitting process of some wind developments?
 - How were the issues addressed?
 - What was the outcome and resolution of the issues?
 - What lessons have been learned that are relevant to wind development in New England?

Welcome and Introductions

Hugh Saussy, director of the U.S. Department of Energy New England Regional Office, welcomed the workshop participants. He observed that two themes related to energy have emerged in the wake of the September 11 terrorist attacks: 1) It is time to diversify our energy sources, and 2) It is time to move from having our foreign policy dictated by oil demand. He remarked that the focus on national security and the U.S. ability to conduct its affairs without influence from oil demand points us toward renewable energy sources. He added that with well developed technologies and interest in investment, wind power is ahead of other renewable options.

Mr. Saussy commented that he was pleased to see an interest in wind power in New England, noting that “the wind blows well here” and the resource exists. He acknowledged that there are obstacles to development but stressed that now is an opportune time to work toward overcoming them, while interest in non-petroleum resources is high.

In closing Mr. Saussy reminded participants that the staff at the regional office are happy to offer any assistance they can to facilitate renewable energy resource development.

Following Mr. Saussy’s welcome, facilitator Juliana Birkhoff, RESOLVE, reviewed the agenda and workshop purpose (see attachment A).

Gabe Petlin, RESOVLE, gave an overview of the National Wind Coordinating Committee (NWCC) (see attachment B). He outlined the mission of the NWCC, which is to foster dialog on key wind-energy issues and reduce barriers to smooth the way for wind development. He also

summarized the core activities and membership of the NWCC and the key issues the committee is addressing.

Keynote Address

Refer to attachment C for the text of Mr. Knobloch's address.

Kevin Knobloch, Union of Concerned Scientists (UCS), began his address by commending the people in the room for dedicating their careers to building the cleanest energy sources and/or ensuring that even the cleanest energy sources are sited in a fashion that minimizes impacts or both. He acknowledged that even among environmentalists committed to wind power there are challenges and divergent views. He observed that these obstacles will have to be resolved if New England is to help meet the goal proposed by UCS of meeting 20 percent of national electricity demand from wind, solar, and biomass sources by the year 2020. Mr. Knobloch presented several “macro lenses” through which expanding wind generation appears critical: global climate change, energy security, and air pollution. He explained that wind energy is central to the remedy for each of these problems and outlined steps that can be taken to advance wind generation. He commented that the question being asked at this workshop—what does a positive future look like (for siting wind developments) based on lessons learned—is the right question to ask and added that workshop participants have the answers.

Presentation: Status of Current and Future Wind Development and Wind Resources in New England

Refer to attachment D for a copy of Mr. Manwell's slides.

Jim Manwell, University of Massachusetts Renewable Energy Laboratory, began his presentation by commenting that wind energy was used early in New England's history for both transportation (i.e., sailing ships) and mechanical power (i.e., windmills). He then gave an overview of where the wind resource is in New England and where past, operating, and proposed wind power sites are located. He commented that potential future development may include small wind farms on inland ridges, customer-owned “behind the meter” turbines, and sites on islands or offshore. He observed that development in New England is unlikely to include huge projects like those in the West, estimating that New England projects will be in the ten to one hundred megawatt range. He remarked, however, that the Nantucket Sound project is one of the largest offshore developments proposed anywhere in the world. He observed that European experience with offshore development may provide a model for New England.

PANEL 1: ENVIRONMENTAL AND LAND USE COMPATIBILITY ISSUES ASSOCIATED WITH WIND TURBINES

Questions the panelists were asked to address:

- *What are the issues of concern that are raised by wind developments?*
- *What is the most important scientific, technical, economic or social information for your set of issues?*
- *What do we know about mitigating these issues or avoiding them from becoming a problem?*

Panel moderator Sam Swanson, Pace Energy Project, shared some of what he has learned while working with the Pace Project. The goal of the project is to inform energy consumers and help them make wise choices. Through a tool called the Power Scorecard, the project helps people to

discern the differences among energy production technologies and to realize that all have impacts that need to be kept in perspective. Mr. Swanson observed that some differences are inherent to the technologies, but even relatively low-impact technologies can be sited or designed poorly, increasing their impacts. He concluded that the issues being discussed at this workshop have to be addressed so that the public has some degree of confidence that siting will be done reasonably and impacts minimized.

