BOEM Offshore Wind Leasing
A Workshop to Discuss the Offshore Leasing Process and Best Management Practices to Reduce User Conflict

April 8, 2014
Montauk Yacht Club, 32 Star Island Road, Montauk, NY 11954

Participants: Please see listing of attendees beginning on Page 15. Over seventy (70) people participated, including fishermen, other ocean services such as ferry operators, advocacy organizations, state and federal agencies, and contractor support staff.

I. Welcome Statements and Review of the Process

Rick Robins, Chair of the Mid-Atlantic Fisheries Management Council (MAFMC), welcomed participants to the meeting. He thanked the Bureau of Ocean Energy Management (BOEM) for scheduling the meeting to coincide with the MAFMC meeting, thereby allowing a greater number of people to attend. He noted that he has toured offshore wind energy developments in the United Kingdom and that the significant scale of the development there is quite impressive. He explained that one of the lessons from Europe is that early engagement from the fishing industry is critical to mitigate negative impacts and influence siting decisions. The U.K. has over 22 years of experience with offshore wind energy development and their recent experience in collaborating between developers, regulators, and fishermen has been great. However, the first two rounds of siting were very adversarial, and having learned from this, the third round was much more collaborative. Mr. Robins said that he would like to see the process in the U.S. transition into that collaborative phase much more quickly. He closed by acknowledging that it while can be hard to sustain participation in meetings like this, engagement by the fishing community is very important.

Maureen Bornholdt, Program Manager for BOEM's Office of Renewable Energy Programs, welcomed everyone. She said that her agency has learned much over the past couple of years and is still learning. For example, BOEM had a very confrontational meeting with fishermen in New Bedford a couple of years ago and, since that time, the agency has rethought its approach to engaging with the fishing community. BOEM understands that the agency is the "new kid on the block" in many ways and that ocean resources have many uses already. The agency wants to help make offshore energy development work for everyone and is developing a set of Best Management Practices specifically to address potential impacts on fishing activities.

Michael Snyder, NYS Department of State (DOS), said that his agency knows that the potential effect on commercial fishing is one of the primary concerns around offshore wind energy development. He emphasized that DOS wants to continue to hear from the fishing community and requested that fishermen both take advantage of this opportunity and stay

involved in the future.

Jacques Roeth, New York State Energy Research and Development Agency (NYSERDA), explained his agency's mission as advancing innovative energy solutions that advance New York State's economy. He said that NYSERDA looks at the many facets of an isuse and does not take sides. The agency hopes to find solutions that work for all the parties at the table. NYSERDA wants to advance offshore wind and do it in a way that works for the fishing industry. He closed by saying that he really appreciated so many people coming to the meeting.

The facilitator, Patrick Field of the Consensus Building Institute, reviewed the agenda and "rules of the road" for the meeting. He explained that the Montauk meeting is a continuation of a series of eight workshops that BOEM held along the East Coast to take input from ocean users, particularly fishermen of various gear types and species, on the draft Best Management Practices developed by BOEM. He explained that the meeting would focus on these Best Management Practices and requested that those in attendance provide feedback on the proposed practices.

The draft Best Management Practices for reducing user conflict in off-shore wind development can be found at the following URL: http://www.boem.gov/Fishing-Offshore-Wind-Mitigation-Measures-Development-Workshops/.

II. Overview of U.S. Offshore Wind Development

Maureen Bornholdt, BOEM, presented the history and recent progress of offshore wind development in the U.S., next steps, and the process for future offshore wind on the East Coast. The presentation slides shown by Ms. Bornholdt can be found at: http://www.boem.gov/BOEM-OREP-NY-Presentation/.

