PUBLIC INFORMATION MEETING:

BOEM'S NORTH CAROLINA OFFSHORE WIND PLANNING EFFORTS

WEDNESDAY, JANUARY 9, 2013

5:30 P.M.

COURTYARD MARRIOTT WILMINGTON/WRIGHTSVILLE BEACH

EMERALD ROOM

151 VAN CAMPEN BOULEVARD

WILMINGTON, NORTH CAROLINA

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A P P E A R A N C E S

PANEL MEMBERS PRESENT:

BOB LEKER
MAUREEN A. BORNHOLDT
WILL WASKES
JEN BANKS
BRIAN O'HARE
BRIAN KREVOR
JENNIFER GOLLODAY

P R O C E E D I N G S

MAUREEN BORNHOLDT: I want to welcome you to the offshore wind meeting. My name is Maureen Bornholdt, and I'm the program manager for the offshore wind program at the Bureau of Ocean Energy Management. We're a bureau within the Department of the Interior, and we're responsible for stewardship with regard to ocean energy resources in the outer continental shelf.

And what is the outer continental shelf? That's ocean lands that start about 3 miles up to 200 miles from the coast. What we're here to talk tonight about our efforts with the state and the stakeholders of North Carolina associated with the potential for leasing OCS land, those miles from 3 to 200 miles for outer continental shelf offshore wind leasing.

What I want to do is welcome you here tonight. We have an illustrious panel. We have folks from the states, as well the bureau, who are going to talk through and inform you about efforts that we've undertaken since 2011. And then we're going to end the meeting with a public comment period, because what we really want to do is hear from you, what your issues are, what your concerns are. If you have information about coastal resources about uses off of North

Carolina, we want to hear your concerns. Because we take that information, and as we move through our process, we take that into consideration as we decide whether or not to lease in this area and what type of activities we will allow.

So let me first introduce, or have them introduce themselves, the folks from the state that are here to help tonight with informing you about the efforts that we've undertaken with them.

Bob?

BOB LEKER: Can you hear me okay? I'm Bob Leker. I'm the renewable's program manager at the State Energy Office working in the North Carolina Commerce Department.

JEN BANKS: I'm Jen Banks. I'm with the North Carolina Solar Center and Southeastern Coastal Wind Coalition.

BRIAN O'HARE: Hi. My name is Brian O'Hare. I represent the Southeastern Coastal Wind Coalition, which is a nonprofit group representing a wide variety of folks looking at ways to make this work.

MAUREEN BORNHOLDT: And we have our BOEM team.

WILL WASKES: My name is William Waskes. I'm with the office of Renewable Energy Program,

specifically, Product Coordination Branch. I am the project coordinator for North Carolina.

BRIAN KREVOR: My name is Brian Krevor. I'm a NEPA coordinator with BOEM. One of my states is North Carolina. I also work on Massachusetts and South Carolina.

MAUREEN BORNHOLDT: In the back of the room we have Jennifer Golloday. If you have questions with regard to the leasing process, the regulations, Jen is our subject matter expert associated with that.

What I want to do now is turn the meeting over to Will. Will is going to walk us through the agenda and what we hope to achieve tonight.

WILL WASKES: Thank you, Mo.

Just a few housekeeping ground rule items. One, cell phones. If anyone has a cell phone here, we'd appreciate it if you put them on silent or vibrate.

Secondly, bathrooms. There is a bathroom on the first floor. It's almost directly underneath us but just on this other side of the wall. You can get there either via the elevator down at the first floor or the stairs out to the left.

Just covering the agenda, there's basically several different segments. The first segment, as Mo

noted, we will have three presentations from the state. We will take questions on those presentations after all three presentations have been given. Then there will be three presentations from BOEM covering the leasing process a little bit, another presentation covering a little bit more about the actual call area that you are hearing in the -- or you've seen in the Call for Information and Nomination that we'll be discussing today, and a presentation on the environmental process. We will be taking questions immediately after that in one lump for those three presentations that are specific to those presentations. We will then open the floor for public comment.

On that end, I will say that when anyone is answering questions -- or asking questions, that you please state your name into the mike and talk into the mike, because we do have a court reporter here today who is trying to capture all those comments. It's important that we get that information.

Once that is done, we will open up the floor for pretty much questions of any kind, whether they're on presentations about our process, but we want to make sure we get ample time for comments that will come in from the floor. So from there we will close out the meeting. But as I said, we will stay here as long as

there are questions that come.

With that, I will hand it over to Jen Banks who will start the first presentation of the evening.

JEN BANKS: Thanks, Will. Thank you all for coming tonight. As I mentioned before, I'm Jen Banks with the North Carolina Solar Center. And I will just start really quickly, give you an update on what the solar center is. We are at the North Carolina State University, College of Engineering, and we cover all types of renewable energy. I focus on onshore and offshore energy here in North Carolina, but we also have groups that work on solar, obviously, and also we have a clean transportation program.

So I'm going to give you guys an overview of offshore wind in general, just to give you the background that you need for the rest of the presentations you'll hear tonight.

First of all, offshore wind was first installed in Denmark in 1991. So this isn't something that's completely new. There is offshore wind in the world just not yet in the United States. And right now we have over 3800 megawatts installed in mostly Europe, some projects in China.

There is a goal here in the US from the Department of Energy to get 54 gigawatts of offshore

wind by 2030. Under that goal, it's based on a 2008 study by DOE, which is a 20 percent by 2030 report, which looked at one scenario for getting 20 percent of the US electricity in 2030 from wind energy. In that study, North Carolina was targeted for 10 gigawatts of offshore wind. So that's not necessarily exactly how it's going to go, but that's one scenario that could happen.

And there are some interim cost goals for DOE for that, and you can see here, I think Brian talks about them a little bit in his presentation as well. I forgot the important part here, the map. So this shows you where we have offshore wind resources here in the US. You can see that the east coast is a great place for offshore wind. The continental shelf drops off pretty slowly on the east coast, so we have shallower waters further from shore, which is important for offshore wind because the commercially-proven technology in Europe is 20- to 30-meter water depths.

We've got other projects moving into deeper water and other technology that's working on very deep projects further from shore with different types of foundations or floating platforms. I will show you a little bit more of those. But the important thing here is that you can see in North Carolina we have a very

long coast line and we have a really great resource. We actually have the largest resource on the east coast for offshore wind.

Some of the benefits of offshore wind are stable price generation for the life of the project, which can be 20 to 25 years or more. And that's true for onshore and offshore wind. We also have no fuel costs. So if you get a power purchase agreement for a wind project, you know what the price of your electricity will be for the life of that project.

For offshore wind, some of the specific benefits are the proximity to coastal demand centers. So there -- in the coastal states, I think it's about 78 percent of the population lives in the coastal states. So offshore wind provides a really great opportunity to generate clean electricity close to those demand centers. It also can coincide with daytime electricity demands due to sea breeze effect. I will talk about that in a little bit.

For offshore turbines you have the ability to put in larger turbines and the economy of scale that comes with those larger turbines, and you're not constrained by onshore transportation limitations. So if you have such a large turbine, you can have the manufacturing right near the coast, near the port, and

put the components directly on ship and take them out to the projects. And that also plays into one of the benefits that you can see here in North Carolina for economic development for offshore wind due to the manufacturing potential.

And for North Carolina we have an interesting story as well because we have a good deal of onshore wind supply chain even though we don't have any onshore wind energy projects here. So I think Brian talks a little bit more about that as well. But it's just important to remember that there are economic benefits from these projects as well.

Here's a quick example of how offshore wind projects can meet peak daily demand. So you can see on the bottom it shows the wind output from a project in the mountains in Georgia. And this is kind of hypothetical just based on the wind resources that's there. So you can see that this is the same that's true for a lot of onshore wind projects. Most produce the most electricity at night and the winds die down during the day.

But for offshore projects, you can see that the output for a project 40 miles offshore would actually have a lot of electricity being generated during the daytime. So that ability to match the peak

daily demand is very important for offshore wind.

Really quick background on offshore wind permitting here. The main thing here, you know, a lot of people ask why we don't have offshore wind here, why we're behind Europe. One of the reasons is we didn't have rules to put offshore wind here in the US until 2009. So the Bureau of Ocean Energy Management has been working since that time to really fine tune the rules and get moving with projects. That's why we're here today discussing the offshore wind potential here in North Carolina.

I will give you guys a really quick overview of wind turbines. They're kind of like a fan in reverse but they're much larger. The blades, a lot of people think that they move really fast. And the tips of the blades can move quite fast, but the -- right at the hub right here (indicating) in the middle of the blades, they actually move quite slowly. The rpm's are pretty small for the turbines. And this -- the piece behind the rotor there is the nacelle. You will see a picture with some more of the components shown on there.

But one of the interesting things that ties back into the economic development piece is that there's 8,000 components in the wind turbine. So

there's a lot of opportunity for manufacturing. And here in North Carolina we have, as I mentioned, several thousand jobs in this industry already.

Here's an example of what an offshore wind project might look like. You have the turbine array out in the water. And the distance from shore varies based on what areas are most suitable for offshore wind. You have the cables that connect each turbine to each other and then to the substation, which is that offshore transformer platform you see. Then you will have another line that goes into the sea floor and goes under the beach and connects to another substation onshore and then connects into the grid from there.

Here's a picture, an example of what a wind farm looks like offshore. I know it's very subjective when you look at these sorts of things, but I know a lot of people think that they are very beautiful. I happen to agree with that. I think they're really awesome to look at. Hopefully, if you haven't yet had a chance to see a utility scale turbine onshore or offshore, that you will have a chance to take a look at that sometime, maybe here in North Carolina soon.

Here's another example of -- this is the London Array offshore project. And this structure you see here is the substation. So back to the major

components of the wind turbine. You have the blades, which as I mentioned for offshore projects, they can be very long blades, 60 to 80 meters long. The nacelle is the big box that houses the gear box, if there is a gear box for the turbine. There are also direct drive machines that don't have gear box. Then the tower, which connects into a transition piece that puts the tower on top of the foundation which goes into the sea bed. Depending on the type of foundation, it connects differently.

So here's some different types. A jacket foundation. Monopile, as I mentioned, is the one that is most installed in Europe, 20- to 30-meter water depth. Gravity base is another option. One other that I don't have a picture of here is a floating turbine. And they have some prototypes of these that are kind of a spar buoy where they have a ballast system. They go down into the ocean and then are tethered to the sea floor with cables. So those can go into much deeper waters. And that's the type of foundation that they would be looking at for projects in Maine or off of the west coast.

And just really quickly, as I mentioned before, the cables do come ashore under the beach. So they can do directional boring where they start the

cable offshore. It can be a good distance offshore, and do directional boring to have the cables come under the beach and up further onshore to get to the substation.

And this is just an example of one of the ships that could install projects offshore. You need really purpose-built ships for these type of projects that are able to take these large components offshore and install them. So that's something that we don't have here in the US yet, but there's a number of companies that are working on those vessels here.

That's all for my presentation. Thank you all for listening and coming tonight. I will turn it over to Bob now.

BOB LEKER: Thanks, Jen. So the state of North Carolina is very interested in this offshore resource, that it could be an economic driver. There's manufacturing. There's operations and maintenance that could originate and be sited in North Carolina to support intelligently sited offshore wind resource. So the state is very interested and we are working with BOEM and have done some of the preliminary work to lay the foundation for BOEM's selection of various wind areas offshore North Carolina.

We have some great resources in the state at

our universities and some marine science centers that have been very supportive and very interested in assessing the biologic life, the marine life, other factors that which should be important considerations in siting offshore wind.

So I'm going to just review a couple of those areas to give you a sense of the foundation that BOEM has worked with to develop -- and ongoing work to develop and analyze offshore wind areas.

So we started with the whole coast line offshore from the Virginia to the South Carolina line, and there's a lot of blocks there. And you will be hearing more about blocks, but they're roughly, each one of those small little squares is 3 miles by 3 miles. There's a lot of 3-mile squares offshore because North Carolina has a long coast line that sticks out into the Atlantic. So North Carolina has a very large potential resource, and this is, of course, before exclusions and areas were deleted from the total area because of biologic issues; marine life issues; sensitive habitats; DOD, defense operations; ship-to-shore operations; those kinds of things.

So you know, the total amount of blocks is over 1200 blocks. Each block could support roughly about 70 megawatts. It's very approximate depending on

the size of each turbine. So the seminal study, I guess the earliest study that provided a lot of information because of the UNC Chapel Hill Marine Sciences Department did a lot of investigation into the coastal wind resource by direction of the North Carolina legislature. And they released that study, and you can find that study on the web if you just Google search UNC Chapel Hill Coastal Wind Study, it will come up very easily. That covered waters less than 50-meters deep within 50 nautical miles from shore, and looked at a lot of those kind of constraints that I just mentioned, marine life, sensitive habitat, DOD operations, those kinds of things, to look at what is possible and what areas should be deleted from the total blocks that you saw on the first map.

So they emerged with about 55,000 megawatts of potential, technical potential if all those blocks were developed, and that it's a large amount of energy that could serve North Carolina or the Southeast.

