

National Wind Coordinating Committee
Meeting on Offshore Wind Development in the United States
July 1-2, 2003

RESOLVE, Inc.
1255 Twenty-Third St. NW Suite 275
Washington, DC 20037

Meeting Participants:

Representatives participated from government, private business and non-governmental organizations. (See the full meeting's participants list for details)

Meeting Purpose:

Day 1

- ? To gain a common understanding about the potential for offshore wind development in the United States and status of current projects.
- ? Identify the universe of issues with a broad spectrum of stakeholders.

Day 2

- ? Summarize and discuss what was heard on Day One
- ? Clarify state and federal agency responsibilities in regards to priority stakeholder issues
- ? Clarify how state and federal agencies will work together to address these issues in the future

Opening Welcome

Abby Arnold, RESOLVE, welcomed attendees and outlined the meeting's purpose and ground rules. The goal was to provide an open forum for dialog away from specific project site proposals and for participants to share views with out attributing comments to others. Attendees accepted the meeting groundrules. Ms. Arnold noted that each of the presenter's bios will be added to the meeting summary on the NWCC Website, www.nationalwind.org.

Department of Energy's Wind Program (presentation is Attachment A)

Peter Goldman, Department of Energy (DOE), outlined the different programs that DOE is sponsoring in the wind arena. Much of the department's work, especially at the National Laboratories, is on research and development of technologies to reduce the costs of wind power. According to Mr. Goldman, factors impacting the success of wind power are transmission, the production tax credit, renewable portfolio standards, wind-hydro integration possibilities, air emissions and climate issues, possible use for desalination and to power fuel cells, the push for renewable energy on federal lands and offshore development. DOE's Wind/Hydro program priorities for this year include a Deep-water Offshore Wind Technology Conference in the Fall of 2003, a solicitation for low wind speed technology, phase II (with a goal of 5¢/kWh by 2012), tracking environmental issues and U.S. offshore development, assessing the technical status of offshore wind in the EU, and future activities driven by technical needs.

The Potential for Offshore Wind Development in the United States

(presentation is Attachment B)

Bruce Bailey, AWS Scientific, presented the basics of offshore wind power and then used maps to highlight the location of the best offshore wind resources in the U.S. Wind is the lowest cost

renewable energy technology, can produce bulk power, can be used as a hedge against volatile fuel prices, and diversifies the US energy supply. In terms of cost, wind energy produced by offshore projects costs about twice as much as wind energy produced by land projects. A specific benefit of offshore wind power when compared with onshore is that on the east coast it is close to load centers, reducing the cost and issues related to transmission. However, problems may arise due to corrosive salt water, higher installation and maintenance costs and access problems due to high winds or waves. Turbine manufacturing companies have been improving the technology to deal with these issues and have learned from the European experience. The Europeans have had 10 years of experience with offshore power. Offshore development in Europe is accelerating due to strong renewable energy policies, the more widespread public acceptance of wind power, and the offshore waters are relatively shallow. In contrast, the United States federal government does not have the same kind of policies, the public in coastal regions are unfamiliar with wind power, and most offshore waters are much deeper. Mr. Bailey said that current offshore foundation technology can only be used in waters up to 50 ft. deep, but that it should reach 70-100 ft soon.

According to TrueWind Solutions' wind maps, the wind speeds are greatest farther offshore but because of water depth issues, development will have to take advantage of locations closer to shore until such time as viable deep water foundations become available. Off the East and West Coasts Class 5 wind resources are generally available within 10 miles from shore, however water depths drop-off much more sharply off the West Coast. There is some potential in the Gulf and Great Lakes as well. The same maps also showed that alternative development sites on land, particularly in the East, are found within interior mountain areas far from load centers, with much of this land designated as parkland or national forests. In fact, for the East Coast states, there is significantly more windy offshore area available (minimum Class 5 resource and water depths less than 70 ft) than windy inland area (minimum Class 4 resource). The opposite is true for the West Coast.

In response to questions, Mr. Bailey noted that a minimum project size of at least a hundred megawatts is needed for a project to be financially viable. A participant with GE Wind Energy offered that turbines have a 20-year life span, just as those on land because they use ultra high reliable technology and the parts are replaceable. There was concern from one of the attendees that the turbines would require constant maintenance trips by boats-disrupting the area and polluting the water. However, a GE Wind Energy respondent noted that there are only two planned regular maintenance tune-ups a year.