Ms. Bornholdt explained that BOEM oversees development of the nation's oil and gas, renewable energy, and other mineral and energy resources on the Outer Continental Shelf. She noted that the agency had a confrontational meeting with the fishing community in New Bedford during 2012 and had learned from that experience that it must speak in the language of the public and stakeholders, not just agencies. She explained that there are four stages to BOEM's offshore wind authorization process:

1. *Planning and Analysis*: New York State is currently at this stage of the process. BOEM has convened an intergovernmental task force to work with partners through the authorization process, and this mechanism also allows the agency to solicit input from the fishing community through Fisheries Councils. During this stage, BOEM publishes a call for Information to learn more about a specific potential wind development area or areas offshore of a state. For example, in the area identified by the New York Power Authority for its proposed project, BOEM knows that scallop

fishing is of particular concern, that the National Park Service has viewshed concerns, and that there is an offshore Liquid Natural Gas (LNG) facility proposed for the same location. Taking this sort of information into account, the agency conducts an environmental analysis and subsequently defines the specific areas that will be leased out for offshore wind energy development. BOEM is collecting information from fishermen and others about the situation and concerns regarding leasing offshore of the Mid-Atlantic states in order to help identify which specific areas should be leased *(see slide #12 for additional information).*

2. *Leasing*: There are options to undertake both competitive leasing procedures (for wind energy development areas where more than one party is interested in leasing development rights) and non-competitive leasing procedures (for wind energy development areas where only one party is interested in leasing development rights). After BOEM publishes a leasing notice and conducts environmental reviews, the agency issues a lease, which conveys the right to submit plans for BOEM's approval *(see slide #13 for additional information).*

3. *Site Characterization and Assessment*:
   At this stage BOEM reviews and must approve the lessee's Site Assessment Plan (SAP) if the lessee intends to install a meteorological tower or buoy. After signing the lease, the lessee has up to five years to conduct surveys in the lease area *(see slide #14 for additional information).*

4. *Construction and Operations*: During this stage, BOEM considers the lessee's Construction and Operations Plan, i.e., the site development plan, while soliciting public input. BOEM will then approve the site development plan, approve the plan with conditions, or disapprove the plan. The most likely outcome is that BOEM will approve the plan with conditions. The use of conditions allows the agency to shape the site development plan to better respond to public input. Developments offshore of New York State are still in the Planning and Analysis stage, and therefore future lessees will have ample time to address compliance with the Best Management Practices and to consider public input before any survey or site development activities take place *(see slide #15 for additional information).*

Ms. Bornholdt reviewed three maps *(see slide #4)* showing the current state of offshore wind energy development along the Atlantic Coast. She noted that projects in different states are at different stages of the leasing process, with projects in some states, such as New York, still in the Planning and Analysis stage, and other states, such as Massachusetts and New Jersey, at the Leasing stage. She explained that BOEM understands that fishermen work up and down the coast, and not just in the immediate geographic area where they are based. The agency is asking fishermen to provide input to the draft Best Management Practices and to helping define the leasing areas. To illustrate the impact that public input can have, Ms. Bornholdt showed a map of a Deepwater Wind leasing area off the coast of Rhode Island

and Massachusetts *(see slide #5)* in which BOEM created a horizontal "cut-through" where wind energy development rights would not be leased in response to commercial fishermen who provided information highlighting their activities in this area. Ms. Bornholdt also provided updates on offshore wind energy planning and leasing areas off the U.S. Atlantic coast more generally (*see slides #6-9)*.[1]

Ms. Bornholdt concluded by summarizing the opportunities that BOEM is providing for public comment and input for wind energy development on the outer continental shelf, which include workshops such as these, public comment times during State Task Force meetings and scoping meetings, hearings pertaining to the National Environmental Policy Act (NEPA), and responses to various types of federal register notices (*as detailed on slide #10*).

Following Ms. Bornholdt's presentation, workshop participants had a number of questions and comments, which are reproduced below. *Responses from government agency officials are indicated in italics.*

- You do not mention the sport fishing industry. Just some fact and figures here: the sport fishing industry on Long Island is a $4 billion industry, excluding the sale of boats. The industry employs 10,000 people full and part time, and there are also 1 million recreational anglers. We're talking about a very important industry and you have to consider that. Our concerns are as follows: LNG facility offshore has boats that pick up LNG and bring it onshore. In contrast, with wind turbines, you all will have cables coming onshore that will create conflict for boats. Second: we can give you a chart of all of the fishing areas that we would like you to avoid. This will help you avoid political issues down the line. I've also left further written comments here. We'd like to take part in this public process and appreciate the opportunity to do so. I also want to emphasize a couple of things that we support: our association supports sound renewable energy and we support new jobs and development, but we don't want the sport fishing industry to be restricted in accessing certain areas or encounter dangers in crossing cables.