Presentation: Land Use Compatibility, Visual and Scenic Issues

Jean Vissering, landscape architect, summarized the factors to be considered to minimize the visual impact of wind turbines. She described two visual challenges: 1) vertical elements and movement on the landscape tend to draw one's eye, and 2) traditional development in New England has happened in the valleys, making structures on ridgelines more noticeable. Ms. Vissering outlined the basic steps for determining appropriate sites, including performing a viewshed analysis and determining scenic sensitivity. She noted that there are well accepted tools for assessing scenic quality. Examples include the U.S. Forest Service's Visual Management system, and scenic inventories conducted by both Rhode Island and Massachusetts. Further guidance can be found in various state and local documents. Ms. Vissering noted that good site design can also minimize impacts. She identified techniques such as good turbine design, grouping turbines, unity of turbine design, avoiding clutter, minimizing clearing, avoiding linear swaths down a mountain for transmission lines or roads, screening associated structures, and ensuring that the scale of the project fits the scale of the landscape.

Presentation: Recreational Issues

Don Owen, National Park Service Appalachian Trail Office, began with an observation that wind power and the Appalachian Trail (AT) are going to have to live together. He explained that the Appalachian Trail is a unit of the National Park System, adding that the trail is maintained with the help of many dedicated volunteers. He commented that the trail is a major feature of the New England landscape and also is the only trail in the National Park System designated as a National *Scenic* Trail. The scenery through which the trail passes is the primary attraction for many users. In considering how to deal with the impact of wind power on the trail, Mr. Owen commented that the "short answer" from the Park Service's perspective is that if a project cannot be seen or heard from the trail, it is all right. Any project that has potential to impact the trail is evaluated. The U.S. Forest Service scenery management system is used to help assess the potential impact, as are visual simulations. Mr. Owen stated that, in general, if a project will have an impact, it should do so only once and, preferably, in an area where there are already other impacts. Also, a list of "sacred areas" has been prepared in which no development is allowed. He stressed the importance of working together and consulting stakeholders early in a process to identify and resolve possible conflicts.

Presentation: Avian – Wind Power Interaction

Refer to attachment E for a copy of Mr. Kerlinger's slides.

Paul Kerlinger, Curry and Kerlinger, LLC, outlined the legal issues and ecological issues related to avian – wind power interaction. He discussed several of the studies that have been done since 1988, noting that most have looked at direct mortality impacts, while indirect mortality impacts (habitat alteration and disturbance) are not well studied. With the exception of the turbines at

Altamont Pass, CA, the studies find relatively few bird fatalities and indicate that population effects are unlikely. An NWCC study indicated that overall, a maximum of one to two fatalities per turbine per year, spread over many species. Mr. Kerlinger noted that none of the three federal laws protecting birds has ever been used in enforcement against the wind industry. He commented that issues particular to New England may arise because projects are likely to be in offshore, coastal, or forest areas, which involve different species from those studied at western sites. Also, FAA lighting requirements may raise issues. He referred participants to two NWCC publications (*Permitting of Wind Energy Facilities: A Handbook*; *Studying Wind Energy/Bird Interactions: a Guidance Document*; and *Avian Collisions with Wind Turbines: A Summary of Existing Studies and Comparisons to Other Sources of Avian Collision Mortality in the United States*¹) for further information. He stressed that conducting an avian risk assessment early in the siting process, as described in the guidance document, is a critical step. In closing, Mr. Kerlinger commented that further research is needed comparing wind power to other methods of electrical generation in regard to avian impacts as well as impacts on all biota.

Presentation: Noise and Zoning

Refer to attachment F for a copy of Mr. Curry's notes.

Dick Curry, Curry and Kerlinger, LLC, began by commenting that noise from modern turbines has diminished markedly due to advances in technology, particularly for larger turbines producing 500 kilowatts or more. Defining noise as unwanted sound, Mr. Curry outlined the turbine design factors that have helped to reduce the noise level of turbines. He also described project-specific factors that may help mitigate impacts and suggested collecting pre-construction baseline sound data if there is concern that noise will be a problem for a proposed project. He recommended using orientation visits to existing facilities in the region to help people “get a feel” for the noise level and other aspects of a wind power facility.

Mr. Curry also shared some observations on zoning issues, pointing out that most local jurisdictions do not have specific zoning language relating to wind projects. In areas where zoning is in place, variances must be secured for wind projects. If no applicable local regulations exist, responsible developers rely on best practices for guidance. Mr. Curry remarked that in such cases, the best sales tool for the next project is the quality of the last project.

Presentation: Offshore and Coastal Resource Issues

Refer to attachment G for a copy of Mr. Delaney's slides.