The Current Federal and State Regulatory Framework for Permitting Offshore Structures
(presentation is Attachment C)

Bonnie Ram, Energetics, gave an overview of the federal, state, and local legislative and regulatory requirements to permit offshore structures. Jurisdiction is determined by the distance the development is from the shore. Between 0-3 nautical miles (nm) states have primary jurisdiction. Between 3-12 nm federal agencies have primary oversight responsibilities, but will coordinate with the states on CZM and transmission issues. Ms. Ram then highlighted a few of the regulations that will affect wind development projects. The Rivers and Harbors Act section 10 appoints the Army Corp of Engineers (Corp) as the lead federal agency on offshore wind projects up to 200 nm. The National Environmental Protection Act requires an evaluation of adverse and potentially beneficial environmental impacts for projects on federal lands that may

have a significant effect on the environment. The permit process and NEPA review happen concurrently to ensure the process is most efficient. (See Ms. Ram's presentation for a more comprehensive list of applicable regulations.)

In her conclusion, Ms. Ram summarized her remarks:

- ? The U.S. Corp of Engineers has jurisdictional and permitting authority for environmental review and NEPA documentation for offshore wind projects
- ? Multiple agencies may have authority for the same marine resource
- ? Significant state role
- ? Ambiguous ocean jurisdictions
- ? Timeframe for permitting and approvals is a minimum of 2-3 years
- ? Offshore wind is a nascent industry without statutory interpretation, case law or administrative guidance
- ? Jurisdictional gaps have not yet been identified within existing frameworks
- ? All interested parties are on a learning curve!

Ms. Arnold asked if anyone had questions for Ms. Ram. A participant asked about the legislation that is proposed to put the Minerals Management Service in charge of renewable offshore energy development. Mr. Walter Cruickshank of MMS responded that there is a bill that was passed in the House of Representatives and Senate Energy Committee, but it is a part of the energy bill, which the full senate has not voted on yet. Other issues raised by attendees were about the role of noise testing as a part of the environmental review. Ms. Ram cautioned that her regulatory list is not complete, but a brief rundown of applicable laws to give an overview of the regulatory pathway. Bob Link, Winergy, observed that much of the discussion focused on possible negative environmental impacts, and reminded everyone about the possible benefits of cleaner water and air because of wind development.

A list of current permit applications for offshore wind development projects is in Attachment D.

Overview of Issues Raised in MTC's Offshore Wind Stakeholder Process (presentation is Attachment E)

Greg Watson, Massachusetts Technology Collaborative (MTC), described the reason for and the process of the Massachusetts Offshore Wind Stakeholder Process. MTC decided that the facts about the Cape Wind Project off Cape Cod were getting lost in the media. They determined that they should step in and create a forum for discussion and the facts. MTC's mission is to increase renewable energy produced in Massachusetts. Because of that mission, stakeholders questioned the "honest broker" role of MTC. Mr. Watson pointed out that the MTC needed the process to be comprehensive, because if the project failed it would hurt MTC's mission and credibility. Different sectors joined the discussion, including the developers Cape Wind, environmentalists, local community leaders, and concerned citizens. The goal was not to reach consensus about the wind farm, but to get consensus on the questions that needed to be asked and have them framed by the right people. The Army Corp brought regulators to the meetings to serve as a resource and to listen and learn. The process produced these conclusions:

- ? The Coast off the NE has strong and steady winds

- ? The US wasn't prepared to deal with offshore wind proposals
- ? More Research and Development is needed
- ? It is clear that the Cape Wind Project is under review in line with the necessary comprehensive process

Impacts that have not been resolved include:

- | | |
|-------------------|------------------------------------|
| ? FAA lighting | ? Marine mammals |
| ? Tourism | ? Air quality |
| ? View shed | ? Price reliability of electricity |
| ? Migrating birds | ? Speculative development |
| ? Fishing rights | ? Price for use of a public good |

In order to address some of these issues, the state has been working on an Ocean Management Plan that will include aquaculture, recreational needs, fishing, and wind power. One of the benefits of the MTC process is that now wind power has a seat at the table to decide on ocean resource uses.

Stakeholder Discussion

The meeting then turned to the stakeholders who were present. All were given the opportunity to speak. There were two categories of comments: issues/concerns, and next steps/action items on three broad groups of topics: technology, environmental, and regulatory issues. The comments are grouped by general topics rather than priority or chronological order.