- Nobody really knows what we're allowed to do and what we're not allowed to do around these things [wind turbines]. Are we required to stay miles away from it? Can we go right up to it? We don't want to have to steam 5 miles around. Basically, you'll be in everyone's [fishermen's] way. You've got the draggers and the towers, and all

[1] The following acronyms are used on these slides: NREL: National Renewable Energy Laboratory; RFI: Request for Interest; PSN: Proposed Sale Notice; MA: Massachusetts; WEA: Wind Energy Area; RI: Rhode Island; SAP: Site Assessment Plan; DWW: Deepwater Wind; NY: New York State; DNCI: Determination of No Competitive Interest; VA: Virginia; EA: Environmental Assessment; NJ: New Jersey; MD: Maryland; PSN: Proposed Sale Notice]; NC: North Carolina; IP: Interim Policy; MHK: Marine Hydrokinetic; GA: Georgia.

different types of boats and fishing gear are going to have to figure out how their equipment will interact with these turbines and cables and what kinds of problems are going to happen. All of these questions are almost useless until we have more detail on what's allowed and what isn't. *Ms. Bornholdt, BOEM response: We don't tell anyone that they have to stay away, and we legally can't even tell people to stay away. Some of the structure, however, may be built in such a way that would prevent boats from coming too close. Our concern isn't limiting your activity or ability to fish, it's about ensuring safety. Do give us your questions to help us understand what your concerns are and what information we need to find out and provide back to you. The Coast Guard will work with the wind energy developers to define safe practices around the turbines. We don't know exactly what will be proposed in terms of development and the exact specifications of the turbines, but generally the more information we have from the fishing community, the better we can design this.*

- Are the cables going to be between towers or are they going to be between the turbines and the shore? *Ms. Bornholdt, BOEM response: Cables will be both between turbines and from the turbines to the shore. Ms. Michele DesAutels, U.S. Coast Guard response: My name is Michele DesAutels, and I'm from the Coast Guard. We are working closely with BOEM around these offshore wind developments and we are providing feedback and input to make sure that everyone can do things in a safe way.*

- As far as the access issue goes, there's a 50-meter recommended safety zone around the turbines. In the North Sea, when the Danish government developed their policies around access, they basically shut the fishermen out of the waters around the turbines. That was pretty much because the fishing community didn't get involved early in the process. *Ms. Bornholdt, BOEM response: Our leases and our plan approvals here in the U.S. don't have the ability to shut people out. Andrew Krueger, BOEM response: I work for BOEM. A good example for this gentleman's question is the Cape Wind process off the coast of Massachusetts, and there we worked with the fishing community to develop the leasing area and there is no exclusion zone at all as part of that project. So we have the ability to work with fishermen and other local concerns and design projects in a way to avoid causing people unnecessary hardship.*

- A question for the Coast Guard: have you thought about putting a fisherman on some planning group so that the Coast Guard can better understand the conditions in the ocean and on the ocean floor? I would recommend having fishermen who use different gear types directly involved, since they understand the realities of the ocean better than anyone. *Ms. DesAutels, U.S. Coast Guard response: BOEM is the lead agency around the development of policy around offshore wind energy, but we are working closely with them on this. The Coast Guard does have Harbor Committees that include representatives from local fishing communities. Ms. Bornholdt, BOEM response: We are working through state agencies, such as the New York State Department of State, to get the best information that we can from fishermen.*

Unfortunately, there are federal laws (e.g. Federal Advisory Committee Act) that regulate how we work with stakeholders outside of government, and so we can't make policy directly with fishermen or other external stakeholders, but we are taking input from you and will be incorporating that input into our policy-making process.

- I'm glad to see that you're [BOEM and other government representatives] here taking information early. When fishermen are asking about cables and structures, that's an indication of what our concerns are and what we want you to keep in mind. Fishermen have to obey the Fisheries Management Council's rules, but in this case, fishermen are the public that BOEM is representing. Also, we want to remind everyone why we're having these turbines: we had a 3-day session in Washington about the impacts of climate change and it's having a tremendous impact on the marine environment. With ocean acidification, we need to make big changes on how we get energy. So we need to see energy from renewable sources, and I really applaud your doing this.

