In the Matter of:

VISUAL SIMULATION BY U.S. DEPARTMENT OF INTERIOR BUREAU OF OCEAN ENERGY MANAGEMENT North Carolina Offshore Wind Planning Ef

MEETING

August 12, 2013

VISUAL SIMULATION

BY THE U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF OCEAN ENERGY MANAGEMENT

North Carolina Offshore Wind Planning Effort

August 12, 2013

5:00 p.m. - 8:00 p.m.

Wingate Hotel
1511 North Howe Street
Southport, NC 28461

PARTICIPANT COMMENTS

Reported by:

Tracy T. Neal

Court Reporter

TREVOR SILVERS

MR. SILVERS: I have a question. I don't know how I want to word it exactly. It was in regards to the waves coming through the wind generated farms, because the poles are going to go down to the ocean floor and a lot of the -- is all the wind -- ground swells and medium period swells and hurricane stuff all come up from South Africa, so all the wave generation comes from the ocean floor until it gets to shallower water. So how is the energy going to be affected when it hits the wind farm and has to make its way around the tubes in the ground? Because I'm pretty sure they're a couple of feet in diameter, at least, 600 feet tall -- the units are 600 feet tall, so the base has to be at least -- at least ten or 20 feet round. So 200 things out there that could disrupt the wave energy, which in return could affect, for instance, the Outer Banks, surfing community, people travel there, they have surfing contests. A lot of money could be lost in the area if that causes an issue.

And along with the mammal question that the other people were asking, that the migration -- that could affect the migration. Because they're only concerned about vibration of units when

spinning, but what about the water swells changing direction and being -- energies being disbursed, could that also confuse the animals?

Otherwise, I love the idea. But I think it's better on land.

ANONYMOUS

MS. ANONYMOUS: The following question applies to all aspects of the research and available data for this entire project. The uncertainty is the inclusiveness of the totality of data relative to geographics. Said differently: One of the things that we heard tonight in this highly specific presentation was that the data was focused on United States. There were references made to Europe, and there were references made to Japan, and elsewhere in the area, where apparently there's a significant more -- a greater amount of experience in solar -- wind energy -- excuse me.

Specifically the question is are we intending to be completely inclusive of the totality of worldwide research relative to this type of process?

MR. ANONYMOUS: I think you've got it. Even specific to the different types of disciplines that we work with, so with, you know,

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avian resources or marine mammals, or --

MS. ANONYMOUS: Absolutely, the entire process. Said differently: The totality of associated elements. Rock and roll. Thank you.

A. BIASOTTI

MR. BIASOTTI: My first comment is that since the closest that the fields are allowed to come to shore is three nautical miles, there was no simulation showing what the nighttime or daytime visualizations would be for a field that close. This is a tourist area, and from the looks of the ten mile simulation, those -- the larger and the smaller of the proposed or the used windmills are obviously visible. At three miles it would be even worse. That would destroy, I think, the tourist trade in the Brunswick Islands, which is where we are now.

As far as the question that's asked here, which says, which is the closest distance that would be acceptable, I will say the minimum distance would be the 20 nautical mile, both day and night. Because that would put it out of sight, generally, in the daytime, and it would pretty much, even with the lighting situation, put it out of sight in the evening.

I would like to see a simulation at night

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with different cloud conditions. Generally when you have an overcast sky, you get some reflections. For example, if you're near a big city, you see sky glow coming in from Wilmington or something that you don't normally see on a clear, starry night.

But other than that, I appreciate being be given the chance to see this.

CAROL SCOTT

MS. SCOTT: I'm most disturbed that the simulation does not cover a wind field six and seven miles offshore, which is what is proposed outside of Sunset Beach. The wind farms are, what, 33 percent closer or something, and the simulations don't take that into account at all. And I think there's going to be a very big difference in the sight visibility from six miles out, as opposed to what they showed here today, the closest one was ten miles out.

So until you do a study that shows the closest proposed range, you have failed in the purpose of coming up with simulations to show the effects of these on various communities, okay? And that includes night views and day views. That's my concern.

RICH CERRATO

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MR. CERRATO: I guess I have three concerns. One is I'm concerned about the distance. Sunset Beach is a tourist community, and I would like to see the wind farms at least 20 miles out. I think they're too close to shore. I think the lighting would be a concern. I'd like to have them as far out as they can without being visible. I'm not a mathematician, I don't know how to do that.