Rich Delaney, Urban Harbors Institute, reported that the majority of people in the U.S. live within 100 kilometers of a coast, and these same areas have some of the best wind resources in the country. He observed that Europe has a similar population concentration in coastal areas and has already proceeded with offshore wind development. Commenting that coastal management policy in the U.S. has focused on oil and gas development issues, Mr. Delaney outlined the impacts of fossil-fuel-based energy policies on coastal resources and communities. He then summarized the issues of concern raised by coastal and offshore wind turbines, including land use compatibility and availability, natural resource impacts, user conflicts, visual impacts, and regulatory novelty. He also outlined the data required to address those issues and possible

¹ All three documents are available at www.nationalwind.org.

techniques for mitigating impacts, such as conducting detailed siting analysis and using computer assisted design (CAD) visual simulations.

Presentation: Wildlife and Critical Habitat Issues

Refer to attachment H for a copy of Mr. Pelletier's slides.

Steve Pelletier, Woodlot Alternatives, Inc., commented that though most of his experience with wind facility siting has been in Maine, but that the approach to wildlife and critical habitat assessments is similar no matter where a project is proposed. Understanding regional landscape and site-specific resource issues is key to project planning, and requires the up-front identification of natural communities, individual species—both flora and fauna—and their respective habitats. Identifying critical resource issues is particularly key to recognizing potential project limitations and in developing suitable mitigation opportunities. The process frequently requires species specific and properly timed seasonal surveys and infers an understanding of taxonomy and species habitat requirements. Mr. Pelletier outlined the types of direct and indirect habitat impacts that wind projects may have and then summarized the objectives and components of environmental studies for proposed sites. He stressed that proper planning is critical to avoiding and minimizing habitat impacts and listed several measures to consider during planning and implementation. He commented that post-construction monitoring is an important follow-up step for critical areas and issues and also helps to build the general body of knowledge on the effects of wind power on wildlife and habitat.

Discussion

Issues raised and comments made by panelists and audience members following the presentations:

- Mr. Swanson observed that one advantage of wind power is that can be mixed with other land uses, thereby lowering the acreage affected. He asked how the land impact of wind power generation compares to other sources. Mr. Curry commented that the impacts of the whole generating process must be considered and said that the footprints of generation from oil, gas, or hydropower are larger than for generation from wind. Mr. Swanson noted the difficulty of finding a common metric for land impacts given questions such as whether installing a turbine precludes other land uses and values.
- Steve Ugoretz, Wisconsin Department of Natural Resources, pointed out that some projects are finding that bats are more affected than birds in terms of numbers of direct fatalities. He commented that bat interaction with wind turbines is an emerging issue, and research has not yet been done to determine its level of significance. Mr. Kerlinger noted that the NWCC document *Avian Collisions with Wind Turbines: A Summary of Existing Studies and Comparisons to Other Sources of Avian Collision in the United States* reports bat data where available.
- Mr. Ugoretz suggested that the findings of European studies on the impacts of offshore and coastal development may be useful for projects in the U.S. Mr. Kerlinger commented that it is still too early in many of the studies to have conclusive findings, but a much better understanding will emerge over the next few years.
- In response to a question, Mr. Owen said that he did not know whether any Appalachian Trail users intentionally seek a view of wind turbines. He said in general people use the trail to access the classic New England landscape and natural settings, indicating that wind

turbines should not be the dominant feature on the landscape. He added that raising the height of a facility to decrease its footprint is not the best approach from the perspective of Appalachian Trail users. Ms. Vissering commented that the relatively small mass of turbines minimizes their visibility from a distance, and siting them by other facilities, such as ski resorts, helps minimize how noticeable they are.

- Ms. Vissering explained that state scenic inventories usually are based on assessments of topography, vegetation, and cultural resources. Varied landscapes, such as those that include agricultural meadows as well as forests and traditional settlements, are generally considered more scenic than those of a single vegetation cover, such as a completely forested area.
- An audience member pointed out that turbines differ from telecom towers and other structures because of the movement of their blades. He asked whether any studies of visual effect had been done simulating the movement. Ms. Vissering said that studies have found that movement increases the visual appeal of turbines as compared to telecom towers and other vertical structures, though it also draws attention to turbines on the landscape. She said that more research needs to be done to determine how people view turbines, and the studies need to have people look at actual operating turbines because they are very different than in photographs.