- I'm a fisheries biologist by training. What I'm concerned about is that, it seems to me that, even using the European data, we don't really know what the impacts of installing these structures will actually be on the wildlife in the seas. So it seems like people are saying: let's do a few of these and see what the impacts will be. In the terrestrial wind industry, they put up turbines and we're getting empirical data that is showing hundreds of thousands of birds and bats killed every year. So we don't know about what's going to happen offshore, including because the conditions offshore from Europe are so different from the conditions here in the Atlantic. *Ms. Bornholdt, BOEM response: This is very hard, because we know less about the oceans than we do about the land. But that's why we're going through a step-wise process that will build in monitoring into the development program. There is also a science studies group in place to evaluate scientific data and findings. We also have a provision that, after 25 years, the permit has to be renewed, and we can say that the operator has to go through the permitting process again. We can also tell operators to stop operations if we're seeing too much of an impact.*

- Based on the diagrams that I've seen of offshore wind energy development, often the distance between turbines is one-third or one-half of a mile, and that's not very much distance when there's violent offshore weather. That presents a danger to fishermen and other boats at sea. Are you looking at this? *Ms. Bornholdt, BOEM response: One thing that we're seeing is that the wind energy facilities that are built offshore here may be taller and larger than the facilities in Europe. In that case, spacing would be greater between the machines than the one-third or one-half of a mile distance that you may have seen between turbines in other places. We'll also add on considerations of navigation and safety in the placement of the turbines as needed.*

- We used to long-line cod fish. People use different cables; the people who used stainless steel would be fine. But the people who used regular steel wouldn't catch anything. There was some electricity that the fish didn't like. I don't know if there have been any studies about this sort of thing, but the underwater cables could create an electronic fence effect or something like that that would impact the fish populations and the fishing. *Ms. Bornholdt, BOEM response: Some studies of electromagnetic fields have been conducted around wind turbines and underwater cables, and Brian Hooker from my staff can talk more about that later this morning. That's the type of input that we're looking for and we'll look into that issue further.*

- It's critical to get this sort of information. Send ROVs down to do the study. Offshore turbines in other areas have had huge scour zones. You could be creating mini dead zones, and I don't think that's the desire under the guise of green energy. You need to do a lot more study on these things before you move forward with permitting these turbines offshore.

- We've heard about problems to fishermen, but let's talk about impacts to fish. Right now, fishermen are accountable for the stocks of fish and, right now, any adverse impacts on fish stocks are chalked up to fishermen. But if there are impacts on fish stocks due to the turbines, who is going to take responsibility for that? *Ms. Bornholdt, BOEM response: We're going to perform the analytics to figure out what the impacts are of a development on both the fisheries and the fish. If needed, we can put in place operating conditions, or ways to mitigate silt and other issues. What happens after that, we don't know as much about, and we'll have to work with the NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO) and others to learn more about this. We will work to get the right people around the table to make sure that we can get the data that we need. Michael Snyder, New York State Department of State: We know that we need to keep our eye on the status and potential impacts to commercially-important fish stocks. We are working to stay abreast of this issue. Mr. John Bullard, NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO): I'm not a scientist, but in terms of assessing the impact of constructing 100-200 wind turbines on yellow tail flounder, this doesn't seem like the central issue. We've had 5 of the lowest recruitment years of yellow tail and the scientists don't know what the cause of that is. We've had some of the warmest temperatures in history. There are a lot of factors, and all of these need to be taken into account before we conclude the wind turbines are the cause of the fish disappearing.*

- In many cases, there is evidence that artificial structures in the ocean can improve biological productivity in the immediate vicinity, so the turbines could improve fishing.