And my other concern was with the lights. It's going to destroy the precious coastline that we have.

And the other concern that I have is what is the direct benefit to the consumer for this project? What will I see? Lower electric bill? And, if so, how much? That's it.

MALCOLM MORRISON

MR. MORRISON: Basically what I -- I came in with a very positive attitude; I am for renewable energy. I was taken back a bit by the simulations. Of course they are worst case simulations, that's good, so we know the bounds there. And having seen that, I think we think for the tourism industry -- and I'm not a -- I'm just a citizen concerned -- that we have seen enough that we think that it needs to be pushed back, you know.

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The lady from down here, at one of the beaches down here, they're saying is it's seven miles from their shoreline, and ten mile simulations were a concern, and even pushing out to 20 miles with the larger wind turbine, is problematic.

And so first I'd say something about modeling -- I think it was done by not these people, but by the contractors. And I would like to have seen taken another approach when -- instead of some of these extrapolations that they did, I would say take a helicopter with a light suspended below it, and fly the route out here at night at ten miles, 20 miles, you know, on out, at the height, at the highest height that they're modeling in there for the tallest things we might consider, and get that snapshot of that light to put into their simulations. Just wherever they put a simulated light, take that real light that's been recorded, put it into the model, rather than saying, we think it's like this and we're going to extrapolate out. Because when you start extrapolating, you start building errors, okay? So that's one thing I would say for the simulations, to try to get some more realism in there. And I don't think it would be that -- it wouldn't break the bank, and certainly it would be useful all up and

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down the coast that we've got some actual representation of can I see the light.

We don't mind the lighthouse; we think it's a beautiful thing at night, but that's one. But we don't need 400 lighthouses flashing, flashing.

And the point was made that, yeah, we're -- simulations are at sea level there, I think, where somebody on the beach would see it; but if you're in your house, up 40 more feet, you're going to see out further.

And so it looks like to me that we need to -- from what I've seen, is try to move the fields further out. I don't know how viable the bottom is out here to go that far. At some point you drop off the shelf, and the water's going to get deeper as you go out there. But what we've got to do, first and foremost, is solve the visual pollution problem for the tourism industry. If we can do that, we'll have a larger buy-in, because I am for windmills. But I want them to be compatible with the economy.

But on a larger scale, see, I look at this as an economic opportunity here, that -- well, we can say, well, if we push it back out to a point, and we say, that's not too bad, but it has too bad -- a little bit of too bad in there, not too bad. There

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is some downside of it, and the people of Brunswick County are paying that price. Consequently, my view and advice to the government is to work with the county here to assure that the jobs associated with this are located in the county. Okay? And that our leadership and Washington should be with us on that, although they represent the whole -- you know, representatives have other counties that they are in. But we want to -- we want their push and all to help get industry to bring the jobs to us rather than export the jobs.

Now we have a, I think, a very good infrastructure to get the rotors, the hubs and the rotors in here through the rail system that serves the nuclear power plant. And the place where we're going to put in the mega port would be -- well, that's where the cable, looks like, it's going to come in here to the transmission lines that go out through Duke Power. And so facilities that support this could be located on that, and it looks like that's what they've designed it to do.

Now, there's other things that -- maintenance and feeding of this farm out here is going to take some infrastructure to support it. That infrastructure, I think, could probably fit -- I

think; what do I know -- but I would say examine the old mega port land there that the state spent $30 million to purchase, which had some environmental problems with it, that people turned it down, as the location. That the rail can come in here, and there's jobs created with that, because that maintenance facility is there, and these rotors have to be refurbished.

And what we would like -- we -- my view would be is that we try to get a company like GE, and we use -- hopefully we can use U.S. produced rotors, and the parts for the windmill to be produced like GE. There's other companies, I guess, that make it in the States, but that's the one I clicked to first when I did my little search yesterday. And so they are -- with their energy and things like that, they have places where they do refurbishment. And so these rotors are going to need to be refurbished. And so we can bring them in, refurbish them, and take them back out, and you don't have to send them long distances to do that if you have the facility here. You can bring in a new one when you need it, and also in the construction of it, and you've got that rail coming in that can extend to this and make that viable.