PANEL 2: CURRENT PRACTICES AND EXPERIENCES ON SITING AND PERMITTING WIND TURBINES

Questions the panelists were asked to address:

- *Were any of the issues in Panel 1 raised in the siting permitting process of your project?*
- *What steps did you take to gain public acceptance and permits?*
- *What was the outcome and resolution of the issues of concern?*
- *What did you learn that is useful for others to know?*

Presentation: Overview of Wind Permitting Frameworks in Different Settings

Dale Osborn, Distributed Generation Systems, Inc., stated that there are three characteristics of New England that particularly affect wind power development: 1) the region is relatively densely populated, 2) the region's wind resource often occurs in pristine areas, and 3) state and local governments exercise a high degree of regulatory oversight. He remarked that whether this heavy oversight is good or bad is a matter for the public to decide, but it does raise the cost of wind development in terms of both time and money. He proposed that if New England wants "green energy," governments will have to review their regulatory processes to streamline them and involve fewer agencies.

Case Study 1: Madison, NY

Refer to attachments I and J for copies of Mr. Martin and Mr. Hecklau's slides.

John Martin, New York State Energy Research and Development Authority (NYSERDA), briefly described a project proposed for Ellenville, NY, in the 1980s and the factors that contributed to its collapse. He then explained how the lessons learned from that experience were applied in the Madison project. He outlined the review process the project underwent and some of the anticipated and unexpected siting issues that were addressed. Reflecting on some of the unexpected issues that arose, Mr. Martin recommended that developers be aware of any unusual circumstances their projects may involve. He commented that two factors, among others, leading

to the success of the project were community and stakeholder support and the fact that the turbines fit with the aesthetics of the landscape. In closing he reported that a second project has been proposed in Madison County, this time near the community of Fenner.

John Hecklau, Environmental Design & Research, Inc., reported that the environmental studies done for the Madison project identified visual and agricultural impacts as the primary issues for consideration. He described the visual impact analysis done to assess 1) the visibility of the turbines and 2) the likely impact of that visibility. The analysis found that though the turbines had a visual impact, they generally were perceived to fit with the landscape. In regard to agricultural effects, getting the equipment in and out for the construction phase presented the biggest challenge. At the conclusion of his presentation, Mr. Hecklau shared several lessons learned from the project, including

- proper siting and design can avoid or minimize many impacts.
- a receptive host community is critical,
- comprehensive, accurate, and defensible studies are a good investment,
- visibility from a distance should not be underestimated, and
- aviation warning lights have a negative visual impact.

Case Study 2: Searsburg, VT

Refer to attachments K and L for copies of Ms. Staskus and Mr. Meyer's slides.

Martha Staskus, enXco East Coast, Inc., commented that the pre-permit work for this project included a significant effort to communicate Green Mountain Power's initial ideas with the public, gather stakeholder input, and develop the project plans based on that input. She outlined the factors considered in site selection and stressed that early outreach efforts and the company's openness about its plans helped to identify and address concerns. Ms. Staskus also described some of the on-site mitigation measures taken to address the concerns that were identified by stakeholders and through the impact studies, including

- minimizing the amount of vegetation cleared from the site,
- conducting tours only during certain months and only in certain areas to minimize the disturbance to bears, and
- developing and implementing a public education and outreach plan, a wildlife mitigation plan, and a landscape plan.

Peter Meyer, Vermont Public Service Board, summarized the board's siting process as it pertained to the Searsburg wind power project. He explained that the process included one public hearing and three days of technical hearings, with the entire review process lasting about a year. He listed the board's siting review criteria and the specific issues raised for this project, commenting that the economic issues were more controversial than the environmental issues in this case. Among the questions posed in the siting criteria are 1) is there a need for the project that could not be met more cost effectively through energy efficiency? 2) will the project provide an economic benefit to the state and its ratepayers? and 3) will the project have an undue adverse effect on esthetics, historic sites, air and water purity, the natural environment, or public health and safety? He summarized the steps that Green Mountain Power took to resolve the various issues to the board's satisfaction, including hiring credible technical experts to address the environmental issues, conducting extensive community education and outreach, and meeting with all interested groups and organizations. He shared lessons learned from the project and

concluded with the observation that with proper planning and a commitment to addressing all issues using credible experts, the permitting process is not a barrier to wind development in New England.

Case Study 3: Proposed Project at Brodie Mountain, MA

Refer to attachment M for a copy of Mr. Osborn's slides.