- How did you reach that figure of 25 years for a permit? I read that the pay-off period for these turbines is 25 years. I don't know that the economics of offshore wind

energy actually make any sense. I think that this thing is a huge boondoggle. I don't know how you people can rationalize putting these structures in. Are there going to be bonds to take the turbines out after 25 years? Also, he asked a very good question, and it seems like NMFS [NOAA National Marine Fisheries Service] is dodging the question by talking about warm winters. *Ms. Bornholdt, BOEM response: The reason that I used 25 years is because they have 5 years to do site characterization work. After that, the operators have at least 25 years under the operating permit for a total 30-year lease term. At each stage, the operator is required to have a bond to cover various aspects of operations, including removal. For decommissioning, the rule currently says that the operator has to remove it after 25 years, and the bond would cover the decommissioning cost. But some people have said that they would like the turbines to stay in place possibly, especially if they've improved the biota. The economic decision about whether the structure is profitable is up to the operator. That's not a government decision.*

- If there isn't an economic return, then you'll be putting hundreds of people out of business for an uncertain return. Are you guys [the government] going to pay us not to fish?

- All this fuss and feathers about these wind farms, but about 40 years ago, the oil industry came up here like gangbusters. The oil industry found their biggest problem in working right here in the Atlantic, because they couldn't do their work in these sea conditions. Have these wind companies ever consulted with the oil companies about the environmental conditions here? All of this might not come to anything.

- I represent the scallop industry and I'll put out there that the physical reality is that wind farms aren't compatible with the scallop industry. They don't migrate. If you put a wind farm there, there won't be any scallop industry. Ultimately, is there a "go" or "no go" about whether the industry can construct and who makes that call? *Ms. Bornholdt, BOEM response: That's why we do an environmental assessment. We'll do analytics to figure out if there's a way to do mitigation or to use best management practices to minimize disruption to fishermen. Ultimately, there may be a no-go area, but we need more information from you to develop those standards.*

- Is the development of the go / no-go standards going to be done in a public process? *Ms. Bornholdt, BOEM response: Of course. It will definitely be a public process. We're hoping to work with all of you around data collection and developing the standards. Right now, I don't know what the standards for go and no-go would be, but working with all of you, we're hoping to use the data to figure out what the standards should be. Remember, this is a relatively new process and we are working out to the best of our ability to anticipate next steps and needs to ensure building a solid permitting process.*

III. New York Commercial Fishing Ocean Use Mapping

Justin Kirkpatrick, National Oceanic and Atmospheric Administration (NOAA) Fisheries Service, made a presentation about the agency's work mapping commercial fishing activity. The presentation slides shown by Mr. Kirkpatrick can be found at: http://www.boem.gov/NY-Presentation-Kirkpatrick/. He noted a longer presentation on this same effort would be given to the Council tomorrow [Editor's note: The fuller presentation is available on the Council's website: http://www.mafmc.org/briefing/april-2014 .]

Mr. Kirkpatrick explained that his role is to develop a baseline map representing fishing activity. He also asked meeting participants to understand that the maps that he would show are preliminary and that he is looking for input about the accuracy of the information shown on the maps and, in particular, wants to make sure that all types of fishing activity are represented on the maps. The maps also do not show recreational fishing activity, but NOAA is working on integrating this information into the maps. Mr. Kirkpatrick also explained that he would be using a concept called "exposed revenue," which is fishing revenue that data show is most likely sourced from inside a proposed wind energy area. However, he stressed that "exposed revenue" is not an actual economic loss because it is not clear "exposure" would actually result in loss (i.e., you might still be fishing in that area and doing fine in terms of catch).

Mr. Kirkpatrick showed a series of maps illustrating fishing activity in the New York – New Jersey – Connecticut offshore areas between 2007 and 2012, as derived from data from vessel trip reports (VTR data). He noted that there is some overlap between sea scallop harvest areas and the proposed wind energy area, although this overlap was more pronounced in some years (such as 2008 and 2009) than in other years. Mr. Kirkpatrick noted that there would be some WEAs that barely if at all affected fishing as predicted from past fishing data, and other areas, especially upon a small number of permit holders, where it could be significant. For instance, preliminary findings suggest that of 752 NY permits issued, revenue exposure would be about $550K from the NY WEA, $250K to the MA WEA, and $1K to the NJ WEA.

Following Mr. Kirkpatrick's presentation, workshop participants had a number of questions and comments, which are reproduced below. *Responses from government agency officials are indicated in italics.*

- The best way to mitigate impacts is to avoid conflict, and that can best be done through siting decisions that keep development out of fishing areas. One of the problems that we have is that the data sets, the VTR data sets, aren't of uniform quality. For different fish species, we aren't confirmed to have all of the fisheries on the map. These data sets were never developed for fine-scale spatial decision-

making. We need to figure out how to get that data.