And you want to talk about a systems approach to this, is that -- we've talked about infrastructure and transmission and things like that. We need to get the leg up and the estimates are out there like ten to 20 years before this becomes viable; I'm hoping it's at the shorter end. And that we start the job training or getting prepared to do the job training at Brunswick Community College, that's in Brunswick County. I see all the jobs associated with this in Brunswick County, okay?

The education can be there; it will make the college stronger to develop that. It will parallel or be similar to the ones out in the west where they have the wind farms out there, and the community colleges training workers to support that. So it's the type of -- a lot of jobs there are the type that are technical, that can be trained at the community college level. And, again, of course you're going to have other types of things associated with it that are going to go on up the educational scale. But we can start with the community college to provide workers so that we have an educated, trained work force that ties in when they first start needing it with the coordination of the planning between government, the person -- the company that

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wins the bid for the lease of the field, and the manufacturers, such as GE.

And so that's kind of -- that's the kind of view that will make this sell in the county if we can solve the visual pollution.

Now, one solution, as I mentioned, was to push it further out if the land will accept it out there. And the other might be in efficiencies in the windmill construction, the rotors and things like that, and the blades and the technology to make it more efficient to bring down the cost of so many kilowatts, you know, megawatts. What's the cost of a megawatt, depends on the efficiency of the windmill, of the setup there. And so if we can't get it cost effective so that Brunswick Electric can buy that power, it's not going to be viable, you know.

Now, the other thing is -- and this is political, and I don't know that it's solvable -- but you read in the papers that big oil, oil and gas companies, have subsidies through the tax structure. I don't -- you know, you read that. I can't point to one specific instance, but it's referred to a lot of times about subsidies to other industries. And I would say -- well, it's the double edge sword. Take away those subsidies, and their profits decline or

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our energy price goes up. Which one do you think the CEOs are going to choose? I think prices go up to main profit levels, but that's a personal bias.

So we need to have a level playing field is the bottom line on this. An objective one, not a political one. But an agency that is objective outside of the political system to say that this and this and this are the benefits. And I don't like to say if you give it to them, they can give it to the windmills, because I'm not for subsidies. Because we're paying it in tax dollars every time we give a subsidy. And so I'm not for increasing taxes to give subsidies; I'm for taking subsidies away. It saves the government money. We may pay for it, as I mentioned, you know, but --

So that's kind of my take on it. I'd like a systems approach to it, that we're getting this all integrated together. This is a good early warning. You know, some people complain about, we didn't see it in the paper. Well, there's other opportunities; it's on the Internet, and so we're getting this view early on enough to start talking like we're talking here to find solutions. And, again, we want to get to yes. Remember that book that they wrote how when you're dealing with two

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sides you come to agreement? That's getting to yes. And so that's what we want to do for this. And so that's my brain dump.

ELLEN DEGROOF

MS. DEGROOF: I think my -- my biggest question that's been raised as I look at this is the -- everything that we do has a risk/benefit ratio. And we've -- can imply that there's certain risk with doing it. What I don't understand, what I need to educate myself on is the benefits of this source of energy, as opposed to other sources of energy. Not just in cost, but in the number of people that it serves, and the efficiency of it.

MARYBETH ALTHAUS

MS. ALTHAUS: I have environmental concerns. There's always unintended consequences to everything we do and I wonder if enough -- I've lost the word -- enough research will be done looking at the impact on birds, on turtles, on sea creatures, fish, mammals, things like that. They're important.

I don't know what the consequences are of drilling, even installing one thing. I know it's not as bad as drilling for oil, but you're still drilling into the ocean bed. I worry about that. I don't think that's usually taken into account as much as it

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should be.

And also I wonder what happens when they -- what kind of failures there could be and what the environmental impact would be of a failure. We've seen it with oil rigs, but what happens with this? I know it's cleaner, but if they fall over, then what?

JENNA FONTAINE

MS. FONTAINE: First of all, I'd like to thank the Bureau of Ocean Energy Management for doing this, because I think it allays some fears people have maybe about what it's going to look like potentially from our beaches.

I have to just say that I am really pro wind/solar development of energy. I feel that global warming is a very, very real and critical issue, and our dependence on fossil fuels must be turned around.

