

Summary Notes

Southern New England Offshore Wind Energy Science Forum December 11 and 12, 2017, URI Graduate School of Oceanography

MAJOR QUESTIONS:

1. What have we **learned** from the Block Island Wind Farm research?
2. What relevant information do we know for the Southern New England region?
3. How do we **apply** what we have learned to future development?
4. Discuss/respond to **concerns/questions from stakeholders**.

Monday, December 11, 2017

Welcome and Setting the Stage

Moderator: Jennifer McCann, URI Coastal Resources Center/Rhode Island Sea Grant

Jennifer McCann opened the first day of the program by welcoming approximately 170 attendees and indicating the Block Island Wind Farm, the nation's first offshore windfarm, has generated significant interest – thus the event served an important purpose of allowing people to “hit the pause button and understand where we are coming from and what we have learned.” She said now that other windfarm projects are in the works up and down the Atlantic seaboard, the event is “Communicating research as comprehensively as possible so we can understand the process – what have we done well at, and what do we need to improve in.” She then introduced a panel of experts who shared their thoughts on wind farm development.

Jim Bennett, Chief of the Office of Renewable Energy Programs, Bureau of Ocean Energy Management (BOEM) said that ““I think we can all agree that the Outer Continental Shelf can play a significant role in supporting the Nation’s energy needs, especially here in the Northeast.”” Since 2013, BOEM has held seven competitive lease sales, which have generated over \$68 million in high bids for almost 1.4 million acres in federal waters. And these accomplishments are the result of the strong, productive partnership between government, states and industry, as well as other stakeholders. “The offshore industry is moving at a phenomenal pace and it is vital that we work with our state counterparts to build upon our recent success. I would like to thank Rhode Island, Massachusetts, and New York for their leadership and dedication.”

Grover Fugate, Executive Director, Rhode Island Coastal Resources Management Council said that over the decade since the Block Island project emerged, he has come to think of such efforts in terms of three “buckets:” “First, think about who and what uses an area. Then, ask how do you develop and construct the site, and how can you use science to minimize challenges? And third – think about what has actually happened, so we can apply the knowledge to future wind farms down the line.” That being said, indicated Fugate, it’s still

important to recognize that this field is in its infancy: “We don’t know all the answers yet, and there’s still a lot that needs to be done.”

Bill White, Senior Director, Offshore Wind Sector Development, Massachusetts Clean Energy Center, said Cape Wind, while an unsuccessful effort, provided significant learning opportunities and prepared his state for future success. “We are moving forward and we have a better, deeper understanding and appreciation,” for what it takes to implement a successful wind farm proposal. “Learning from the Block Island Wind Farm has been a great opportunity.”

Carol Grant, Commissioner, Rhode Island Office of Energy Resources said that with the Block Island Wind Farm, “excitement was palpable.” She said she was struck by the learning that took place in Rhode Island through the process, and she shared her “three pieces of wisdom”: 1. The process was based on fact; 2. Collaboration took place at all levels; and 3. There was great focus on decision-making and sorting out and balancing needs of all affected stakeholders.

Q and A: Questions focused on how Massachusetts has learned from the Cape Wind experience, and whether wind energy is still a key prospect in the Northeast. The panel commented that both successful and unsuccessful experiences are useful for others, and that wind will continue to function as a driving energy resource in the region.

The Block Island Wind Farm and Beyond: What have we learned?

Moderator, Jennifer McCann, CRC/Rhode Island Sea Grant

For this session, McCann introduced Jeffrey Grybowski, CEO, Deepwater Wind, and indicated he would be sharing his thoughts on the experience of introducing the nation’s first wind farm. Grybowski, noting all the Ocean SAMP meetings that took place at URI, said the conference was a “high school reunion for offshore energy geeks.” He said that Deepwater Wind had a small, quiet start in 2008, and that while other proposals were “mechanically engineered,” Deepwater’s was not – “because RI looked at it differently” through the Ocean SAMP process. “The result was a plan that the state went to the world with,” that basically said: Give us a farm that fits the community. He said there were talks that went on about pushing for lots of turbines, but that the community/state discussion had tempered that. Why was there success? “One, starting small can be smart – it helps with impacts; two, the state’s plan presented solution to real life problem,” adding that Block Island’s dependence on diesel was a real driver, “And three, becoming a partner with the community...muddling your way forward,” is important. He said it was these three things that drove the project down from eight to five turbines, and that the close collaboration with fishermen was beyond critical – it was “enlightened self-interest.”