Dale Osborn, Distributed Generation Systems, Inc., pointed out that the Massachusetts facility siting board process applies only to 100 megawatt or larger projects. He commented that having a process in place for smaller projects similar to Vermont's process would facilitate wind power development in Massachusetts. He described the project proposed for Brodie Mountain and the activities completed so far in the siting and permitting processes. He said that a site evaluation was begun and key people were consulted on environmental issues early in the process so that project planners could be sure that the project seemed feasible before holding public meetings. Mr. Osborn explained some of the obstacles the project has faced due to the structure of local government in Massachusetts and contrasted the project to others he has developed in which a specific permitting authority guides the process.

Nancy Nysten, Berkshire Renewable Energy Collaborative, stressed throughout her presentation that education is critical to the success of a project. She recommended that the public be made aware that they have choices and given the information to be able to make good choices. For the public education effort for the Brodie Mountain case, the collaborative looked broadly at wind and energy issues and found that the public showed a high interest in learning. She recommended harnessing the visual impact of turbines to make it a positive factor rather than negative. Ms. Nysten commented that the Searsburg site is a good learning tool as the tours bring the whole process to life. She generalized that getting people onto an operating wind power site is the best way to inform them and address their concerns.

Synthesis Case Study 4: Projects That Did Not Get Permitted or Built

Refer to attachment N for a copy of Mr. Bolgen's slides.

Nils Bolgen, Massachusetts Renewable Energy Trust, described three projects that did not go ahead and the lessons learned from those experiences. He listed some of the factors that can "sink" a project: the project is not appropriate to the site, the timing is bad, a bad experience with a past project "poisons" the climate for other projects, the project has no local champion, there is a process failure, and residents have a "not in my backyard" (NIMBY) attitude. Mr. Bolgen then discussed which of those factors had an effect in each of the three cases. He commented that for Halibut Point State Park (Rockport, MA) and Windmill Point (Hull, MA), project appropriateness may or may not have played a role, as each of the proposed projects may have been a bit too large. He remarked, however, that ultimately the Hull site was revisited and a successful project is underway with local support, an appropriate project, and appropriate timing.

Discussion

Issues raised and comments made by panelists and audience members following the presentations:

- In response to a question, Mr. Hecklau said that he did not know how much the full permitting process cost for the Madison project as his company was involved in only part of the process. He estimated that the visual assessment his firm did for a recent gas plant project, with a much higher megawatt capacity, cost about ten times as much as the visual assessment for the Madison project. An audience member remarked, however, that the generation capacity of the gas plant may be twenty times that of the Madison wind power facility.
- A county government representative in the audience commented that she did not want people to get discouraged about siting projects in Massachusetts. She explained that there were factors in the Brodie Mountain project, such as exploring siting options in two separate towns, that raised the permitting cost but that would not arise in all projects. Mr. Osborn responded that some of the factors were unavoidable due to the structure of zoning policy in Massachusetts.
- Mr. Martin said that NYSERDA has a video of the Madison project in operation, and Ms. Staskus added that the American Wind Energy Association has a well-done video. They and other panelists agreed, however, that watching a video is no substitute for visiting a site. Mr. Bolgen reminded participants that the Hull Municipal Light Plant will soon have an operating turbine, providing another New England site for visits. Ms. Nysten observed that it is hard to predict who will be for or against a wind project. She also commented that not everyone needs to visit a site; key people can visit and then act as “wind ambassadors.”
- In response to questions, the panelists explained that there have been projects proposed for public lands in New England, but no facilities have been built. Ms. Staskus said they had explored including Green Mountain National Forest lands in the Searsburg project, but the environmental groups they consulted indicated that they wanted to wait. In response, the project was downsized and sited on a private inholding. Mr. Bolgen said that the Massachusetts Department of Forestry has not wanted to pursue proposed projects in the past but may be willing to explore possibilities now. Mr. Osborn said that the Forestry Department had been positive about the roads that the project would build as they would facilitate forest management. He observed that in the West wind power brings a higher per acre revenue than many other uses of public lands. He added, however, that the permitting process for development on public lands is generally very expensive. An audience member reported that there is movement in the federal agencies toward pursuing wind development.
- Mr. Hecklau explained that the Madison project tried to minimize the amount of lighting on the turbines while still meeting FAA requirements. He said that the strobe system that is in place is, unfortunately, very noticeable and suggested that some sort of shielding system may be possible but an effective one has not yet been developed. He commented that the FAA was fairly inflexible on its requirements. Mr. Osborn explained that while steady-burning lights minimize visual impact, they also may attract birds and affect avian impacts. Mr. Kerlinger commented that the FAA is studying the issue of lighting on turbines and is working with the American Wind Energy Association.