This gives you a sense of some of the mapping that was done in that study. And you can see these maps, and more, in that study, as well as, of course, a lot of resources at the BOEM website. But this study did GIS work to exactly locate things like high-speed maneuvering corridors for various aircraft, sensitive

wildlife areas and marine areas. But you can see the remaining blocks that are in red that still show up in the areas. And you can start to see some of the areas emerging that BOEM is working with to this date.

This is all five of the areas. The top area, which is now called kitty Hawk, and there's two areas that emerge in the bottom are Wilmington East and Wilmington West. You can see the call areas over here on this poster (indicating). But you will see them become a little more defined. But in general you will see that the resource is a strong resource. And this map shows some of the capacity factor mapping. And the dark green areas generally are better, are higher capacity factors, so the wind turbine would operate near its rated capacity more often in those areas.

But in general, there is a very significant resource offshore North Carolina as folks here already know. The beach, it's always windy.

So the state doesn't select any of these sites. We provide input and provide information. And there's a governmental body that is -- that has met through the last about two years or so and has vetted various -- parcels of information have come forward, has supplied other information. And BOEM will make the final determination of the lease areas. And I wanted

to highlight some of the work that we're doing to look at additional studies that the state has undertaken to support BOEM's work. But I will let you know that there's a lot of stakeholders involved in this process. There are National Oceanic Atmospheric Administration, there's the National Park Service, US Coast Guard for routing of ships up and down the coast. There are certainly NGOs like the Sierra Club and others, Audubon Society. There are cities and counties. So there's a whole list -- US Fish and Wildlife Service. There's a whole long list of many -- various stakeholders and organizations that are interested in where these areas will be sited, that have concerns that need to be addressed. And that is being analyzed by the experienced staff here at BOEM that has worked for a while now to integrate a lot of different sets of data so that we can emerge with areas that are best -- the best areas that we have at this point that will -- we understand will be likely wind areas that could be used for development of the offshore wind resource.

So there is a visual simulation that we will talk about later that was completed in the summer by BOEM. And right now there's a Call for Information for three areas. And you can see the three areas on the map on the side over here in pink. And I can show you

them up here. This is called Kitty Hawk. This is one of the areas that is a call -- in the call. And there's a Wilmington East and Wilmington West. And those are the three areas in the call. These are two areas that are not yet released that are still being analyzed.

So the Commerce Department has undertaken a couple of extra studies to gather more information about the areas offshore. And one of the areas that was looked at was additional environmental concerns to get a better resolution on essential fish areas, stakeholder interest from the fishery groups. Doing aviary transects to help determine flyways and bird densities going out into the wind areas. So those are the kind of areas that environmentally we've looked at. And the group that's worked on that has been the UNC Chapel Hill Institute of Marine Sciences.

We also undertook feasibility of our ports to understand what their current capabilities are to offer layout opportunities for the turbines that would support construction as well as operation once a wind farm was built. Additional work has been done on the wind resource, because we actually don't have any wind meteorological towers out in the Atlantic at this point in time. So we don't have any actual data at hub

height. And this is really important to developers because they want to know how much energy this turbine is going to develop over an annual period. This is essential information for them to use in assessing what their wind farm would generate, and that of course is going to determine how economic this project would be.

The other work that has gone on is additional educational outreach to various stakeholders. The North Carolina Solar Center and Jen Banks, as well as the Commerce Department has been involved in doing presentations and outreach for several years now.

So just to give you a sense of some of the ongoing work, this is one of the general maps that the UNC Center for Marine Sciences conducted and they completed. This is a general map that sort of puts together all the wildlife issues and displays it in a map. You can see the red areas are high concern areas. And the yellow are less concern. And the darker color here is a lower concern area. So you can see generally that as you go out into the Atlantic, the -- sort of the relationship between the marine wildlife becomes less and less important because it's less significant as you go farther out. You also notice around the cape there tends to be a lot of activity. So you will see those areas are generally excluded from all the wind

areas that are under consideration.

This gives you a sense of some of the information that the ports' capabilities studies emerged with. And this particular slide shows a case study at Morehead City at the Morehead City port. And it looked at how you could lay out 600 megawatts of turbine supply, so the tower, the nacelle, and the blades, how you could site that at the existing port and lay it out, because they need to gather all these parts together at a port because they're big and heavy and they don't want to move them around a lot. And they want to have them closely together so they can get right on to a quay next to the water and load on to a boat. So this was done and looked at the two ports.

Generally, Wilmington and Morehead are the two ports that were identified as potential construction ports. There are other ports in the state that are -- don't have as much space, don't have the significant rail connections to support the development, but they could be used to operationally maintain a wind farm, an offshore wind farm.

You can see the green area are the tower sections, the red are the blades, and the blue are the nacelles. And then additional work has been done to analyze the wind resource. And this is ongoing work

that is continuing as we speak. Two buoys were deployed in the Atlantic to gather atmospheric and various other pieces of information. A wind profiler that uses sound was located. It was hoped that that would be located on an offshore platform, but we weren't able to get DOD permission to locate on that platform. It was put very close to the coast, approximately about half a mile.

So between those two pieces of equipment and the additional analysis from existing buoys, we're merging with a more detailed picture about what the wind resource offshore North Carolina looks like. We are seeing that it does have a very significant power potential but that there are various marine jets along the coast that are influenced because of the land and sea differential, because the land heats up much quicker than the ocean. So there are convective currents that flow back and forth. And that is some of the significant information that's being analyzed at this point with the data that's being collected about the offshore wind resource.

We do and would dearly love to have a sodar or a lidar, a light radar unit, a sophisticated data collection to look up into the hub height winds. Because as of this point we don't have offshore

over-the-water hub height measurements of the wind resource.

So this gives you a sense of some of the outreach to coastal stakeholders. It includes, as I mentioned, cities and towns, coastal associations, nongovernmental organizations, detailed work with fishery groups. And the fishery group is very interested in offshore wind, and many of them are comfortable with offshore wind, especially if they can go through the turbine field or possibly take advantage of some of the foundations that would attract fish and essentially be a nursery for fish. So fishermen are interested, and the fishery groups at this point when we talk to them, they could be comfortable with wind farms if they have routes through the wind farms or around the wind farms to do their work on the ocean, with the important seafood harvest offshore North Carolina.

We have also participated in national and regional conferences. And the solar center also completed a summary of EU policies that facilitated offshore wind siting.

In North Carolina we also have a transmission collaborative. And this group created by the utilities commission looks to the factors that are necessary to

keep the transmission grid in North Carolina updated with enough capacity to meet our future needs. As part of this work for the last 3 years, 2010, '11, and '12, that group has undertaken some studies to look at potential injection of offshore wind into the grid. And the last study in 2012, for example, looked at the impacts of 10,000 megawatts of offshore wind that could be injected at -- in both Virginia and North Carolina. What they do is they look at the substations' capabilities of various points of North Carolina, and they look at the upgrades that would be necessary to existing lines or the new lines that would need to be built to support getting that wind-generated electricity into load centers.

So there is work that is ongoing. And utilities and various organizations are involved to further understand what the implications of offshore wind could be in this region.

So generally, as we've mentioned, North Carolina is ideally situated along the Mideast South Atlantic here. We have a very large offshore wind resource that is in shallow water, so it's accessible to the monopile-type foundations that are in use. And we have some strategically located ports that could support both development and operation of the wind

farms. We also have a tax credit that's a significant driver, too, for manufacturing that could be used, and they have a low cost of manufacturing. So we have some of the elements that could support offshore wind farms. And Brian here is going to tell you a little bit more about that. Thank you very much.

BRIAN O'HARE: Thanks, Bob. So again, my name is Brian O'Hare. I'm with the Southeastern Coastal Wind Coalition. I'm not a developer and I don't represent developers. We represent quite a wide range of folks trying to figure out the best way to get this done. What I want to do is talk to you about -- you heard from Jen sort of a Wind 101. She also gave you a snapshot of what's going on in other parts of the world and other parts of the US. You heard from Bob about all the work that North Carolina and the state has done leading up to the point where we are today. And the short answer is a lot has been done.

So what I like to do is put those into context and give you a sense for what's unique about North Carolina and what's unique about the Southeast. Both are unique challenges and are unique advantages. And basically I'm going to be making three points. So if you have to go to the bathroom, as long as you remember these three points, now would be an okay time.

And I'll try to go through this quickly because I want to make sure we leave time for questions. So if I skip over something, just come back to it in the question period.

The three points are, we have great wind resource. When I say "we," I'm talking about both North Carolina and the Southeast in general. And our organization covers really Virginia through Florida. So as a region and a state, great wind resource with very big electricity market, and we have low cost. And I will tell you why all three of these are important.

First on the resource side, as I said, the Southeast has very tremendous resources especially in shallow water. I have an engineering background so you will see a lot of data. So if data bores you, it would be a really good time to go to the bathroom. But this is data from a national renewable energy lab's report showing the total estimated offshore wind resource for each of the states on the east coast. The bar colors are color coded by water depth. So the green bar is in 0 to 30 meters, which is typically what you would call shallow water. The blue bar is 30 to 60 meters. The gray bar is greater than 60 meters, so that's deeper water.

What I've done is sorted this on biggest to

smallest in the shallow water resource category and then highlighted the Southeastern states. And you can see that the four Southeastern states have the largest shallow water resource of all the states on the east coast. Then when you look at that on a regional basis -- before I do that, so these numbers are -- two things. One, these are in gigawatts. You may be saying, "What the heck is a gigawatt?" So to put that into context, if you were to say how big would this bar have to be to satisfy all the electricity demand for North Carolina? Which is, by the way, not something I'm advocating, but just as a point of example, that would be about that much (indicating).

So you know, if you ask the question, "Do you have enough resource to cover 10 percent of our needs," I think there's clearly enough. You can see North Carolina obviously, which is the far left bar, if you can't read that, has by a pretty wide margin, the largest total resource on the east coast. And this is before any use constraints. So this is before all of the exclusions that Bob mentioned. It's an apples to apples comparison between the states.

Again, if you put this together on a regional basis, you can see that the Southeast, so looking at Southeast, the mid-Atlantic and Northeast, the

Southeast has over 60 percent of the total shallow water resource on the east coast. You might also say that, well, every state has shallow water and, you know, just because we have a long coast line, that means we have a lot of beaches, but everybody has beaches but nobody wants to see -- sorry, that was the wrong picture. No one wants to see a turbine 500 feet off the beach.

So if you said, "I want to know what the resource is in shallow water and far enough offshore," and where NREL slices their data in this report is at 12 miles. So what's in less than 30 meters and more than 12 miles offshore, and then compare the regions, the Southeast has an even wider margin. So over 80 percent of the shallow water far offshore resource is in the Southeast. So that's the first point. Very big resource.

The second point is we have big electricity markets. And first I will show you this, then I will tell you why that's important. This chart shows the total electricity consumption for the same east coast states, and again, highlighted the Southeastern states. So reading from left to right is Florida, New York, Georgia, North Carolina, Virginia, South Carolina. So five of the six biggest electricity markets in the east

coast are in the Southeast. What's really interesting about this is Georgia and North Carolina, which are here, use about the same amount of electricity as the state of New York, and we have half the population. So we have very high per capita usage. That's driven by more rural counties here, so we have more electricity use for things like heat. We have obviously very hot summers; we use a lot of air conditioning. A number of factors. We have a lot of industrial use. There's a number of factors that feed into this.

But again, if you look at this on a regional basis to combine those together, the Southeast has over half of the electricity demand of coastal states. Why this is important is because if you're building a new generation facility, it's going to have an impact on our rates. We're already -- we see that now in the new stuff that utilities are building. So the point is, if you build -- if you approach this on a regional basis and you build a thousand megawatts of offshore wind in here, here, and here, the impact is going to be less (indicating) here in these really big markets because we're spreading it over a wider market. There are other impacts that go up, but that in particular is the impact of very large markets.

So the third point is low cost. You know,

it's pretty cheap to build stuff in the Southeast compared to other east coast states. Before I get into the Southeast specifically, Jen mentioned this, but these two middle and right dots are -- this is sort of cost projections by the US Department of Energy for the cost of offshore wind per kilowatt hour. So they're saying if the target is $.10 per kilowatt hour by 2020 and $.07 by 2030, the dots on the left are a range of either existing contract prices for offshore wind or very credible estimates for offshore wind.

So you can see that cost is a challenge today but that's moving in the right direction. Just by comparison, the retail cost for electricity in North Carolina is around $.10 a kilowatt hour right now. So when we're talking about cost, we have both challenges and advantages in this regard. And this chart shows the average residential retail rate for electricity for the east coast states. And again I highlighted the Southeast. Now this time we're on the right-hand side, which is generally a very good thing. We have lower electricity rates than almost all of the other states on the east coast. So this is very good for us because it allows us to have a very low cost of manufacturing environment, low cost of living, lower cost of labor, a lot of advantages.