- Ground fish live on the ground, and placing wind turbines on the ground will impact these stocks. This will inevitably hurt the fishermen because their stocks will be limited and there will be more choke fish. In terms of mitigation: for oil and gas, there's only a $2 million fund, and this doesn't cover leaks. Right now, there's no mitigation fund for wind. That needs to change. If something goes wrong, we need to be covered.

- There's a potential for mapping fatigue in the industry. There's Justin's project, which is a BOEM project, and there's also a Rutgers project, and others. I'm very concerned about these multiple mapping projects that are coming up. It's a very difficult thing to do to get fishermen in the room and I'm concerned about the lack of coordination between BOEM and the Regional Planning Process. *Mr. Kirkpatrick, NOAA: That's a real concern and, to avoid that, we're almost entirely working on existing data sets. We've been trying to use existing data as much as we can in my study. Ms. Bornholdt, BOEM: I am sensitive to concerns about overlap. The Regional Planning process is bringing together various agencies so that we can better coordinate, but we need to better address this issue.*

IV. Description of BMPs for Reducing User Conflict in Off-Shore Wind Development

Brian Hooker, staff biologist for BOEM, presented on BOEM's draft Best Management Practices (BMPs) for reducing user conflict in off-shore wind development. The presentation slides shown by Mr. Hooker can be found at: http://www.boem.gov/Fishing-and-Offshore-Energy-Best-Practices/.

Mr. Hooker reviewed the four stages of development introduced by Ms. Bornholdt and explained that the BMPs would apply during the latter two stages of the development process, when wind energy developers begin conducting site assessment and once they begin construction and operation activity.

Showing diagrams of different foundation types used to support offshore wind turbines *(see slide #4)*, Mr. Hooker said that the industry is increasingly moving toward lattice and tripod structures because of the larger size of the next generation turbines being installed. However, the studies on the sound effects of pile driving are largely based on monopile foundations, so further study will have to be conducted to evaluate the biological impact of these new foundation types. He added that currently no floating turbines are being proposed in the Atlantic Ocean. Showing a slide from Deepwater Wind *(see slide #5)*, Mr. Hooker stated that the modern turbines installed offshore could be approximately 2640 meters apart and 75 meters above the mean water line, though this would vary by project.

Mr. Hooker reviewed the process that BOEM used to the BMPs, explaining that BOEM and Ecology and Environment [a consulting firm] consulted with state and Federal partners, the fishery councils, and wind industry representatives over the course of eight workshops. He added that the initial 60-day public comment period for the draft BMPs had been extended and was still open *(see slide #6)*. Mr. Hooker went into further detail about the eight BMP workshops, noting that BOEM wanted to delve deeper into the potential impacts of construction with the stakeholders so that the agency will have that information before it proceeds with any construction plans *(see slide #7)*. The current draft of the BMPs tries to capture all input received and the draft may be revised for clarity and fewer redundancies in the future *(see slide #11)*.

Mr. Hooker reviewed the draft Best Management Practices (BMPs). Further detail about the draft BMPs can be found on slides #12-16; the draft BMPs can be found at the following URL: http://www.boem.gov/Fishing-Offshore-Wind-Mitigation-Measures-Development-Workshops/.

- *BMP #1: Fisheries Communication and Outreach Plan:* Mr. Hooker stated that this may be the most important BMP and that BOEM has largely replicated the model used in the United Kingdom.

- *BMPs #2, 3, 5: Project Siting, Design, Navigation and Access:* Mr. Hooker explained that the applicant would be encouraged to consider input regarding a variety of issues to reduce disruption to other users. He also noted that the Coast Guard is very hesitant to establish exclusion zones and that the establishment of an exclusion zone would require an extensive public process. He also suggested that transit corridors between turbines could be established to facilitate fishermen returning to shore in case of a storm.

- *BMP #4: Safety:* The safety provisions included in this BMP are mostly included in federal regulations. Mr. Hooker also mentioned that the BMPs suggest marking turbine structures to make it easy for vessels to determine their own locations in relation to the turbines.