LUNCHEON PRESENTATION

Offshore Wind Development in New England

Refer to attachment O for a copy of Mr. Olmsted's slides.

Craig Olmsted, Cape Wind Associates, LLC, presented an overview of the project proposed for Horseshoe Shoal in Nantucket Sound. He explained some of the reasons why Cape Wind Associates chose to propose an offshore project:

- Offshore wind resource are generally better than onshore;
- Recent upscaling of commercial wind turbines have contributed to economies of scale; and
- Available offshore areas can accommodate larger scale projects that can service regional load centers.

Mr. Olmsted then explained that Nantucket Sound was chosen for its protected shallow water environs, optimal prevailing wind velocities and directions, close proximity to shoreline landfalls and electrical interconnects, and geographic proximity to service regional land demand.

Horseshoe Shoal was chosen because its water depths are less than fifty feet, it is an environmentally compatible and economically feasible location, and it is an area that minimizes conflicts with existing water-sheet uses. Mr. Olmsted listed the regulatory agencies with which project planners have met so far to describe the project, get feedback, and gauge where support for the project lies. He described the project's baseline environmental assessments and public outreach plan. He concluded with a summary of the public benefits of the project.

In response to questions from the audience, Mr. Olmsted and his colleague, Dennis Duffy, made the following points:

- The planned timeline for the project is to file the permits within a month, begin construction in 2003/2004, and begin operation twelve to fifteen months after that.
- The federal production tax credit is crucial to the project, and to other projects proposed for New England. The credit is scheduled to end, but Congress is considering extending it.
- The site acquisition process for the project is comparable to that for an oil platform, but an oil platform involves extraction, while a wind power project does not.
- Project planners do not expect that recreational navigation will be excluded from the site. The spacing of the turbines will easily accommodate small boats.
- The boats used for general turbine maintenance will not be industrial boats; they will have to transport only the technicians and relatively small tools. Special arrangements would have to be made if a major repair, such as replacing a blade, were required.
- Ice throwing is not expected to be an issue due to the waters temperature and salinity.
- Cape Wind Associates is working with the Coast Guard to design a lighting system. The lighting will not be visible from shore.
- There is no plan for storage capacity for the project, though fortunately the peak wind times are somewhat compatible with the peak power demand times.
- No other sites were found that fit all the siting criteria and had comparable wind speeds.
- Public outreach for the project is underway. The proposed project was presented at a Nantucket Rotary meeting. The outreach plan is extensive. Even though the project is in federal waters, the plan aims to get as much support as possible at the state and local levels.
- The impact to the ocean floor is expected to be minimal, though some maintenance likely will be necessary to address scouring from currents.
- Avian impacts are not anticipated.

- The project has not required any special legislation, though past legislation has helped pave the way.
- Offshore projects are more expensive than land projects, though costs are site specific to some extent.
- The primary public concern about the project has been visual impact, though the concern has been expressed in different ways by different stakeholders. In general the reaction from the public has been mixed; many people are very positive about wind power but less positive about this specific project.

PANEL 3: THE FUTURE OF WIND SITING IN NEW ENGLAND

Questions the panelists were asked to address:

- *Where is wind development likely to proceed in New England and what will the siting and permitting process look like?*
- *What are the key siting and permitting challenges likely to be?*
- *What does a positive siting and permitting future look like based on lessons learned in New England and elsewhere?*

Presentation: Wind Power in New England: What are the Ingredients for Success?

Refer to attachment P for a copy of Mr. Zimmerman's slides.

John Zimmerman, enXco East Coast, Inc., discussed the factors necessary for the success of wind development: good wind sites, markets for the power, and public acceptance. He noted that New England has a developable wind resource. In regard to public acceptance, he observed that people generally like wind projects, often because they value clean air and other benefits. He also commented that state renewable portfolio standards are helping viable markets for wind energy to emerge.

Presentation: Wind Power and The Wild: Can They Co-Exist?

Refer to attachment Q for a copy of Mr. Didisheim's slides.