The challenge is if you're building something that is going to produce electricity that costs more than, you know, a 60-year old coal plant that's already paid off, then the incremental cost when you're at a low price is different than the incremental cost when you are at a high price. So that's a challenge here. But that's mitigated by some of the other factors.

To just kind of give you a background on how is the cost of energy determined when you build a new generation plant, there's really sort of five factors. These apply whether talking about wind, solar, coal, gas, nuclear. All this pretty much applies. So you've got, first, the construction cost. What did it cost you to build the facility. Second is the operations maintenance cost. You know, what does it cost to keep the thing running and produce electricity. Third is the financial cost. What does it cost to service your debt, service the equity that was used to build the project, returns for utilities, things like that. Fourth is the fuel cost. Since I'm using wind as an example here, you know, in this category this is where wind gets a zero in this category because no one has yet figured out how to charge for wind. But that's an input in whatever you have. And then fifth is what's called -- Bob mentioned this. It's called a capacity

factor. Basically this is a measure of how much of the capacity of this generation facility are you using.

So if you had a wind turbine and you've got all these fixed costs in construction and operations maintenance, financial cost, you don't really have variable cost for your fuel. So if one wind turbine that costs 100 bucks is producing twice as much energy as another wind turbine that costs the same to build, the more energy you produce for the same fixed cost, the lower the price per unit of energy. So capacity, and basically this is a way to say how good is your wind resource.

Now, there is a sixth factor that I would be remiss if I didn't mention, that's something that we don't normally include on our electricity bill, but there are what's called externalities or external costs. These are things like environment cost, public health cost. So when we burn things and dig things up, there are emissions and those create costs that we pay for as society. They may not show up on the electricity bill but they do exist. So we need to keep those in mind as well.

Now, the important thing about this, again going back to why this is important for the Southeast, we have very low labor rates in the Southeast. And if

you strike fuel costs from the equation and then look at the other big ones, both of these first two are very dependant on labor rates. What that means is if you construct, operate, and maintain for lower cost, your energy cost is going to be lower as well.

And this isn't just me making this up. This is a -- showing some data from an Energy Information Administration report where they're estimating the construction cost for new offshore wind facilities by state. And what you can see is the four Southeastern states have the lowest estimated construction costs along the east coast. So that will mean lower energy costs off the back end as well. Interestingly, North Carolina, when you look at this report, has the lowest estimated construction cost in the nation, not just on the east coast. So that's a big advantage.

And you can see this advantage playing out, Jen mentioned this, in the land-based wind industry where we, as a region, currently have zero megawatts of utilities sale in wind, but there are already some 5 to 10,000 jobs in the wind industry, and that's because this is an attractive place for jobs in manufacturing and wind.

So when you take these three factors together and if you say one of the big challenges, not the only,

but one of the big challenges with deploying a new technology like offshore wind, what's the impact on our rate going to be? That's the question we always try to answer. Well, each of these three things have a different impact. You know, the fact that we have low electricity rates to begin with means that premium is going to be higher, but these other two factors really help to offset that. Larger market size spread that impact over a wider base and the lower construction cost reduces that premium because you've got lower energy cost from this new facility.

So I will leave you with sort of a vision for the future, and that's thinking, if you think beyond kind of the first project or two and you look to at the whole east coast as a region, you can make a case to say, hey, if electricity rates are high up here and it costs less to build down here, why not supply them? So that kind of gets you thinking a little bit more about potentially the future of the economic development opportunities beyond the first project.

I will look forward to your questions. Again, thank you.

WILL WASKES: Okay. We'll take time to take a few questions about the presentations that you heard from the three presenters from the state. So again, I

will remind anyone that asks any questions, if you can wait till we get a mike to you so we can clearly get your name so we can capture that by the court reporter.

So if there's any questions?

MICHAEL RICE: Thank you. My name is Michael Rice. My organization is Save the Cape. I looked at the list of stakeholders in Bob's presentation and there seems to be one missing, and that's the investment capital. Where's that going to come from?

BRIAN O'HARE: You said the investment capital?

MICHAEL RICE: Yes.

BRIAN O'HARE: There are a number of banks that are working with the many developers in the mid-Atlantic and Northeast. Really the challenge is finding a buyer for the power, and once you have a buyer for the power and revenue streaming for the project, you can find investors to invest in the project.

MICHAEL RICE: Well, wouldn't they have something to say about what's going on now in terms of cost targets and things like that in comparison with other energy sources?

BRIAN O'HARE: I think typically investors look at things when they're presented with a investment

decision. They're making sort of an independent decision; is this a good investment for us? Is the risk low? Is the return sufficient? And I think they look at those on a case-by-case basis. So I think they don't get as involved until there's actually a project that --

MICHAEL RICE: I don't see too many 3-piece suits here, that's why.

BOB LEKER: It is early in the process. The BOEM group will talk more about the Call that's going to solicit input from potential developers. Once that point -- you know, once that is determined then, I think, they'll be possibly some more interest from investors.

There's another question?

CHRIS CARNEVALE: I'm with Southern Alliance for Clean Energy. I had a question for Bob about the 25 percent renewable energy manufacturing tax credit. What does that apply to and does it have an expiration?

BOB LEKER: The expiration date is either 2014, I think. I'm not sure whether it's 2014 or '15, but it's a manufacturer's credit for the equipment and the building that would be necessary to the investment made in that, that would be used to manufacture renewable energy equipment. So the blades, nacelles,

or bearings that are going to be used in renewable energy equipment are manufactured from those kind of facilities, you can get a North Carolina income tax credit. So it's an incentive to manufacturers to do green manufacturing, essentially.

CHRIS CARNEVALE: And that applies to solar, not just wind?

BOB LEKER: Right, not just wind.

JUSTIN GIBSON: Justin Gibson. I was wondering if there was any sort of study like this for offshore gas drilling that is this extensive?

BOB LEKER: I think that's a BOEM question.

MAUREEN BORNHOLDT: Currently, we are under operation for a 5-year oil and gas program that expires in 2017. And presently areas off of North Carolina are not in that plan. So we're not talking about looking for leasing for oil and gas in North Carolina, at least the federal government isn't. Right now we're focusing on offshore renewable energy, specifically offshore wind.

BOB LEKER: More questions? Okay.

ROGER SHEW: Roger Shew. I just wanted to see if you could tell me more about the 90-meter measurement that you're looking at. How do you actually get that? I wanted to hear a little bit more

about how you actually come up with that, because the capacity factor is really important for all those things. If you're looking at greater than 35 to 40 percent capacity factor, that's really high. I just wanted to know how you would do that.

A second question, if I could, how is the legislature actually working with you on this issue? There was an onshore wind farm that basically went by the wayside because they couldn't get a grid connection for that, so I just wanted to make sure that, very much in favor of this, that those are issues for, you know, looking at the data.

BOB LEKER: Well, I can say that the way you get measurements, there's a couple of ways to do it. You can put a tower up in the water, and that's pretty expensive. You can put that up all the way to the hub height or beyond the hub height so you can get actual wind data with an anemometer and other equipment up at hub height. You can also use these radar devices that are mounted on a platform that could project up using either light or sound, and get a differential on the various temperature air masses and movement that can gather that data. So those are the ways you can get that information.

ROGER SHEW: Have they been done?

BOB LEKER: They have not been done over the water in North Carolina at this point. So we don't have good measurements up to hub height.

WILL WASKES: The closest thing you will have, just to expand on that a little bit, we did -- I guess to make the most simplistic, we do have two interim policy limited leases out on the OCS for meteorological buoys, and in a nutshell both of those are equipped with lidar units. And they're off New Jersey. They have a lease life now expiring in November of 2014. But those were both installed this year. The first one in early September and then another one in November. So those are both actively collecting meteorological data via lidar units.

BRIAN O'HARE: And there are met towers installed in Massachusetts. New Jersey has one; right? Or no, they do not.

WILL WASKES: There's a meteorological tower in Nantucket Sound and several other platforms out there that were whether used for military use or Coast Guard or even a lighthouse station that have meteorological instrumentation on those as well. In terms of our jurisdiction, there's really only the two under the policy and then in Nantucket Sound, which is part of the Cape Wind project.

BOB LEKER: And then you had part of your question about capacity factors? Could you --

ROGER HUGH: Well, the other question concerned the fact that how is the legislature -- if you guys had been working with them any, because -- and the power companies themselves, because there was an onshore, for instance, up in the Northeast of North Carolina that was going to add upwards of 130-plus turbines but basically went by the wayside because you couldn't get a hook up.

BOB LEKER: I think what you're talking about is a PPA, a power purchase agreement. This is sort of one of the linchpins for a project. Whether solar or wind or whatever, you got to get a buyer, and there has to be an agreement that is made between the project owners and the utility. So at this point, to my knowledge, the wind developments on the onshore areas in the Northeast part of the state that were proposed by both Iberdrola and Invenergy don't have PPA agreements.

JEN BANKS: I just want to jump in and let you guys know that that project you're mentioning, I believe, is the Desert Wind project that Iberdrola is working on, and they did not get their PPA in time. They were trying to get it so that they could qualify

for the PTC. There was an expiration of capital investment that they have to make. But now we just got a one-year extension for the PTC, the production tax credit, and Iberdrola is still working to get a PPA on that project. So it's been delayed but it's not completely out of the question. They're still working on it.

MIKE STOBAUGH: My name is Mike Stobaugh, and the one thing that I'm curious about is how much of this will have to be subsidized by the federal government? Because from what I understand, the current wind farms onshore are subsidized substantially in order to keep the operation working. And I'm just curious, what are your projections about what sort of a subsidy would be required for something immediately offshore?

BRIAN O'HARE: There are existing subsidies for renewable energy that Jen mentioned, the production tax credit and investment tax credit. Those just got extended for a year. I will say this, and I actually started my career in offshore oil and gas drilling, so I've looked at a number of different energy sources. Energy generally in the US and really globally, it's highly subsidized. All forms are subsidized. So to say that -- to focus on the subsidies of one and not

others I think sort of misses the boat a little bit. The projections are that, you know, who knows what the tax credit for renewable energy, whether it will be there in a year or not, but the fact is pretty much every energy form has fairly significant subsidies.

MIKE STOBAUGH: I would beg to differ with you, but that's for another day.

BRIAN O'HARE: I would be happy to talk to you about it.

BOB LEKER: I will just also mention that the American Wind Energy Association has proposed a ramping down to zero of PTC by 2018, I believe. So they're looking at a horizon that this generation will become competitive and won't need the PTC or subsidy so to speak.

Other questions?

WILL WASKES: Okay. We'll move on to, I guess, Part 2, which is kind of the federal side of the house. I will hand it over to Maureen Bornholdt.

MAURNEEN BORNHOLDT: Okay. What we wanted to do is give you all a good base of the environment that when we came along in 2011, the partnership and the foundation of the state had laid before the federal government came in. Because one of the things that I want to impress upon y'all that I've been impressed

with is we can sit up in Washington D.C. and think these great ideas and come up with these wonderful processes, but unless you get out in the landscape, talk to people, understand what the state is, understand what the master energy plan is for the state, it doesn't make a difference. So these partnerships and this collaboration between our agency and the state as well as engaging the stakeholders is very, very important.

So what we wanted to do tonight was achieve that by having the state give a presentation as to where they are and then talk about how the federal process overlays that, and then what your all's role will be as we move along.

We're right now just in the beginning of the planning and analysis stage after almost two years of dialogue to get a good understanding of what are the issues important to this area, what drives the economy, how can we integrate with that, because what we're responsible for as steward of the ocean energy resources is not to tip the apple cart. It's to really make balanced, smart, I think Bob said, intelligent decisions as we move over. It's not my goal to lease all the areas off of North Carolina. We're really taking a look at those hot spots to take advantage of

this really exciting new energy resource.

As I mentioned earlier, we're the Bureau of Ocean Energy Management. We are a bureau within the Department of the Interior. That really helps us out because, for instance, in North Carolina, we know there's some incredible national park service assets. So we have that kind of leverage as a sister agency to really work closely with them, as well as the U.S. Fish and Wildlife Service and their responsibilities associated with protected species.

So we have that really solid working relationship there. As I mentioned, we oversee the development of not only oil and gas, but what we're talking about tonight, is renewable energy. And Jen mentioned this in her presentation. Renewable energy hasn't been on the books that long. We received our authority to lease these outer continental shelf lands, those lands from 3 miles to 200 miles, only in 2005. And it took us a while to get regulations, our process promulgated. And that was promulgated on Earth Day in 2009. And in North Carolina we began the dialogue with the partners, with the state, the local entities, and tribal governments only in 2011. So it really is the beginning of the process here.

What I want to briefly go over is just the

four stages of our program and talk to you about where we are presently with North Carolina.

So Stage 1, planning and analysis. This yellow, that's where we are. Again, this is the culmination of two years of dialogue with the Department of Defense uploading information that Bob mentioned about his studies and the work that the state has done to have a dialogue about where along this whole coast are possible polygons that we can then really drill deep into and get some more information about protected resources. What are the important sea floor areas for fish habitats, et cetera.