Issues/Concerns:

Technology

- ? Exposure of the cable under water and on the beach
- ? Connection to the hydrogen economy
- ? Insurance for the turbines
- ? Security for the facilities
- ? Lighting for boat navigation

Environmental

Community Issues

- ? Aesthetics- visual change in the landscape
- ? Boat traffic and impacts on ports
- ? Impact on fishing operations
- ? Other ocean users are not regulated
- ? Property values/Housing prices (Renewable Energy Policy Project study)
- ? Need to take into account public perception
- ? In some National Parks, must take view shed into consideration

Siting and Ecology Issues

- ? Need more research of impacts
- ? Proper siting and review
- ? Look at potential risks now instead of later
- ? Effect on climate change
- ? Can predict impacts, but won't really know until projects are in the ground

- ? If US proceeds with development, need ongoing monitoring to learn from projects
- ? Compliance with the Endangered Species Act
- ? Compliance with the Marine Mammal Protection Act
- ? Compliance with the Quality of EU research data

Regulation

System/Process

- ? All government agencies are in it together; need to figure out questions to ask
- ? Regional as well as state/federal coordination needed
- ? Need a clear planning framework
- ? Current permitting system needs to be more efficient
- ? Need transparent process
- ? Decreased investment in projects due to regulatory uncertainty
- ? Public involvement is important
- ? Communities are being brought into process too late; after a permit is applied for
- ? Developers are running the process
- ? Public loss vs. private gain-pay for use, not consistent across industries
- ? Existing framework is suitable, just need to let it work
- ? Open and Responsive review process
- ? Growing number of ad hoc permit applications to the Corp
- ? Fear of over development may not be necessary-need to look at many sites to find one

Regulations

- ? Taxes on production cover public goods question
- ? Minimal filing fee for a permit
- ? Siting conflicts with other renewables
- ? FERC's jurisdiction over ocean energy projects needs to be explored
- ? Transmission
- ? Unfair treatment for wind industry-compared with other industries
- ? Different between deregulated and regulated states
- ? Impacts of the transfer of offshore wind structures to MMS jurisdiction
- ? Allowing current projects with best available knowledge is okay, will learn through process
- ? Developers understand that laws may change and are willing to deal with that possibility
- ? The future regulatory changes shouldn't hold up current development
- ? Grandfather old projects if new standards are put in place
- ? A moratorium would be against all interests

Questions that need answers

- ? Effects of the wind shadow
- ? Effects of electromagnetic fields
- ? Infrasound-low pitches effects on marine mammals

- ? Cumulative impacts
- ? Water pollution-boat traffic for maintenance
- ? Birds- migration and nesting, strike and displacement
- ? What role should the White House Task Force on Energy Project Streamlining take?
- ? Definition of a complete application- Army Corp
- ? Preferable method: permit then research, or research then permit?

Options to address issues/concerns

- ? Form a standing group to deal with these issues (Within NWCC, within a government agency, independent policy group....)

Technology

- ? Improve low wind speed technology
- ? R&D deep water capabilities
- ? Use state funds for investment
- ? Organize a field trip to facility for all to see how turbines really look, sound and work
- ? DOE hold a two day meeting this Fall in Boston

Environmental

- ? Use a screening tool to determine concentrations of sensitive marine areas
- ? Overlaying maps of highly sensitive areas that prohibit development, "red zones"- no go
- ? Overlaying maps of sensitive areas that limit development, "grey zones"
- ? Create a generic EA- "best practices document"
- ? Develop general tests for issues that crossover multiple projects, then individual developers will only have to look at site specific issues
- ? Government agencies need to develop list of questions for future research
- ? Environmentalists need to work together to decide priorities for protection
- ? Determine impact of newly released FWS voluntary guidelines
- ? National Park Service white paper (need to connect Dave Reynolds, NPS to Lee Otteni, BLM)
- ? Connect Doug Forsell, FWS, with wildlife workgroup

Regulation

- ? Protocol for pre and post construction study for environmental impacts
- ? Develop energy resource priorities- ie. prioritize wind development
- ? Plan to get MMS up to speed if/when they become the lead agency
- ? Prepare chart with roles and responsibilities and regional contact names
- ? Database of new project applications and status
- ? Require proof from developers that have skill and financial ability to complete process
- ? Leasing payments/easements
- ? Zoning
- ? Competitive bidding process
- ? Use BLM guidelines as a starting point

? FWS guidelines for siting turbines (these are released, see <http://www.fws.gov/r9dhcbfa/windenergy.htm>.)