- *BMP #6: Environmental Monitoring Plan:* Environmental monitoring is required under federal regulations; this BMP would provide additional detail as applicable to offshore wind energy development.

- *BMPs #7-9: Financial Compensation:* Various types of financial compensation, both for adaptation to the new environment and for compensatory mitigation, are suggested.

Mr. Hooker reviewed the socioeconomic and biological studies that BOEM is participating in or conducting. On the socioeconomic side, the agency is processing present and historical

fishing usage data and evaluating the socio-economic impact of offshore wind energy development on fishing. Part of this effort is to look at fishing data from a long time horizon, including digitizing the Walford and Freeman fishing atlas from the 1950s. On the biological side, BOEM is involved with benthic habitat mapping and assessment, conducting a ventless trap survey, and continuing to conduct studies on both electromagnetic fields (EMF) and fish acoustic impacts *(see slides #17-22).* He noted that an EMF study is currently being conducted in situ [as opposed to in a tank] and described both the benthic habitat studies and lobster ventless trap studies currently underway.

Following Mr. Hooker's presentation, workshop participants had a number of questions and comments, which are reproduced below. *Responses from government agency officials are indicated in italics.*

- Why are people putting these wind turbines in the ocean? Why can't people just put these on the land? That seems much simpler. What happens when something goes wrong? What happens if there's a major oil spill or a collision with a wind turbine? *Mr. Hooker, BOEM response: BOEM's role, and these BMPs, are focused on the process for someone wanting to put a wind turbine development in the ocean. Around navigation risk assessment, BOEM works very closely with the Coast Guard to make these practices as safe as possible from oil spills and other circumstances.*

- Will the Mid-Atlantic Council be willing to take responsibility for the fact that windmills could conceivably lead to a collapse of a fish stock or fish stocks? *Mr. John Bullard, NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO): If someone could give me some rational, scientific reason and connection between the installation of wind turbines and the collapse of fish stocks, we could take a look at that. At present, I'm not seeing any link of that sort.*

- Just want to say that we have a gentleman here from the UK (Tom Watson) who has been working with the fishing industry and the wind industry there for years and I want to let everyone know that he'll be here as a resource for all of you over the next couple of days [Editor's note: Tom Watson's presentation to the Council is available here: http://www.mafmc.org/briefing/april-2014].

V. Review Best Management Practices and Studies

Meeting participants met in breakout groups to review and discuss the draft BMPs as well as other issues. The following themes emerged from these breakout discussions. In the case of questions, *responses are provided in italics*:

Communication and Outreach

- How stakeholder groups apart from the fishing community can participate in BOEM's public outreach process and in providing feedback on the BMPs.
- The government should have a fisheries liaison – this needs to be the right person who can speak to all stakeholders.

Data Issues

- The need to look at a longer time horizon than 6 years to understand fishing patterns.
- Using the Simrad CM60 ChartMapping System to improve data on fishing patterns over what Vessel Trip Report (VTR) data can provide.
- The difficulty of doing an "inverse-mapping" exercise to identify areas that are *not* important to the fishing industry, since just about any area will be important to a certain type of species or gear.
- How the BMPs and BOEM's overall offshore wind energy development process will account for climate change and climate change data.
- There is mapping fatigue by fisherman from too many surveys. Mapping projects need to be coordinated.

Access and Proximity to Arrays

- There is a big risk of fishermen running into the turbines in rough seas. *One option is to put AIS transponders on the turbines and a fog horn on the perimeter, perhaps proximity sensor based so that it does not go off all the time.*
- How close can fishermen come to the wind energy infrastructure?
- Could we have assurances that the Coast Guard will not issue an exclusion zone unless they first ask for public input?
- Many fisheries are highly dynamic and maybe in one place one year, another the next. Take squid – the best squid fishing could take place in right in an exclusion zone one year – really hurting revenue.
- What about all the hazards the structures will pose to expensive gear like nets and the like?

Bonding and Liability

- Has BOEM identified how liability will be apportioned? *BOEM is creating a plan to establish communication channels between parties to deal with future liability issues.*
- Are offshore wind turbines bonded for removal? *Bonds are required by developers for removal.*

Distribution and Electric Line Issues

- How does "leakage" of electricity from power cables affect steel fishing lines?
- What EMF studies have been done?