So presently what we did was publish this Call for Information and Nomination. And what that Call was to say, okay, we have these three polygons. And please take a look at the maps around the area. We have the two in the southern portion, that's Wilmington West and Wilmington East, and then the call area that we call Kitty Hawk in the north.

So we have this discussion, as Bob's presentation kind of outlined the whole area. We've removed Onslow Bay and some of the offshore areas there because we know in this state the DOD and its training and installation activities are very, very important drivers, not only to the state but to the nation for

national security. So you don't see a potential dialogue or a planning area off of Onslow. We had that call. Why should we try to have that argument with DOD about, We want offshore wind, and interrupt training. It just doesn't make sense. We also had a lot of dialogue with the National Oceanic and Atmospheric Administration leveraging off of some studies that North Carolina did associated with particular areas of consumer when it came to hard bottom, because hard bottom is really important for fisher resources.

So the bottom line is after two years of talking with our Intergovernmental Task Force members, we're right here. We're not issuing leases tomorrow. This is really the formality now, the formal dialogue about what three polygons in the ocean do we want to talk further about, do some analytics associated with environmental impact.

I just mentioned briefly the Intergovernmental Task Force. We had 13 Atlantic states along the Atlantic coast, we have 11 Intergovernmental Task Forces. We have folks that sit around the table at the tribal governments, local elected officials, state agencies, as well as the local feds in the area. Again I'm in DC, I don't know what the issues are that drive environmental concerns,

economic concerns in the area, but I use these folks as a resource so I then understand, so that when we make decisions in DC, it's cognitive of what the issues are here. We're informed by the upload that we get from meetings like this. And that's what's so important that you're here tonight, to get an opportunity to talk to us about what your issues and concerns are as well as provide comment to us.

So what is the Call? We publish this Call, what we call our Federal Register, and what that asked was information for us from developers as to are they interested in taking a look at some of these polygons for potential commercial development. Because what we don't want to do is spend our time, your time, our resources on an area that no one wants to even think about developing. So we want to make sure that if we want to move forward with any of these three areas or portions of those three areas, there's some commercial interest there.

So the Call for Information and Nomination is the ability for potential developers, maybe investment entities, to say, hey, I think this may be a good place, and give us a general description of what kinds of activities associated with offshore wind only that they would be interested in doing. And as well as the

Call for Information and Nomination asks about basic information such as geological information, information about archeological resources associated with the potential in a lease. That Call for Information and Nomination is a 45-day comment period, and the comment period closes at the end of January, on the 28th.

This is again a repeat of what we have over here on the wall, but those are the three areas that we're asking this question of developers and the public.

What this leads to is what we call our area of identification. You know we're feds. We love to have, you know, processes and milestones and descriptors. So our area ID is very, very important. You may hear our Secretary of Interior call that his wind energy area. And what we do is we're going to upload the information and input that we get from tonight from the couple evenings ago with Kitty Hawk, as well as any written and oral comments we receive and sit and figure out, okay, Here are the three areas we started with. These are the types of issues and concerns that we've heard. Let's refine this area. What area are we really going to focus on conducting environmental impact study on, environmental assessment study on? Because it may be that we hear there's some

concerns associated with viewshed, or there's an area down here in Wilmington East that has some really unique hard bottom that we missed in this two years of dialogue. So we want to know that. And then what we want do is reflect the next step, have it be the result of that dialogue. So we're really taking a look at areas that are possible to move forward with this.

And let me give you an example. Some people say oh, yeah, sure, I'll sit here tonight and listen to y'all for a couple of hours. I will give you my comments, and then you move on and do what you want. Well, that's not the case. And this is, I think, what's very good about having a very young program, is that you don't have a lot of environmental data, so we really have to rely on public input.

And one of our success stories for area identification that addresses the unique local needs actually happened up off of Rhode Island. We had an area that we called our Rhode Island/Massachusetts Wind Energy Area. It's an area off of the state of Rhode Island that the two states are working together on, along with us, as to moving forward for leasing. And there were really significant fishery resources in that area. And we know there's commercial fishing all along the Atlantic Coast, but this was particularly important

to both of those states. Those states then created these working groups with commercial fishers, and commercial fishers got back to us and said, hey, when you take a look at your potential call area, we have some really significant use that come along way in the middle. Let me map that for you and please consider this when you make that area identification decision. And what we did is this is the first time commercial fishers ever gave us this kind of solid information. And so what we did is we took a look at that and we said you know what, we're going to take this out of consideration for any future offshore wind development off the table.

So this is the opportunity that we have when we come down here and we're working with the states, work with our -- where our stakeholders give us that kind of information data, so when we move to this next step of area identification, we're actually having some analysis on a meaningful area that has some potential to move to the next phase. So it's really important for you to participate either by providing oral comment today or providing us with written communications. It makes a difference.

We know there's a lot of issues in the area off of North Carolina despite the fact we had a lot of

solid communication with the stakeholders of other state agencies and federal agencies. We know this area is a highway. We know there's a lot of vessel traffic, but what we also know is that, yes, it's used, but maybe the density is not as significant as perhaps the state to the north of the commonwealth of Virginia and that traffic to comes out of Norfolk. But the bottom line is we know it's an issue, so how can we have some planning for offshore leasing and development and not upset the apple cart here, to have that consideration, the economic drivers that maritime commerce brings to this state.

So that's one of those questions that we're looking forward to receiving some input and information on as well as well as we are working with the US Coast Guard as well as different maritime organizations to help us get some information about this. We're also conducting our own analysis on what we call the automated identification system data to help us make these plots and understand if we offer for lease here, what does that do for vessel traffic.

We know, as we mentioned earlier today, that there's some really unique assets along the coast. We have park service assets as well as there are recreation destinations and tourism that occurs on the

coast, and we know that viewshed is a concern and an issue. So one of the things that we're doing tomorrow night actually is we're holding a visualization workshop.

We have partnered with our sister agency, the US Park Service, and come up with a visualization study. And the results we're going to show, it's tomorrow at 6:00 at -- where's the venue? The Hilton Riverside. And on the back side of your agenda is the address for this. So I really would encourage you to come out and see this kind of first-time analysis of the implications, potential implications of actually installing turbines outside of this key resource.

So this is the kind of thing we want to do because we want to understand what the implications are so that when we move to that next phase, we're making informed decisions.

The next phase is leasing. So we're right now in Phase 1 with North Carolina, and we're moving slowly toward, after we conclude our environmental analytics and the consultation that we'll have with y'all with the resource agencies, we will move to leasing. That Call for Information will also tell us if there is competitive interest. What we mean by competitive interest for these areas, if there are

overlapping nominations of an area, we'll say, aha, there's some competitive interest, so then we'll move forward with a competitive lease sale. But if we see that there perhaps are areas that a company would nominate that are not overlapping, we can move forward in what we call a noncompetitive process. And the law that's the Energy Policy Act of '05 allows us to do both competitive leasing and noncompetitive leasing.

So not only does this Call for Information and Nomination help us with regard to answering questions or posing questions, it also helps us decide which tract are we going to move forward? Will it be a competitive lease auction or noncompetitive lease negotiation? So that's the next phase. That's again, it's foundation. We start with the information that we get through the task force, what the state has done through public information meetings, we do our environmental analytics, then we move to this.

After leases are issued, the next phase is site characterization and assessment. This is where our lessee will gather that specific information about its leasehold with regard to biological resources, archeological resources. They will conduct some meteorological data collection either through a meteorological tower or met buoys like Will mentioned

that we have presently off of New Jersey.

So what they're doing is they're filling in these specific data points for us so we can then understand what are the implications for a construction operation project. So we have that information that we will share with the public, because it is public information, so we know whether or not we can go ahead and say, hey, it's a good thing to put this particular structure here because we understand what's there. So we can follow the law, do our environmental compliance work that we need to do.

The next step after they collect their data, they come in with a plan, the commercial operations plan, a construction operation plan. What that does, it says, okay, I have my data here. This is my proposal for the build out and construction generation. Then what we do is we evaluate that. Again we're going to continue to work with the stakeholders and with the states, with the first nations, with the local elected officials and review these plans together. The developer or the lessee will undertake the environmental impact statement. They will pay for it. We will contract that out and we will understand now what are the implications of that particular proposal primarily. And we can approve that, we can disapprove

it, or we can approve it with modifications.

So for example, if they come in and want to do something, and through our consultations with the state under the management act, we have to make an adjustment to that proposal, we can. And I think the other key thing here, these facilities are not there forever. The lease that they receive from us has a lease term. It has -- allows them five years to do their data gathering, and then 25 years to construct and generate. At the end of that time period, if they do not go through the renewal process, they must remove the facilities. So it's not this, "I have a lease from the federal government. I can be there forever."

During that point of the life of their construction generation, we will conduct announced and unannounced inspections. We will require monitoring reports from them, and we will make sure that what they're doing is most appropriate, it's done in an engineeringly sound manner and an environmentally sound manner. The lease they have with us is a contract. There will be certain conditions and operations that they must meet.

If, for instance, if there is a endangered species in the vicinity and through the consultations with the research agencies like NOAA, there's a

condition with regard to gathering data or altering operations when a whale migrates through the area, they must adhere to that. If they don't, they will be penalized and they can lose their lease.

So opportunities to comment. Throughout these four phases we're going to talk to our and use the resources around the table at our intergovernmental task forces as well as continue to hold meetings like this in the informal stage as well as we'll have formal consultation points in the regulations. We have comments periods for our sale notices. The National Environmental Policy Act has designated consultation and public comment periods, so we'll do that.

But in addition, again, we're going to come back, sit down, and have these information sessions, because this is all new. I mean, Jen mentioned, yes, we've been doing it since the 1990s in Europe, but this really hasn't been done here. And so what we want to do is make sure we have that dialogue with affected communities and stakeholders.

So there are these opportunities for comment. So what we have tonight is that first opportunity to have this dialogue with you with regard to the Call for Information and Nomination as well as with regard to the Notice of Intent to Prepare an Environmental

Assessment.

Will is going to talk to you a little bit more about the evolution of the call areas, and then Brian Krevor is going to talk to you a little bit about what that Notice of Intent requires, then we'll take questions after that.

WILL WASKES: Okay. Pick up where Mo was talking. I mean, there's a Federal Register of Notice out there, and it's talking about three specific areas. So I thought it would be good to kind of give a little background on it, what's gone into it as well as some of the issues that are still pending and what we're working on associated with it.

So as Mo talked about, we have this North Carolina Federal State Task Force that's working on renewable energy, and it forms kind of the basis for how we formulated these areas. And what we really bring to that table is a whole host of various studies go into it. There are several -- there is a UNC study. You heard a lot of the efforts that were done by the state by UNC Chapel Hill. There's numerous other states that have looked at the Southeast in terms of what would be appropriate siting that contains large amounts of various data that they use in terms of trying to figure out what areas should be moved forward

with, as well as NGOs who conducted studies, NOAA, Fish and Wildlife, all have just done general studies looking -- and we try to really pull all of those together and take a look at. In addition to that, we have lessons learned from other areas.

As you can see in the back map there, we have several other areas that we've been working on delineating. And as we go through that process, we continue to learn from those. In particular, there's new data comes available that we start to see trends from area to area that we want to incorporate. So there's sometimes also we don't even have this data that's available that's already been analyzed, and we have to take raw data and just analyze it ourselves.

So it really all mixes together with a whole host of partners, not only the task force but whether it's shipping. We work with the Coast Guard and we will work with port authorities, maritime user associations, pretty much a whole host trying to collect all the information that we can.

You will see a few examples of that going forward, but really just kind of as a primer, because you're going to see a lot of this terminology in the Register Call document just starting with what you're seeing here on the left is really the coast of North

Carolina. These dotted lines you're seeing here like this outline is what we call protractions. So you will always see a name and number associated with those, and you will see those in the Call. So in this case you will see a Russell NI 1805. So within those squares you are seeing OCS blocks. So what we have here is kind of a zoom-in of four OCS blocks. And just to give you a little background, that's normally the lease unit you hear. You hear about OCS block. And just to give you an idea of the size for those, a whole block from here to here is exactly 4800 meters by 4800 meters. So roughly 3 miles by 3 miles, but not exactly 3 miles.

The smallest unit that we will lease is an aliquot. So in each block there's 16 aliquots. In this case they're labelled A through P. And those are smaller. They're 1/16 of a block, so they're 1200 meters by 1200 meters. So when we're requesting nominations from companies, they're actually nominating either complete full OCS blocks or some number of aliquots. So what you see listed in the Federal Register, you will see full blocks and partial blocks. A full block is the entire block, a partial block is any block that's less than the full 16. It could be 15 of these aliquots; it could be 14; it could be 13. So that's kind of a primer going forward when we look at

this in terms of area.

And I will kind of give you a general sense of the areas in a second. So we really tried to pull, as I said, from all of this available information to start looking at various resources, and I will try to go through those very quickly for a few of them.