Pete Didisheim, Natural Resources Council of Maine, explained the conflict the New England environmental community experiences as it weighs the advantages and disadvantages of wind power. On the one hand, environmentalists strongly support clean power sources as a way of reducing health-threatening air pollution and the risk of climate change. On the other hand, environmentalists are working hard to protect dwindling wilderness resources – some of which include ridgelines that could serve as good wind power sites. He noted that wind power must be examined in the context of increasing development pressures on Maine's forestlands. Mr. Didisheim outlined questions that the environmental community is asking in regard to wind development proposed for undeveloped ridgelines, including

- Will the project benefits offset the impacts?
- What is the long-range wind development plan?
- Is the amount of power generation meaningful?
- Why sacrifice this site when we waste so much energy?
- Are mitigation options being actively pursued?

He also provided some principles for making positive progress, including holding discussions among key parties before a site is selected and creating state-by-state wind power development

plans. He commented that if public engagement happens only after site selection, it may be too late.

Presentation: Wisconsin Wind Projects: Gaining Public Acceptance – What Are the Lessons?

Refer to attachment R for a copy of Mr. Ugoretz's notes.

Steve Ugoretz, Wisconsin Department of Natural Resources, noted that Wisconsin has several similarities to New England in regard to wind development. One important similarity is the delegation of permitting authority down to the local level. Mr. Ugoretz outlined the history of wind project siting in Wisconsin and then focused on two similar projects proposed in different parts of the state. The project that faced a lot of opposition was proposed near an urban center in a community with a high population growth rate. The other project, which faced little opposition, was proposed for a community with a lower population and less development pressure. Mr. Ugoretz summarized some of the lessons learned from these and other experiences. He commented that people often are not against the wind turbines but against the various actors involved in a project, and their opinions can be influenced by the way public involvement is handled. He suggested that more and early involvement may decrease the likelihood that a project will be stopped by public opposition.

Discussion

Issues raised and comments made by panelists and audience members following the presentations:

- Panel moderator Michael Tennis asked for comments on developing a state plan for wind power. Mr. Didisheim said that he is in favor of identifying on a map areas that are suitable and unsuitable for wind development. An audience member commented that residents of areas identified for wind development likely would object to the creation of the map without their input. Mr. Didisheim responded that in Maine areas suitable for wind development have few residents. Mr. Ugoretz said that Wisconsin has tried to create a map of “factors of constraint.” Such a map might be used, for example, to determine the necessary level of permitting requirements: a project falling outside the constraint areas would require minimal assessment, while a project in a constraint area would require more assessment and precautions. Mr. Zimmerman commented that as a developer he has all of the maps he needs, though he would not object to a map created by a state. He noted that the difficulty of choosing a site lies in the factors that cannot be seen, such as where a project will best fit in the electric system, who the landowners are, and what land is available. He remarked that a mapped state plan would be more an academic exercise than a useful tool on the ground. Mr. Ugoretz agreed that a map cannot substitute for on-the-ground studies and public contact, though it could provide some useful guidance.
- The panelists agreed that the public should be involved in a project early and often. Mr. Zimmerman commented that it is also important to take public input seriously and make feasible adjustments accordingly. Mr. Didisheim cautioned that a project should have enough detail to make it feel real before it is brought to the public because it will require a time investment from them. Mr. Ugoretz commented that opposition often stems from a feeling among the public that they are being “gotten around;” public involvement can help prevent this feeling.

- An audience member asked whether the panelists had noticed any changes in public and government attitudes toward wind power development since the September 11th terrorist attacks. Mr. Didisheim said he did not know of any changes specific to wind power. He said that he had noticed that more people seem willing to sacrifice the Arctic National Wildlife Refuge for oil production, but at the same time more people are getting out to connect with nature to cope with the terror. Mr. Ugoretz commented that he also is aware of the cry for increased energy independence, though he is not sure the goal will be pursued in the most environmentally friendly way.
- Ms. Nylen commented that it is not just developers' responsibility to increase public acceptance of wind power. She stressed that the public needs to be more proactive and should be encouraged to look at the broad issue and the need generally for more renewable power sources.