Management, Decision-making, and Regulation

- The option for fishermen to lease areas: fishermen could come together to lease land for offshore wind energy development, but not for exclusive fishing rights in a leased area. BOEM's leases are only for the purposes outlined in the leases (wind energy development).
- The details of the permitting process: who makes the decision that a developer has met all necessary criteria? *BOEM ensures that the information provided by the developer is complete and adequate, and once this is done, a public comment period is required by law.*
- What happens if new information comes to light once development starts, such as the crashing of a fish stock? *Generally, there would be a discussion between different interests about responsibility and how to move forward, but in certain cases, BOEM does also have the authority to cancel a lease.*
- The regional fisheries management councils should play a larger role in the planning process for offshore wind energy development.
- Reconcile the NMFS regulatory environment –bycatch will lead to industry shutdown.
- Just really worried that overall this is one more nail in our coffin – one more pressure that will further harm our ability to fish.

Meeting Attendance

First Name	Last Name	Affiliation
Ed	Andresen	
Dave	Aripony	Fisherman
Lee	Audrey	XXAMC
Bruce	Beckwith	
Sharon	Benjamin	NOAA
Maureen	Bornholdt	BOEM
Bonnie	Brady	Long Island Commercial Fishing Association
John	Bullard	NOAA
Noah	Chesnin	Wildlife Conservation Society
Karen	Chytalo	NYS Department of Environmental Conservation
Benson	Chiles	Chiles Consulting
Kevin	Chu	NOAA
Brian	Culkene	
George	Darcy	NHFS
Jeff	Deem	MAFMC
Michele	Des Autels	US Coast Guard
Jason	Didder	MAFMC
Alexandra	Donargo	
E	Edwards	
Charles	Etzel	
Patrick	Field	CBI – facilitation team
Stacy	Foger	Point 97 / MARCO portal
Carl	Forsberg	Viking Fleet
Steven	Forsberg	
Rav	Freidel	Concerned Citizens of Montauk
Kristin	Gerbino	Cornell Cooperative Extension Marine Program
Joseph	Gordon	PEW
Mark	Harring	Newsday
Steve	Heins	NYS Department of Environmental Conservation, MAFMC
Dewey	Hemilright	
Julie	Herily	CBI – facilitation team

Brian	Hooker	BOEM
Michael	Jarbeau	USCG
Richard	Jones	Pontos Fish
Jeff	Kaelin	MAFMC
Aileen	Kenney	Deepwater Wind
Howard	King	MAFMC
Justin	Kirkpatrick	NOAA
Evan	Kolkos	New York Power Authority
Andrew	Krueger	BOEM
Hank	Lackner	
Gregory	Lampman	NYS Energy Research and Development Authority (NYSERDA)
Arnold	Leo	Town of East Hampton
Michael	Luisi	MAFMC
Kevin	Maguise	Fisherman
Drew	Minkiewicz	Kelley Drye and Associates (Fisheries Survival Fund)
Capt Joseph	McBride	Montauk Boatmen Captain's Assoc.
John	McMurray	MAFMC
Stewart	Michels	MAFMC
Chris	Moore	MAFMC
Peter	Moore	MARACOOS
Laurie	Nolan	MAFMC
Robert	O'Reilly	VMRC
Peg	Parker	CFRF
Larry	Penny	
Jamie	Quaresinio	
Orla	Reville	Viking Fleet
Rick	Robins	MAFMC
Jacques	Roeth	NYSERDA
Brian	Rooe	Com NY
Sal	Ruggeiro	Shinnecock Indian Nation
John	Scotti	Cornell Cooperative Extension Marine Program
Richard	Seagraves	MAFMC
Michael	Snyder	NYS Department of State
Charles	Steinback	Point97 / MARCO portal
Jacqueline	Stent	Cornell Cooperative Extension Marine Program
Terry	Stodwell	NEFMC
Mark	Torpey	NYSERDA

Victor	Vecchio	NOAA
Stuart	Vorpahl	Commercial Fisherman
Tom	Watson	Dong Energy UK
Charlie	Weimar	Commercial fisherman
John	Williamson	Ocean Conservancy
Chris	Wood	
Richard	Wright	US DHS
Beth	Young	East End Beacon