So in this case the one we were looking at here is we had a whole host of information on, in this case, marine life, which is really looking at whether it's hard bottom habitat, fisheries, all kind of categorized into one, and obviously that data falls everywhere, but these are areas that we really considered strongly enough to say these need to come out definitely. Not meaning that there aren't other issues associated with it with other portions, but these definitely as a starting point should be removed.

In this case what you're seeing are high avian levels. So you will start to see a synergy between these that are coming on, and mostly what you will start seeing are the capes off of North Carolina. And that attempts to usually make a lot of sense. For example, you're seeing the fisheries that a lot of it is hard bottom habitat. It also ends up being an area when you look at avian. It's a food source for many of the -- fish is a food source for many of the avian

species. In this case section here, you will see the Labrador current and the Gulf Stream current. So you get what's known as the point for an area of updwelling. So it ends up being a very large concentration of birds in there.

We also have to look at things in terms of when you're looking for development, foundations have to go in to the sea floor, so you're looking at suitability, if you will, for there. Again you're seeing some of the same. Each of these capes, there's high sediment movement in those areas, so you can get large amounts of scour. You also have a large amount of topography that's there. You have hard bottom portions that lie there as well. I mean, outside portions, as you start to get closer to the shelf, you start getting specific algae growth. And again, like I said, you start to see again these capes really start to kick out on the portion there.

In this case, we're working with partners. Just another example, in this case this is what Mo was talking about, and Bob and DOD, the bulk of their operations as you can see were all in Onslow Bay. So these are all a compilation of areas that were removed. There's a whole host of other issues.

As I noted, we started to learn from other

areas. So we did a lot of those capes to remove for avian, but we also learned, for example, in New Jersey in this case you're seeing these are all x'ed out because we started to see a trend among all these states, particularly as you get to migratory birds. Abundance is really going to drop off until you get to about six miles offshore, so we went ahead and started to exclude those.

Another example of being the things we looked at is this, is the port of Wilmington. This is the traffic separation scene, essentially how vessels are moving into and out of the port. So you can't have a blockade there. Vessels have to be able to get in and out. So we cleared out there. In this case here this is an explosive anchoring zone where explosives are put on before they're brought up into the port. So as I always say, due to the explosive nature of explosives, you need to clear out portions in there.

And again, here's another example where we decided, within the Call you will see stipulations on certain blocks. So in this case, this is a starting point. We worked with the Coast Guard of a 2-nautical mile buffer around that TSS, are blocks that they would like to have as a no-build zone. They don't want service occupancy within those blocks. So in a

nutshell, the bureau decided to move forward after looking at all that with these three areas.

So just running through them very quickly, you will see Wilmington East, which is the area which is here, Wilmington West, and the call area Kitty Hawk. So call area Kitty Hawk, obviously, is the largest in size. It's very, very large. You're looking at a hundred or a thousand square nautical miles. Wilmington West is about 78 square nautical miles. Wilmington East is about 330. And this kind of runs them down in that block perspective.

Then -- oh, you will see here's an issue, as always, distance from shore in terms of viewshed. So these are the closest points from shore to those. So you are seeing 7, 13, and 6 nautical miles. Those areas still have issues. So in this case, working with the Coast Guard, they gave us -- we worked with them on analyzing the areas where vessel navigation was. They gave us a color coded red, yellow, green. It's kind of intuitive to our red, yellow, green. Red is areas that they think need further studying, would not recommend to move forward with. Yellow are ones that they think may need to not actually be or not be developable but would require additional study, and green meaning they don't see any issues with.

And you can see the bulk of everything you're seeing is red and yellow with some subsets of green, and that is largely based on NIS information kind of getting back to the raw data that we've been analyzing. And you are just seeing here vessel traffic densities from 2009 and 2010. So the issues really associated with those and call area Kitty Hawk you're seeing, you do have vessel traffic coming out of Norfolk running down the bulk of this, is all cargo vessels. The reason you're seeing the separation here is because there are four unmanned Navy platforms that are roughly 30 meters high and they're under commission to separate. So that's an issue.

You're also starting to see some inshore. This is a tug and barge transit route that runs, that folks tend to use. We moved to Wilmington East and West. The same traffic that comes down, if this were a North Carolina running, continues to run down. But here's the port of Wilmington. They have to be able to get in and out of that port. So there's obviously an issue. The Coast Guard is looking at how can we make the situation work there.

So to address those, we have formed what we call maritime working group. So we're really trying to bring the analytics looking at that vessel movement

data with various users of the area. So the port authorities, the pilots, the coast guard, those tug and barge operators, to really kind of bring together the analytics, they're real time use, and see if there's any solutions they will identify. Is there anything we can do within there? What area should we take out? Is there an area that's developable in there? So it's really trying to pull those three things together to get those in.

So it's one thing you will see in the Call that's specifically asked comments on. So we've already held our first meeting. We definitely have started to get some feedback from the tug and barge operators of them working on trying to set up an area strip closer to shore they feel they would need to be able to move through. We're still working with the deep water vessel tanker operators to get their input. The first meeting we had really focused largely on the tugs and the towing. We didn't get as much participation from the deep water vessel captains so we will be setting up another meeting to address those, and then start to move through the rest of the call areas.

Visuals, visual impacts is another area of large issue. Just to highlight those, when we worked

with the task force, the park service immediately came up. And see all this here is park service. Cape Hatteras and Cape Lookout National Seashores initially recommended a 20-nautical mile buffer, so that is what this triangular ribbon looks like around that 20 nautical miles from the boundaries of the National Park Service land.

What you're seeing here as well of these house-shaped structures are places that are on the historic register. And some of those are on there because of their viewshed. Viewshed is what makes them important. So there's a concern there, and then obviously as we get close to that coast line, the closer you get, the more you will have visual impact to people on the shore. So it's a known issue. So we've partnered up with them to do a visualization study as Mo mentioned.

We did a open house with -- an open house tomorrow. So it was conducted by T.J. Boyles and Associates, actually two of them are in the audience tonight. So they will be at the visual simulation tomorrow. So to basically create montages, animations, and nighttime videos of those to come up with what both agencies would see as accurate representations of what these look like from various distances offshore.

So we have 18 different locations, four different lighting conditions, three different distances, and we have two different turbine models all working with the parks service to develop these. So this is kind of throwing it all together of what that would look like. So all you're really seeing here are the three distance lines from shore, 5, 10, 15 nautical miles. The blobs you're seeing are essentially the turbine layouts. So this is kind of kind of a close end where you can actually see a turbine layout. This is the viewpoint of where you will be seeing. In this case, this is a shot of what you're looking at from a panoramic perspective and the actual zoom-in with the photo.

So just to give you kind of a feel for those, a few examples that we put in there to look at here, and again I would encourage everyone, this is one of the issues that we think is biggest and we want to be able to get your input on, so we definitely recommend everyone to please come to the open house tomorrow where we will have all of these out to see for all the various locations.

But just to give you an example of what you would be seeing in this case, this is a simulation for beach in late afternoon using a Siemens 3.6 megawatt

machine, 10 nautical miles from shore. Again you really need to come to the open house, because what you see on the projector here is really not a true indication from what you would see on the workshop. It's important to view these correctly.

But just the same scenario, the same turbine type, 200 turbines of the Siemens 3.6 megawatt, 20 nautical miles from shore, this is that same looking at a Vestas machine. That would be a 7 megawatt machine, so well over 600 feet in height, so at 10 and that would be at 20. So these will all be on display in various capacities, with animations, with nighttime videos, panoramics, as well as large displays with folks that tell you the nuances how to view those appropriately, all tomorrow night at the facility -- at the Hilton Riverside. So the address and the directions is on the back of the agenda.

So we're really looking for comments on those. This is really where you can make your comments. We're going to be taking comments tonight but the comment period closes on the 28th, that's where you can find the document in question, how you can submit questions, whether you want to do it electronically or snail mail.

With that I will now hand it over to Brian

Krevor who will be going over the environmental review process.

BRIAN KREVOR: Good evening, everyone. Again, my name is Brian Krevor. I'm an environmental protection specialist with BOEM and I'm the NEPA Coordinator for North Carolina. What we're going to talk about is the Notice of Intent, what that is, as well as what the environmental assessment is, and then also more about the overall BOEM environmental process.

So what is a Notice of Intent? A Notice of Intent is a Federal Register Notice that is published in order to notify the public, first of all, that we are actually going to prepare an environmental assessment, also to solicit input from various stakeholders on the various issues such as what resources BOEM should be looking at. Also to identify alternatives that should be covered in the environmental assessment. The actual North Carolina Notice of Intent was published on December 13, 2012. It was published concurrently with the Call for Information.

So what is the environment assessment? I'm sure most of you have heard about these kind of documents before, and they're really to determine if an action has significant impacts. It's also meant to

inform decision makers of environmental consequences of a federal action. So before there was the National Environmental Policy Act, the federal government could basically do any action without really considering the environmental consequences of those actions. They may have considered them, they may have not, but there was no way for them to really document and show they did consider those issues.

So when the National Environmental Policy Act came out in 1969, it required that the federal government look at its actions and make an informed decision. It could still take an action that harms the environment, but it has to at least look at it, know the consequences, and make a decision. So the preparation of an environmental assessment, the wind energy area which you guys have heard about that gets established, that's the air identification phase, would form the basis for the proposed action in our environmental assessment. The proposed action that we're going to be looking at would include lease issuance and associated site characterization, and that would be the survey activities, so actually seeing what is underneath the ocean. And there will also be site assessment activities. We talked earlier about meteorological towers and buoys, so these would be

extremely important to a leaseholder to actually get the data of what the wind resources are so they can really come up with a construction and operations plan.

So in the environmental assessment, we're going to look at the environmental consequences of those actions. So we've also -- we had prepared EAs like this before. So the one for North Carolina will not be really anything new for us. There was the mid-Atlantic EA which covered the states of New Jersey, Delaware, Maryland, and Virginia that actually came up with the finding of no significant impact. We have two other EAs that we have completed -- well, not quite completed. We have completed initial draft EAs of the Rhode Island/Massachusetts EA and the Massachusetts EA which is one that I actually worked on. And we're going to take a similar approach with North Carolina, and you can check out those previous EAs on our website under Renewable Energy Program and Smart from the Start. If you want to read 300-page documents, you can go on there and check them out, they're a lot of fun.

So the actual EA scenario that we're going to be looking at, we're going to talk about routine activities that are things that you anticipate when you're doing the project, and nonroutine activities, things that you don't really anticipate to happen but

could happen and are reasonably foreseeable, so we do look at them. Routine activities would be site characterization surveys, so looking for shallow hazards. Geological, geophysical, geotechnical, a lot of geo's, archeological, and biological. So archeological, we're looking for boat ship wrecks and possibly prehistoric sites. Then finally site assessment activities, so the installation of met towers and met buoys.

Then there are the nonroutine activities. We have severe storms, extremely important down here. Hurricanes are very prevalent offshore of North Carolina. I'm sure everyone here knows that. So that is something we're going to take into consideration even at this environmental assessment phase.

Also vessel collisions and allisions. We were asking what collisions are and what allisions are, what the difference between that is. Vessel collisions, and correct me if I get this wrong, are when two moving objects hit each other, so two vessels hit each other, or if a vessel were to hit a meteorological tower, that would be an allision. Then spills or other pollutants, so from a collision or from met towers somehow falling down. We don't think that will happen, but if it did, we would look at what the

environmental consequences of that would be.

A quick note about what this environmental assessment covers and what it doesn't. The environmental assessment at this point is not considering the actual construction of a renewable energy facility. The impacts of that actual action would happen at a later phase if -- once we approve a lease and a lessee goes out and does its site assessment and site characterization report, determine that they want to submit a construction and operation plan. At that point we would actually do an environmental impact statement.

But we do an EA at this point because there really isn't enough information to do a full-blown EIS. We don't know what kind of turbines they're going to use. That technology is changing every day. If we had done one of these three years ago, we would probably be looking at Siemens 3.2 megawatt and thinking that's the standard, that's what people are going to go with. If we were to do it now we would probably say 5 megawatts, at least, is what they'd go with for offshore North Carolina. Once we actually get a construction operation plan, it could be a lot more. So it would be very premature to do an EIS and we wouldn't really have that real data to do a great environmental analysis on

and that's what we're trying to do.

So here's some of the resources that we're going to consider when we do our environmental assessment. As you can see we have physical resources, biological resources, and socioeconomic. And lot of areas have different importance they place on these issues. In the Northeast we've seen that cultural resources and marine mammals have been extremely important as well as commercial fishing. Down here visual aesthetics and visual impacts may be the big issues. We really don't know until we get the comments from you guys and until we really dive into the assessment, so comments are extremely important.

And also we have to consider alternatives. Some examples of one we could consider would be geographic alternatives. If there's an area where there's known a lot of hard bottom, we could talk about excluding that area. Timing and seasonal alternatives in the Northeast.