PANEL 4: SUMMARY SESSION: NEXT STEPS

Questions the panelists were asked to address:

- *What were the key issues and insights of your panel?*
- *What did you learn that surprised you?*
- *What next steps do you see as useful for facilitating siting and permitting of wind development in the region?*

The moderators from the first three panels formed the fourth panel. They reflected on the day's proceedings and answered questions. The discussion among them, other panelists, and audience participants included the following comments:

- Mr. Tennis recalled that Mr. Delaney had listed "regulatory novelty" as an issue of concern raised by coastal and offshore wind power projects. He commented that regulatory novelty will apply to almost every project in New England, whether on land or offshore, and present a challenge for both regulators and stakeholders.
- Mr. Swanson commented that in comparing technologies, land footprint is an important issue. He said, however, that he had not heard any major issues raised in regard to conflicts between wind power and other economic and ecological uses. He added that in general, the case studies were more successful and raised fewer ecosystem issues than he had expected.
- Mr. Tennis commented that the presenters had offered several good stories of thoughtful siting but observed that the process to take a good story and make it into a permit is rough and varied by state.
- Mr. Bailey also commented on the differences among states, comparing the well-defined process in New York to the pioneering projects in the New England states. He summarized some of the lessons learned from the pioneering projects: do a lot of outreach, do not push the limits too far, avoid public lands, and scale back the project if necessary. He commented that the integrity of the Searsburg project is an asset to the industry.
- Mr. Tennis identified mitigation measures and strategies as a useful area for future research.
- Mr. Swanson commented that continuing effort is needed in general to make wind power projects feasible for developers without compromising environmental concerns. He stressed that improving the siting process is an important next step in moving wind power forward. He commented that issues vary by state, so the process will have to vary by state.

- Mr. Manwell observed that several of the projects that have succeeded have been in towns with their own utility and, therefore, direct public involvement. Projects in which the developer benefits but the town does not benefit directly present more of a challenge. He suggested that a question for further consideration is how to share the benefits of a project more directly with the surrounding community. He acknowledged that property tax revenue is one benefit but commented that tax breaks and incentives often decrease that benefit. Similarly, Mr. Tennis later noted that one challenge of a wind power project is that it provides broad regional benefits but has a cost to the local community. He suggested that the environmental community, as people without a direct stake in any given project, may be able to help communicate to local communities the benefits of wind projects.
- An audience member commented that environmental groups are often in the position of opposing things, but clean energy provides an opportunity to be “for” something. He commented that the challenge lies in determining the specifics of supporting clean energy.
- Mr. Petlin noted that both of the difficult cases presented underwent local permitting processes while both of the successful cases underwent state-level permitting processes. He asked whether the results of the difficult cases would have been different if the permitting process had been at the state level. Mr. Ugoretz commented that one challenge at the local level is the instability of the politics. He said also that handling a wind power proposal can be very difficult for municipalities when there is no pre-existing structure to do so. He suggested it may be helpful to provide tools to local governments to help them deal with the special situation wind presents. Mr. Hecklau noted that while both the Fenner and Madison projects in New York underwent state-level permitting, the lead agency administering the process was a state agency for Madison and a local government for Fenner. Observing that both of the projects went well, he proposed that the receptiveness of the local community is more critical than which agency has oversight.

SUMMARY PRESENTATION

On October 25th, Michael Tennis presented a summary of this workshop at the Wind Powering America (WPA) New England Regional Wind Power Issues Workshop. Refer to attachment S for a copy of Mr. Tennis’s slides.

ATTACHMENTS

- A. Agenda
- B. Overview of the National Wind coordinating Committee, Gabe Petlin
- C. New England Wind Power Siting Workshop Keynote Address, Kevin Knobloch
- D. Status of Current and Future Wind Energy Development in New England, J. F. Manwell
- E. Avian Issues and Wind Power Development, Paul Kerlinger
- F. Noise as a Consideration in Wind Plant Development, Dick Curry
- G. Renewable Energy as a Coastal Management Issue, Rich Delaney
- H. Wildlife and Critical Habitat Concerns Associated with Windpower Facilities, Steve Pelletier
- I. Developing and Permitting the Madison Windpower Project, John Martin
- J. Madison Wind Power Project, John Hecklau
- K. Searsburg Win Power Facility – Early Activities Make a Difference, Martha Staskus
- L. Green Mountain power Corporation’s Searsburg Wind Project, Peter Meyer
- M. NWCC New England Wind Power Workshop, Berkshire Windpower, LLC, Dale Osborn
- N. New England Wind Projects that Did Not Get Permitted of Built, Nils Bolgen

- O. Cape Wind Associates LLC, An offshore renewable energy project, Craig Olmsted
- P. Windpower Development in New England: Ingredients for Success, John Zimmerman
- Q. Wind Power and The Wild: Can They Co-Exist? Pete Didisheim
- R. Wisconsin Wind Projects: Gaining Public Acceptance – What are the Lessons? Steve Ugoretz
- S. New England Wind Power Siting Workshop Highlights, Michael Tennis