We've traveled fairly extensively in Europe and Europe is the -- you know, on the coast of Ireland they've got them; in the interior of France they have them; up the Pyrenees. Wherever there is reliable wind, that is one of the, you know, sources that they have exploited successfully for their power. And I just feel like we have not invested. And I think, personally, it's because the petroleum industry has put up a lot of extra roadblocks and

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worked with public opinion against putting money elsewhere. But this was really eye-opening and very wonderful. Thank you.

ART FONTAINE

MR. FONTAINE: I just wanted to say that I'm basically for renewable energy as far as wind and solar goes. And I feel that there has been a process to go ahead and install -- to deflate the progress of solar and wind power. And I think this is a great thing; I think that it's great that they're doing this. And I hope it was as informative to everybody as it was to me.

STEPHEN KIEL

MR. KIEL: I mean nothing -- I don't have anything really profound to say other than generally I'm in favor of the concept of a diversified portfolio of energy generation. So, you know, I think wind and solar, along with nuclear and coal, all make sense on a blended basis.

So I don't see any problems with what was presented today in terms of what the visual issues are with turbines being located offshore. That's my statement.

AMANDA KIEL

MS. KIEL: Just basically concerned

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with the environmental -- the turtles, the lights; how it's going to affect the fishing industry of a small town like this. Like other coastal towns, the fishermen, this is their livelihoods; the esthetic part of it. Basically that.

I wish we would do more with making solar energy more affordable in this state. We came from Ohio where we could put solar on our home in a non-sunny state and we could own the electricity that it generated. Here in this state, the power companies take it all, and then sell it back to us. So it doesn't make it as economically attractive for somebody to go through the money to put all that stuff on their house. So, anyway, I'd rather do that.

BETTY JO ELLENDER

MS. ELLENDER: Well, first of all, I do like the wind as a source of energy. And I'm impressed that it's not that visually invasive; and I'm a beach bum, I'm on Oak Island a lot. But I didn't see that it was a visual disturbance to me at the various nautical miles.

The nighttime, I saw it just as part of the starlit sky. So both of those -- and during the daytime and during the nighttime it does not disturb

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my visualization of the beach at all. And I'm just amazed that they can be sunk into the water. So I'm impressed, I like it very much.

And I think, certainly, we are capable of keeping the visualization, keeping it safe, and that it's not going to be a flight hazard; it's not going be to a boat -- transportation in any way hazard. So I like it.

VICKI STURGILL

MS. STURGILL: I think that the visual simulations gave me a much better understanding of what it would look like. I am a huge supporter of sustainable energy. I want the beach to look like it does when I was growing up when my grandchildren are there. I do not want to see oil drilling off of the coast of North Carolina. I'm a native North Carolinian.

I thought both of the presentations, both the printed pictures, as well as the simulations, gave me a different perspective. I especially like the nighttime ones; I love the Christmas lights, love it, looks like Christmas.

I think the benefits of the offshore energy development far outweighs any visual questions I might have about the process. I don't see it

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interfering with the enjoyment of a national park, state park, or local community at all. I think once people understand what it is really going to benefit North Carolinians, South Carolinians, and people in Georgia, that will far outweigh any questions that people might have.

I think the historical value of the Southport and Brunswick County areas in general is already being preserved in terms of Fort Anderson, Brunswick Town, the Mariners' Museum, I think those things are very, very important, and this -- wind energy would not impact that already historical information that is available here in Brunswick County.

I was very impressed at the compliance with the FAA and the Coast Guard requirements. They explained very in detail the difference in the lighting sources, whether it be at the bottom of the blade, or the source -- the airplanes can see it as well as the Coast Guard. I think that is very, very forward thinking based upon some accidents that have happened here in Southport with boating and things not being lighted. So I think the simulations in showing the lights makes it very safe for pilots, whether it's a commercial pilot or small airplane

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pilot, or commercial ship liner or small boats.

(END OF PARTICIPANT COMMENTS)

C E R T I F I C A T E

STATE OF NORTH CAROLINA)

COUNTY OF BRUNSWICK)

I, TRACY T. NEAL, court reporter and notary public in and for the State of North Carolina, do hereby certify that the foregoing is a true and complete transcription of my stenographic notes of the participant comments taken by me in this matter to the best of my ability and understanding.

I further certify that I am not associated with nor related to any of the parties to this matter, nor do I have any interest in the outcome hereof.

Witness my hand, on this 20th day of August, 2013.

Tracy T. Neal, LCR #360
Notary Public #201303900066

My Commission Expires: February 4, 2018

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