We've done different things to protect the North Atlantic right whale. For instance, what we've done is we have seasonal prohibitions for pile drivings, so when right whales are known to go through the area, we have prohibitions on that. Also things where you have to have observers on ships looking for

sea turtles, marine mammals, that sort of thing. And there's always a no-action alternative. All NEPA documents have to have one. So that's if we're not doing any activities, we look at the consequences for that. We also look at cumulative impacts for every environmental document we do. Past, present, and reasonable foreseeable actions. That includes onshore developments, existing port waterway usage, marine traffic, and also we consider other renewable energy projects that might be going on offshore.

So in the case of North Carolina, right now, there's a Virginia lease that is being worked on, so that would be something that we would consider in our document. And also consultations, the National Environmental Policy Act is one of the big laws we work with and, you know, gets all the hype because it's the EA, it's a big document and everything.

But there's other laws and executive orders we also have to work through. And they include the National Environmental Policy Act, the Endangered Species Act, EFH consultations, Coastal Zone Management Act, and finally, government-to-government travel consultations.

And so if the EA finds there have been significant impacts, we would go ahead and prepare an

EIS. The previous three EAs, we haven't found any significant impacts from the activities that we have been proposing, but we don't know of -- that's why we do them for every area, because we don't know until we actually do it what the resources are out there and what the impacts could be, so we'll look into that; however, if the EA results in a finding of no significant impact, then BOEM may issue commercial wind leases.

The National Environmental Policy Act, when they wrote it up, they were very smart. They said that you have to use the best available information. So they didn't want people to have to say, "You don't know anything about this, so you have to go do a 10-year study on it before you can come up with your action." So the best available information is really the standard; however, the Bureau of Ocean Energy Management, we take our responsibilities as stewards very seriously and we try to come up with ways to fill the data gap to inform our decision makers better before we conclude our documents. So we have a very robust environmental studies program that has a national studies list every year, comes out with different studies that are worked on to try to fill data gaps, not just for renewables but for the oil and

gas program. So we work those constantly.

Specifically for North Carolina, we have recently partnered with the UNC Chapel Hill and NOAA to have two studies that were going to fill data gaps for these call areas. The first issue we have is that, and as Mo was saying earlier, it's very hard to get fisherman to identify where they catch fish because that's their -- that's their -- that's their entire way of life and they don't want everyone going there and taking their resource. So we're going to work through existing relationships that UNC Chapel Hill has to identify where the fishing grounds are and keep that secret, and then also to identify access routes to those fishing grounds. It's one thing to exclude fishing grounds, we also have to think they have to be able to get out there. So that's one thing we're looking into.

Also we talked earlier a lot about hard bottom. And off of Wilmington East, there is thoughts from NOAA that there probably is a good amount of hard bottom there but it hasn't been pinpointed. So we're going to do surveys there to identify hard bottoms as well as artificial reefs and archeological resources. And from there we'll hopefully be able to inform our environmental document as well as inform developers so

that when a developer goes into an area, they know ahead of time what kind of things might be out there.

And so in conclusion, what we're saying earlier what we want comments on from you guys for the Notice of Intent issues and alternatives to be considered in the environmental assessment, potential mitigation measures that you might know about that we haven't considered in the past, also sources of information relative to the analysis.

As I said, we need the best available information. We have subject matter experts who read tons of studies all the time but we -- it's possible that we missed them. So if you know of a new study that you want to make sure that we consider, especially ones for North Carolina, please send those along and we'll make sure they're incorporated into our environmental analysis.

And so the comments are due by January 28th. And here's how you submit them. Most people go online and check out the Notice of Intent on your website and then go over to regulations.gov and enter in the keyword and do it there; however, if you're more old fashioned and want to submit through regular mail, that works too. Or if you want to come visit us in Herndon, you can come hand it right to us. Make a nice trip up

there.

So any questions on not just this presentation but the previous two BOEM presentations we can take at this time.

BARBARA WILSON: Barbara Wilson. On the previous slides you had had three substations.

WILL WASKES: Yes.

BARBARA WILSON: Are those existing substations?

WILL WASKES: Those were existing that were actually identified through a study conducted via funding through the state looking at the most likely substations in terms of having connection capacity to be the most likely that would be used. So there are other substations but those are -- I guess what you would say, the three most likely to be used at the time the study was done.

BARBARA WILSON: Do the substations connect just within North Carolina or within Virginia and South Carolina also?

WILL WASKES: Power really gets into -- I know a lot of people on the electricity side think that what goes into one place, but normally they're managed by regional units. I'm most familiar with on the east side where you have PJM which moves electricity all the

way from -- I mean, you have New Jersey all the way up to Michigan, up to New York. So they don't necessarily -- that electricity can be moved around.

BARBARA WILSON: So the electricity that is created by these offshore, if they ever get built, can be moved out of North Carolina?

WILL WASKES: Yes.

BARBARA WILSON: Okay.

CHRIS CARNEVALE: I have a couple of questions. Can I ask two? Great. Thank you. First of all, will the PowerPoints, particularly the BOEM PowerPoints, be made available online?

WILL WASKES: Yeah. They will all be on -- if you went to BOEM, State Activities North Carolina, all three -- actually all six PowerPoints will actually be on there from today's meeting.

CHRIS CARNEVALE: Okay; great. Thank you. When will they be posted?

WILL WASKES: You will probably see them sometime, I would say, mid-next week.

CHRIS CARNEVALE: Okay; great. Thank you. Then my second question is about the Areas of Interest, Number 3 and 4. And so we heard from you that DOD, those concerns were kind of too great for us to move ahead on this NOI, but does BOEM have any plans to keep

looking at those areas or are those basically off -- are those kind of -- those are -- nothing going on with those for the foreseeable future?

MAURNEEN BORNHOLDT: Right now we're focused on gathering information on the three call areas, but we will continue our dialogue with the National Park Services. There is also a NOAA and BOEM study associated with Areas 3 and 4. I guess it's with the Battle of the Atlantic. There are some archeological sights there.

So we want to get some more information with regard to that before we go out with a public information notice. As well as the viewshed and the visualization study talks about some assets in this area as well. So those are still under development but they're not ready for a Call for Information and Nomination or a NOI at this point in time.

ROGER SHEW: Roger Shew. You showed your green, yellow, red, and there was really not much green. So how restrictive is the red for getting anything done in these areas?

WILL WASKES: I mean, the Coast Guard stands if you were -- and it spells it out in the Call for Information of how they identify, you know, what they define as red, yellow, green. That was something they

gave to us. It was their recommendation. So our bureau decided to move forward with that area, but at the same time is why we started the maritime-working-group effort to look at that issue and see if there was something within that area that would be developable at the time. So the Coast Guard, as you note, is based upon 2009 AIS information is what they based that on. So we're constantly doing more data and more analysis with that data.

As you note, it's part of that caveat, as more information comes in, those recommendations can be revised. So they're really looking as part of that call to end that maritime-working-group to keep getting more information to move into the area identification speech that Maureen talked about in terms of how that area would be further refined. Is there a portion in there that is developable, not developable because of vessel concerns? So that's something we continue to work on through the call period and through that maritime working group.

JUSTIN GIBSON: Justin Gibson. What kind of time frame would we begin so start looking at conservative estimates of potential construction or when you're starting to offer leases and things of that nature?

MAURNEEN BORNHOLDT: So presently the two comment periods close at the end of January. So it takes us a while to upload that information to move forward with a recommendation to our senior leadership as to what that area identification should be, and that forms as Brian's presentation mentioned, that proposed action that we'll do our environmental assessment on.

The EA, depending on the type of information comments we get, the kinds of analytical challenges we receive while doing the environmental assessment, it could take anywhere between 9 to 18 months. It just depends. We also -- the consultation page that Brian had in his presentation, there's some required consultations there with resource agencies, Fish and Wildlife Service, the National Marine Fishery Services as well as the state. We have the Coldwell Management Act (phonetic) that has particular time period. The two other consultations could be 135 days. So we're adding some time for those. So let's say maybe the EA, twelve months or a little bit plus. Then what we will do is put that EA out for comments, and that comment period usually runs about 30 days. We'll see what we get with regard to the comment to either revise that EA or perhaps decide in the revision that there's significant impact and move to an EIS. But let's not

assume that.

So once an EA is complete, and we have the terms and conditions and we know how we're going to move forward with requirements associated with the leases, then the next step, we start moving to that leasing phase. We will then prepare a draft proposed sale notice that we will share with the task force members to get their comment on. Once that is final and it's published, there's a 60-day comment period. So now you're starting to calculate in your head that this is going to take some time. So 60-day comment period, proposed sales notice, we have to upload those comments. Then we go out with the final sales notice. We can hold a lease sale no sooner than 30 days after that is published. So I guess we're taking a look at perhaps sometime 2014 late, 2015 maybe having a lease sale.

Then again that lessee has up to five years to collect that project specific data. They can do it in two years maybe. That's kind of the nice thing about some of these cooperative study efforts, that can help fill some of those data gaps and maybe make that time period to collect that specific data shorter.

Then if the company comes in with a construction operation plan at the end of that five

years, that's an environmental impact statement, as Brian mentioned. That can take anywhere between, oh, 18 and 24 months. Again, it really depends on the kind of information, the environmental issues and resources, the multiple use issues in that area, so anywhere between 18 and 24 months. Then we will approve a construction operation plan. They can't build yet. They have to come in with the engineering layouts in what we call our facility design.

So you're talking about we're not going to see a facility in the water anytime next year. But we're moving down for that process. A lot of the reason why we have to do the environmental compliance is because of other laws. But we also have a very rigorous requirement in our regulations to make sure that what is put out there, hence those engineering reports, even though they give us a construction operation notice with a general outline, but the actual blueprints are in that facility design, then they can begin to construct.

So it's going to be a while before this happens. Again it depends on where ultimately those lessees are issued, what kinds of challenges, whether physical challenges or biological challenges, or multiple use challenges that live there. But we're

hoping with this process with you, with our task force, will remove some of the big question marks, focus on perhaps two or three big issues, that with the visualization in that location.

I hope to still be in my position to see one of these things, but it does take time. This is also really new, and that's one of the challenges. You know, Jen Banks mentioned you see Europe is ahead of us. But they also had a lot of learning and a different leasing regime. Where initially, I believe, the UK went out and identified these areas, and after they issued leases or rights of access, then did environmental compliance. So it's new technology. It is process rich. But again, I think Bob mentioned in his presentation, it's about doing it in a smart way. And I think by partnering, getting some of these data collection efforts, we can maybe make more efficient some of the data collection and environmental analysis by removing significant conflicts and maybe reaching that day where we flip the switch for generation a lot sooner.

WILL WASKES: Any other questions? Again, I would like to keep them about the presentations so then we can make sure we get public comment and then we'll take more question and answers. But if there are any

ones about the three presentations for clarifications?

GARY DUNOVAN: Gary Dunovan. I'm just wondering if the European and commercial versions have any data regarding our catastrophic wind events? Is the technology capable of handling the weather we've got here?

WILL WASKES: There are -- well, first you got to realize when you're looking over at the European experience, they don't have hurricane --

GARY DUNOVAN: My point.

WILL WASKES: -- hurricane winds, so I mean, they do have -- a lot of these are in the North Sea, so the real issue there is you're dealing with really significant wave heights as opposed to wind speed. But in terms of standards, there are -- there's an international standard that looks at storm events, different organizations have different codes that they look at. So like GL standard, there's an IEC standard and that's probably more than people want to hear.

A AWEA group is working with DOE and a whole host of other folks, that's the American Wind Energy Association, on developing US standards for those. I believe that BOEM's approach moving forward will be a design basis approach. So we will look at the meteorological conditions of the area, what we call the

met-ocean criteria, which will vary. So obviously Florida, Georgia, South Carolina, you're going to be dealing with the hurricane events. You most likely don't have that as you go further north. So we'll be looking at various standards on a design basis to make sure that they can withstand those criteria.

BRIAN KREVOR: BOEM as an organization has a lot of experience with the gulf with oil and gas. I was just saying that BOEM has a lot of experience in the Gulf of Mexico with the oil and gas program with offshore structures and severe storms, up to Category 5 hurricanes. So there is that experience within the agency. It's not exactly the same thing, but the BOEM engineers have looked at that and been a part of that throughout its history.

WILL WASKES: It's one we have luckily, as Mo pointed out, will be a while before these things are in the water. But it's why we have a technology assessment and research division that has quite a bit of initiatives looking at standards and those sorts of things. So we're working on it fast and furious and putting a lot of effort into it in order to be prepared for it as we move into the next few years.

BARBARA WILSON: I just have a question about -- Barbara Wilson, I'm sorry -- about the two

notices. I'm kind of confused on which one I'm addressing with my concerns. So if you could better explain what kind of comments you're looking for from each of those notices?

MAURNEEN BORNHOLDT: I will start with probably more straightforward one that Brian just described. That Notice of Intent to Prepare Environmental Analysis, what we're asking for is the public, anybody, to help us identify either sources of data that should be used, because you're aware of situations, resources, uses in those three areas. If you have a thought with regard to how we could frame our analysis to understand what the environmental implications could be of leasing. If you want to help us design a scenario that, you know, when you do -- when you perform analysis, you have to have some comparisons and some alternatives. So if you're thinking more about the analytics, or if you have questions about "I know that there are sensitive hard bottoms down in Wilmington East," you know, please focus your analysis on that. That would be something that you would comment to on the Notice of Intent to Prepare a EA.

With regard to the Call for Information and Nomination, that is it tends to be oriented more

towards developers, but there is an environmental component. And also another use component that Will mentioned is regarding vessel traffic. So if you're aware of those sorts of issues, then I would dedicate to the Call for Information and Nomination. If you end up giving EA comments to the Call, we're not going to throw them away. We'll walk down the hall and give them to Brian. We'll make sure it gets to the appropriate place. The key thing is just comment, and we'll make sure it lands in the right bucket when it gets there.

But this is generally the environmental analysis, key environmental issues, and Will's is mainly oriented towards this issue associated with interest. And if there is interest, are there unique situations.

WILL WASKES: I mean, just to kind of elaborate on that. Really the two we highlighted today is there's definitely vessels that use particularly call area Kitty Hawk. So maritime use. Who uses that? Whether it's cargo, recreational fishermen, commercial fishermen, than kind of information would be great.

The other big component obviously is visual. Again, that's why I would emphasize really on the open-house tomorrow where you will be able to actually

see layouts at different distances. We will have a court reporter there as well. So information about how far offshore you would want these things, whether, "I'm fine 10." "I want past 20." All that information is good to us. And what it is, you know, that -- the reasons why and those sorts of things. So you will see a whole list and the Call for Information will be that whole section. But those are two, I think, really key and critical that we want to get information on so we can help refine the areas.

MARYANN PRIESTLY: Maryann Priestly. Are these lessees already in place? Are they US companies? Are they international companies? Can you give me some names about the people who would be doing this construction?

MAURNEEN BORNHOLDT: That is one of the reasons why we go out with the Call for Information and Nomination, to see what kind of companies are interested in offshore North Carolina. If you go to our website and go to the state activities, click on Maryland/New Jersey, there are already companies that have expressed interest off those states. Rhode Island, Massachusetts as well where we've already published results from the Call for Information and Nomination.

With regard to their qualification, they must be incorporated in the United States as well as -- and we have within our regulations what that means in the documentation they must provide as well as our Bureau does have an additional qualification based on technical expertise and financial qualifications. This is something that the oil and gas program does not have, just the energy program has.

So right now, the quick answer is we don't know who those companies are because the Call for Information comment period has not closed yet, but when they do come in, if they're not incorporated in the United States, they're not qualified to hold an outer continental shelf renewable energy lease, and then if they are incorporated in the United States, then we do the secondary evaluation to make sure.

MARYANN PRIESTLY: Thank you.

JENNIFER GOLLODAY: I was just going to mention that shortly after the call comment period closes, we'll create maps in the list of blocks that each developer who nominated a portion of one of the call areas, you know, we will say who each of the developers are. So all of that will be on the website and you can see that.

TOM BLAIRE: Tom Blaire. You all are

speaking very confidently in saying "when" instead of "if." Is this just a matter of vetting the sites and going through the process? Will there be offshore wind in North Carolina?

MAURNEEN BORNHOLDT: I think there will be offshore wind in North Carolina. I'm glad you pointed that out, because maybe we should be a little more cautious with how we're framing it. It's a matter of to what area and what kind of refined area. With the areas that appear, the polygons that appear in the Call for Information and Nomination, I think of as discussion topics. They will morph depending on the type of comments we get, the ongoing discussion with the maritime working group; for example, Kitty Hawk is probably going to change. But we wanted to be able to put some sight boards on what the topic was, what the area was so we can have that conversation.

I think we will see offshore wind in North Carolina. It's going to be a matter of what kind of configuration ultimately is offered for lease. And we won't know that until after the environmental work is completed when we see what we have after all these consultations are completed, we'll see what kind of conditions.

So this is kind of that first step in that

planning and analysis to determine, are we talking about the right places for commercial development. Because if we don't get any bites there, we're not going to -- we are going to scratch our heads and figure out what did we miss? Where's the better place? I think it's a matter of it will happen, it's just a matter of when, and then what configuration.

WILL WASKES: I'm actually going to stop at questions now just because I want to make sure that we get to the public comment portion, since we're just after 7:30. But we will come back. Like I said, we will answer questions for as long as people have questions.

So with that, just to get to the comments again, I would emphasize we have comments sheets in the back so if you don't want to make any comments on the open floor, feel free to write those and hand those to us; otherwise, as we talk through these, we will take comments through those.

But now I would like to open the floor to comments. So we will try to pass the mike to each person as we see their hands. Again please state your name.

MAC MONTGOMERY: My name is Mac Montgomery. I have two comments that I would like to give you.

First, on behalf of the North Carolina Legislature, this area is represented -- part of it, one of our representatives is Representative Susi Hamilton from District 18. I will give you hard copies of this. Representative Hamilton is the cochair of the Utilities Committee for the North Carolina House, and also she sits on the Environmental Committee for the North Carolina House.

And she forwarded this statement to be read tonight, and I will give you a copy. It's a quote.

"I am a strong supporter of renewable energy and believe it is in the future of our domestic energy policies. As such, I support the government's participation and investment in the research and development in all forms of renewable energy. Offshore wind development is a viable option to consider as we examine our state's energy demands and the resources we need to meet these demands now and in the future.

Signed, Representative Susi H. Hamilton."

She would like that to be on the record. They're in session today, that's the reason Representative Hamilton or her staff can't be here tonight. So thank you for taking that.

My name is Mac Montgomery, and I happen -- I'm the chairman of the Cape Fear group of the North

Carolina Sierra Club. If you are not familiar with Sierra, we are the oldest, largest, and one of the most influential grass roots environmental organizations in the country.

And you've picked an area that almost over a hundred years ago two gentlemen visited Kitty Hawk where you are, and Orville and Wilbur Wright went to the Outer Banks here in North Carolina, and they came here because of our winds. And from that point it's all history what happened there. So are we going to develop wind? I think the answer is yes.

So a century later our state now has the opportunity to harness that same wind. Abundant offshore wind resources to generate electricity we need for our homes and businesses while still protecting the air, water, and natural beauty, a place where we're proud to call home.

Offshore wind energy has a promising start already in North Carolina. There are lots more work to be done. The jobs Brian has brought out already that are already here. Every dollar already available is in Desert Wind project, a proposed private onshore development, and those are in the process of working as our first large scale wind operations. And they open our foray into wind energy. So is it going to happen?

We believe it is.

Recent scientific studies show cases was brought out that North Carolina is a magnificent offshore potential. Commercial developers are already beginning to explore the possibility of offshore wind in the form and a number of major corporations have already expressed interest even though you haven't gone out for it. And this action, your action by BOEM, is a vital step forward to capital investment here in North Carolina.

You pointed out the shallow wind resources are the best on the Atlantic Coast. We have the potential to generate internally all of the electrical needs of our state, if we needed to, in addition to being able to export electricity.

Currently we have the capability to replace coal, which is a major effort of the Sierra Club, and this state spends $2.3 billion a year importing coal into North Carolina, which we can produce locally without having to spend that money again.

This is an industry that could bring up to 45,000 jobs here in North Carolina, as was brought out. The material to support this has to be constructed here because of the size. This is not going to be imported from the state of Illinois to North Carolina. These

are going to be North Carolina jobs. And jobs created cannot be outsourced. They need to be in the proximity of the coast, which is where we are, which spurs homegrown economic development here.

North Carolina ports and infrastructure are uniquely suited and equipped to support offshore wind development. The North Carolina University and community college systems are premiere choices for workforce development. And Southeastern North Carolina provides all of these assets to take advantage of wind energy and development for our state.

The North Carolina Sierra Club and all its members and all of its affiliates strongly supports the continued development of offshore wind energy and the efforts of BOEM, the state task force, and the Department of Interior. We have a great potential for the future, and the Sierra Club stands ready to help make that future happen here in our state. Thank you, very much.

DAVE ROGERS: Hi. My name is Dave Rogers. I'm the field director for Environment North Carolina, which is a state-based environment advocacy organization. And I've talked to thousands of North Carolinians across the state about this issue. And the support for offshore wind has been overwhelming.

People really see it as a way to meet our future energy needs, that allows us to protect our special places. And it -- as Mac said, given the fact that we have more potential for offshore wind than any other Atlantic state, it allows us to be a leader in the clean energy economy and create thousands of jobs.

So I've got 2,000 public comments in support of offshore wind for y'all.

And then the other thing, I would be remised, my folks actually live in Holden Beach. I was talking to my mom about this, which is the Wilmington West area, and she wanted me to say that she likes windmills and she thinks they're pretty and she would much rather see that when she looks out at the ocean than an oil rig. So she's for offshore wind too.

WILL WASKES: Any others?

CHRIS CARNEVALE: Thank you. Chris Carnevale. I have some lengthy statements here. Are we trying to keep to a time limit? Okay. Great. We -- and this is, I'm sorry to say, but an abbreviated version of our more full technical comments which we'll submit online later in the month.

My name is Chris Carnevale and I serve as the Coastal Climate and Energy Coordinator for the Southern Alliance for Clean Energy or SACE. SACE is a regional

organization that promotes responsible energy choices that create global warming solutions and ensure clean, safe and healthy communities throughout the Southeast. We welcome this opportunity to engage in a thoughtful offshore energy discussion and we would like to thank you for your willingness to discuss offshore energy. SACE would like to voice our support for offshore wind energy and BOEM's Smart from the Start initiatives in North Carolina, especially this Notice of Intent to Prepare an Environmental Assessment.

We respectfully submit the following suggestions for improving the permitting process for offshore wind in North Carolina.

Recommendation Number 1: Improve stakeholder engagement. Early stakeholder engagement is a vital component to offshore wind energy development. Without appropriate outreach activities, offshore wind energy development potentially faces unnecessary confusion and opposition. By proactively seeking out ways to engage the public, especially people with a vested interest in an area, BOEM's Smart from the Start initiative would promote trust, dialog and information sharing. Such activities may help prevent unnecessary delays in the future, including but not limited to lawsuits. SACE is willing and able to assist in stakeholder outreach in

coordination with BOEM.

Specifically, we encourage BOEM to improve stakeholder engagement in Virginia and South Carolina regarding North Carolina's designated wind energy areas and to schedule opportunities for public comment, like today's meeting, after informational sessions, like tomorrow's open house, not before.

Recommendation Number 2: Clarify BOEM's intent with regards to other offshore areas. The NC RE Task Force developed five areas of interest, or AOIs, for offshore wind development activities for BOEM's Smart from the Start initiative, yet AOI No. 3 and No. 4 have been left off this Notice of Intent to Prepare an EA. By removing large swaths of ocean from final wind energy areas, BOEM may be unintentionally forcing multiple offshore wind developers to needlessly compete against one another that my artificially drive up the cost of offshore wind development. SACE encourages BOEM to clarify its intent with AOI No. 3 and AOI No. 4. In preparation for those activities, SACE also recommends that BOEM's EA for the Kitty Hawk Call Area, the Wilmington West Call Area, and the Wilmington East Call Area include relevant information that may be applicable to AOI No. 3 and AOI No. 4.

Recommendation No. 3: Set additional

protections for the North Atlantic right whale. The North Atlantic right whale is perhaps the most endangered species along the Atlantic Coast and is particularly vulnerable to ship strikes. SACE strongly encourages BOEM to extend the National Marine Fisheries Service vessel speed restrictions throughout the three designated wind energy areas.

Other activities should be restricted during right whale migration season. For example, geophysical and geological surveys, especially seismic surveys, ought to be limited to a period between May and October, when research suggests that the North Atlantic right whales are unlikely to be in the area. Similarly, construction activities, especially pile driving and other that require heavy boat traffic, should retain seasonal restrictions. Biological surveys that are specifically designed to aide in the detection of the North Atlantic right whale, as well as other important fauna, should be allowed to proceed year round.

Recommendation No. 4: Define best management practices, BMP. SACE encourages BOEM to set best management practices, which might include: Incorporation of the seasonal restrictions using the green, yellow and red time period recommendations set

out by the collaborative agreement to protect North Atlantic right whales between offshore wind developers and conservation non-governmental organizations in the Mid-Atlantic; Promoting best management practices described in the BOEM Environmental Assessment for the Mid-Atlantic; Providing seasonal protection for the North Atlantic right whale by prohibiting construction and geological and geophysical seismic surveys from November 1 to April 30, while allowing biological surveys; Requiring pile-driving technology designed to reduce noise including but not limited to vibratory pile driving, press-in pile driving, bubble curtains, cushion blocks, cofferdams, noise attenuation piles and ramp-up, or soft start piling; Requiring data collection methodology that is consistent with BOEM best practices and other wind energy areas; Nothing that if, through BOEM's assessment, it is discovered that one particular data collection configuration poses substantially less risk than another, BOEM should work to encourage the use of those configurations.

Recommendation No. 5: Evaluate future environmental benefits from wind farm development. Wind energy generation supplants other energy sources that can be polluting or inefficient. The upstream environmental benefits of wind energy should be taken

into account insofar as it reduces the need for destructive mining practices, emission of NOx, SOx, CO2, and particulate matter or radioactive waste, and mitigates water demand for electricity.

Wind farm construction may even improve the marine ecosystem by serving as artificial reef or redirecting shipping lanes away from ecologically sensitive areas. More research must be completed to determine the total ecosystem impact from offshore wind turbines. The generation of electricity from wind energy is renewable and clean; however, wind farms must be sited in locations that minimize their overall environmental footprint.

Recommendation No. 6: Conduct Environmental assessment for multiple technologies. The offshore wind energy industry is developing rapidly in the United States and buoy data collection configurations may be seen as an attractive alternative to met towers. SACE recommends the BOEM develop its environmental assessment based on ubiquitous deployment of meteorological towers as well as buoy data collection configurations. BOEM should also identify workarounds, best management practices, and preferences for less environmentally intrusive technologies. SACE encourages this environmental assessment process

instead of the more extensive environmental impact statement process for data collection configurations.

Recommendation No. 7: Utilize existing data. A study completed by Geo-Marine Incorporated in 2011 estimates that North Carolina has approximately 3,200 square miles of area that may be of interest to offshore wind energy developers, taking into consideration geological, environmental, economic, military, transportation, and other constraints. This report is available online for download, as well as the associated GIS data. SACE encourages BOEM to utilize this report and its associated data when developing North Carolina's current and future wind energy areas.

Recommendation No. 8: Incorporate Mitigation Efforts in Lease Agreements. If BOEM should issue a lease for site assessment activities off North Carolina, it should ensure that suggested mitigation techniques and technology from the Final EA are incorporated in the lease document itself.

Recommendation No. 9: Encourage operations that enhance data collection for future offshore wind energy facility siting. While this EA only covers site assessment activities, the intent of meteorological towers or buoy devices is to delineate the appropriateness for offshore wind farm development. As

such, any reasonable activities that may be undertaken with the site assessment technologies that may aide in the future planning and development of wind energy facilities ought to be encouraged and, if possible, BOEM should prioritize lease applicants that wish to conduct thorough assessments.

Recommendation No. 10: Develop reasonable estimates for cumulative site assessment activities. SACE recommends that BOEM develop standardized, reasonable estimates for site assessment activities, including number of data collection configurations for a certain area for cumulative effects estimates. BOEM should be able to glean data from enough projects in the United States and Europe to determine approximately how many data collection configurations are used on average for a certain amount of area that correlates with the number of farms developed. Using these figures, BOEM may be able to reasonably estimate the number of ships, emissions from construction, and other cumulative impacts with leasing the Wind Energy Areas off North Carolina's coast.

SACE appreciates the opportunity to comment on this NOI to prepare an EA for North Carolina. We strongly support offshore wind energy development, as well as BOEM's Smart from the Start initiative. We

look forward to commenting on the draft EA and are more than willing to provide any additional information BOEM may need in promoting and regulating offshore wind development.

Thank you.

WILL WASKES: Would anybody else like to make comments?

ETHAN CROUCH: Good evening. My name is Ethan Crouch. I'm a resident of New Hanover County and a board member for the Cape Fear chapter of the Surfrider Foundation. We are a nonprofit organization dedicated to the protection and enjoyment of our oceans, waves, and beaches. We have 82 chapters in the USA and over 250,000 members and volunteers worldwide.

And I would just like to take this opportunity to thank BOEM for giving us an ability to make comments, and I really appreciate your efforts that you've done so far. Your diligence and all of your reviews are very extensive. We just want to offer our support for wind energy. We think this is a viable alternative to offshore drilling for oil, gas, and oil production in the outer continental shelf.

So I look forward to further development of these projects here in the mid-Atlantic region. Thank you very much.

WILL WASKES: Any others in the audience that would like to make comments? Going once.

TRACY KELLOGG-BRODER: My name is Tracy Kellogg-Broder. And I just wanted to show my support and say that Wilmington is a wonderful community that can support people that can provide the jobs that you need. We have multiple schools, trade schools, communities, colleges, that can all quickly get a program going and quickly train a large amount of people to get the job done.

And like I heard another gentleman say that all the work has to be local, which we love that, and we love clean energy, especially local. So I think you guys coming could really invigorate our town, and I would just encourage you to help us do that. Thank you.

NANCY CROSS: Hi. Nancy Cross. Yes, definitely a proponent of good, clean alternative energy. I worked in the solar energy industry in Florida and in North Carolina. And looking at all the alternatives for energy in our state, I do think this is the best source available. If you look at fracking, if you look at coal, if you look at all the dirty energy, it's just not our future. It's just not a good resource. Solar is a good resource but in terms of,

you know, a lot of production, I think offshore wind is our source.

One question I had wanted to ask is, is there any possibility of using like tidal current for energy in conjunction with wind energy? I mean, I know the gulf stream is out there. I know there's a lot of power there. I know there are, you know, resources that have looked into that. I don't know if that's been looked into here. That's just something I wanted to put out there.

WILL WASKES: Okay. I will make a mental note and come back to that during the Q and A. But I want to make sure I get everyone's comments.

So does anyone else have any other comments they could like to make for us to capture on the record?

CAROLINA ALTUNYAY: Hi. I'm Carolina Altunyay, and I'm 13 years old. So I can't pretend to understand all the facts and statistics of energy production. But one thing that is blatantly obvious to me is that fossil fuels are killing our earth. I think it should be obvious to everyone else as well. I understand that introducing wind energy to NC would be difficult, but for the sake of my generation and the earth, I hope it happens. I support wind energy and I

would be very, very proud if my state chose to install offshore wind turbines. Thank you.

WILL WASKES: Anybody else? Don't be bashful.

JOHN WOJCIECHOWSKI: Hi. John Wojciechowski. I'm the lead instructor of the sustainability technologies program at Cape Fear Community College. I personally support this initiative and have seen all the effort that's gone into this over the past two or three years now that I've been following this. The diligence is absolutely appreciated and very, very impressive.

So I do want to add from a professional standpoint at my position at the college, that one thing that's very interesting to me about the exciting possibility of seeing this industry here is the job component and the educational component that might -- will have to go along with that.

I think that it's probably safe to say that this could be a great source of local jobs for Southeastern North Carolina. And I would like to see within reason as many of those jobs coming from this area as feasible; I know that's not possible for everything obviously.

But one thing that excites me about looking

around at the landscape of Southeastern North Carolina is that I've taken some mental assessment of what we have to offer this industry when it comes here, and I think it's quite impressive between the longstanding tradition of trades training and sort of -- that comes with the community college that will be here as well as the impressive marine- and water-based and environmental programs at UNCW. I think it forms the perfect base for a regional training approach to provide people that, when the time comes, will be ready to help support this industry.

Oh, that I would be remiss if I didn't mention the marine technology program at Cape Fear Community College too, as well as now the sustainability piece of the puzzle and our existing trades training and electricity, machining, and all the -- the wind turbine is such a complex piece of machinery that to consider working on that, you have to be someone who is trained in a multiple -- in a multiplicity of disciplines, and I think that we have a lot of those pieces in place already. So I just wanted to mention that.

That's something that I -- very exciting to foresee that possibility of when it happens. And I think that's part of the -- this part of the state will

be in a great place for that and we'll be ready when it comes. So thank you very much.

PAUL KELLY: Hi. My name is Paul Kelly and I'm here with my wife, Pat. And I wasn't going to make any comments but we're representing our group from our church, the Franciscan Care for Creation group. And I want to say that I haven't heard anyone speak of it, but I think there's an environmental justice issue that we have felt in our parish, and I know of a lot of other groups that we've connected with that feel very strongly that what you're doing, moving this form of energy forward is a form of environmental justice, and we are very supportive. Thank you.

WILL WASKES: Anyone else? I'm not seeing any hands. Going once. Going twice. Okay. We will close out the comment portion and go back to the question and answer.

So just my mental reminder, you had a question about hydrokinetics and what is our role in that?

JENNIFER GOLLODAY: I think the possibility of maybe a hybrid project; right. I think at least just from what I've seen -- well, I guess just generally, I think it's safe to say that marine hydrokinetics technologies and tidal ocean wave and

ocean current are a little bit further behind offshore wind technologies in terms of being commercially deployable. But I also think, from what I've seen, that the tidal developers are more interested in areas closer to shore. So probably more in what we call state water, areas that are three miles and up to the coast line.

I just looked this up because I want to make sure I got it right. But there is a tidal project proposed in the East River of New York that I think might produce up to one megawatt. I'm not entirely positive, but if there are tidal projects within state waters, three miles to shore, they would be regulated by the Federal Energy Regulatory Commission.

NANCY CROSS: (Inaudible.)

JENNIFER GOLLODAY: Can you repeat the question -- well, your name first.

NANCY CROSS: Well, the question was, I know that off South Florida in the Gulf Stream, there are studies of, you know, looking at harnessing that energy.

MAURNEEN BORNHOLDT: Can you repeat your name please for the court reporter?

NANCY CROSS: Yes. Nancy Cross.

JENNIFER GOLLODAY: So Florida Atlantic

University has applied for a 5-year interim policy, and we're currently undergoing an environmental assessment for that project. But that would involve the employment of test turbines in the Florida current to see how well they stand up to energy that can be produced.

BRIAN KREVOR: Yeah, that particular project I worked on. It would be three buoys, basically, which would be kind of test facilities out on the OCS off of -- roughly east of Fort Lauderdale, Florida. And so, I guess the developers would be able to take turbines that they would want to test and talk to FAU and work with them to hook the different underwater turbine types up to the buoys and then see how they actually work in the real world environment. It's one thing to do it in a laboratory, some are very good laboratories, but another thing to actually get it out there in the environment and work with it. We see it as a very important project moving forward to really test this technology. It's an important step along the way.

WILL WASKES: Any other? I think there.

MATT CULLIGAN: Matt Culligan. I'm really interested in the onshore footprint and also the underwater profile of these structures. Is that

something that BOEM regulates and makes recommendations on? Can you elaborate on that if there's, you know, some infrastructure that's better than another type, and those existing substations, will there be an environmental assessment on road traffic and other onshore impact?

MAURNEEN BORNHOLDT: When we get to that construction operation phase, when a developer comes in with their construction operation plant, we just don't look at what's happening out beyond 3 miles. We take a look at the project and its direct and indirect impact. So in the environmental impact statement, we'll analyze the onshore infrastructure. If new roads need to be built to support that, that will be a part of that environmental-impact scenario.

With regard to regulations associated with that, we can offer regulation and mitigation for those things that we do not have regulatory authority for; for example, if there needs to be an augmentation of a particular -- a widening of the road to support that, we can make that suggestion.

With regard to the regulation, you were talking about the sub C, the cable, we do have the ability to offer access on the outer continental shelf from 3 miles up to 200 for transmission right of ways.

Then we will work with the state or the Corps of Engineers, whoever had that permitting authority inside.

So again, the hope would be when we have a construction operation plan and that transmission line or a proposal is set, we can have a cooperating agency relationship with the state or the other feds. So one impact analysis is done and we can regulate and examine that as a whole instead of pieces. So we have opportunities to partner as well as we can regulate that access route that's on the outer continental shelf.

MATT CULLIGAN: Thank you.

WILL WASKES: Any other questions we can provide answers to? Okay.

I think then that will conclude today's public information meeting.

I guess, Mo, would you like to make any closing remarks?

MAURNEEN BORNHOLDT: I just say thank you so much. You know, it's funny, we come here and we give you our presentations, but I always learn so much from the questions that you all ask. And we will begin to do a more robust outreach in the area. And I think it's good to know that there are partners that can help

us with making sure we get to the right stakeholders and have these kind of dialogues. And I really appreciate you spending the evening with us tonight and helping us become better informed for this particular phase. Thank you so much. Please submit comments either via snail mail, hand delivery, or via the reg.gov, you know, on the NOI or on the Call for Information and Nomination. If you don't know which one, just get it to us and we'll make sure we sort it out. Thank you so much for coming by this evening.

JENNIFER GOLLODAY: I was just going to mention, real quick, if you weren't able to sign in but you want to leave your contact information to be notified about of future meetings like this, feel free to leave that as you leave.

(The public hearing was concluded at 8:03 p.m.)

CERTIFICATE OF NOTARY - COURT REPORTER

STATE OF NORTH CAROLINA)
)
COUNTY OF ONSLOW)

I, ANGELA CARITHERS, Certified Court Reporter, RPR, Notary Public, in and for the above county and state, do hereby certify that the Public Information Meeting: BOEM'S North Carolina Offshore Wind Planning Efforts, was taken before me at the time and place hereinbefore set forth; that foregoing statements were, which was duly recorded by me by means of Stenotype, which is reduced to written form under my direction, and supervision, and that this is, to the best of my knowledge and belief, a true and correct transcript.

I further certify that I am neither of counsel to either party or interested in the event of this case.

This 17th day of January, 2013.

Angela Carithers, RPR, Court Reporter,
Notary Public, Onslow County,
North Carolina
Notary Number: 201111800091