He went on to talk about the future. “We as a society are in the middle of an energy revolution,” and that, regardless of where the country is in terms of coal and oil, wind and other clean forms of renewable energy are here to stay in a big way. “Increasingly wind, solar, and gas are the choices.” He finished by talking about the importance of the stakeholder process and sound science, how the issue of how to scale up is a public issue, and told everyone

to continue to be involved as much as possible in the existing and new projects: “Be engaged not just in science but in broader conversation.” Grybowski ended by thanking those who led the Ocean SAMP, “most of all Grover,” for their involvement.

Q & A: Questions focused on whether and to what extent renewable energy really will lower power prices for people. Discussion yielded that while it is going to take time to see overall change, the Block Island Wind Farm has lowered prices for people previously dependent on diesel. A charter boat fisherman and fishing journalist, Dave Monti, congratulated Grybowski on the effort.

What Drives the Science? A Discussion

The discussion focused on providing specific examples of how science, research topics and methods are determined and how results are used in regulatory, management and construction/siting decisions. The Moderator, Tyler Studds, Senior Manager, Offshore Wind Sector Development, Massachusetts Clean Energy Center, spoke about the need for a “deeper dive” into what is motivating the science and introduced the panelists.

Mary Boatman, Science Coordinator for the Office of Renewable Energy Programs, BOEM offered three points: 1) Science informs decisions and process and it’s important to hear from stakeholders early and often to identify the issues to address; 2) Working through partnerships between Federal and state governments and including stakeholders such as fishermen and industry is the best way to address concerns; and 3) We should use sound science to reduce uncertainty for our stakeholders.

Grover Fugate, Executive Director, CRMC, spoke about what are the impacts and how can we apply knowledge to our issues? He said that CRMC considers both the environment and the users when it’s reviewing projects, and integrates into the process the science, stakeholder concerns, and “what other users want to know.” He said science needs to be constant and ongoing if we are to understand the “Long term and cumulative impacts, for the region as a whole, especially.” Fugate also said the climate change is another “huge factor.”

Bruce Carlisle, Director, Massachusetts Office of Coastal Zone Management agreed with the prior panelists and said there are many complex issues and many kinds of users, in terms of ocean resources. He said the need is for “Better, smarter ocean planning/management in general,” as well as the “Best available science and stakeholder participation.” Carlisle said that his state looks to consultative bodies, good planning, technical working groups, and tapping experts as key ways to ensure ocean management moves forward properly.

Aileen Kenney, Vice President of Permitting and Environmental Affairs, Deepwater Wind, said that the company thinks hard about “what science do we need to do at all stages” of proposals or projects. She said that working with stakeholders is important at all stages of a project, as is a “Thoughtful and methodical approach.” Her “rules of thumb” are collaborative science, building and leveraging science on other protocols, and meet regional science goals. “We try to look at things holistically,” she said, “We try to take opportunities when they arise,” and

piggyback or link science studies to get more thorough and cost-effective results. She said that more regional collaboration going forward is important, as more renewable energy proposals and projects for offshore wind farms emerge: “What do we all want to invest in? What is the priority for the science?”

Discussion and Q & A: Group talk focused on the different ways that states could work with federal and private partners to really scale up the science so it makes sense on a regional level, but still answers the specific needs of a particular state or project. This is hard, both panelists and audience members indicated, because it’s difficult enough just to focus resources – both financial and stakeholder input – for a single project – how are such resources to be leveraged appropriately so they can answer regional issues in a meaningful manner? Both panelists and audience members said that it could, likely, be worthwhile for states to at least share information about science studies so that, for instance, bird research could be linked or coordinated as appropriate. Fugate pointed out though to keep in mind that complications often arise because federal concerns aren’t always well matched up with state concerns, so collaboration between the entities often takes more coordination and overt effort.

Stakeholder Observations

For this talk, panelists shared observations on existing wind farm planning and development efforts; specifically, focuses were birds, marine mammals, fish and fisheries, how the process worked or didn’t, issues of concern, and recommendations for improvement. Moderator: Dave Prescott, South County Coastkeeper, Save the Bay, introduced the panelists.

Cash Shuman, Staff Reporter and Web Editor, The Block Island Times, said that he was amazed at the breadth of learning that took place as the wind farm project was introduced on the island. People’s conceptions of “windmills” were greatly changed, he said – including his own. There was much debate, he said, among people on the island about how the turbines would impact island life, and today it’s a “whole other world,” in terms of how far the thinking has gone on the island. While not everyone agrees about key issues, such as view shed impact, there is no doubt in his mind, as a reporter, that a “Lot of learning” took place. He noted in particular that the silence on certain parts of the island, once diesel generators were turned off, was startling, and that it was something to hear “birds chirping, for example.” He said that while there are still concerns on the island relating to the wind farm, it is also fair to say that people’s education about the project has progressed significantly and that Deepwater Wind “was good working with community.”

Scott Comings, Associate State Director in Rhode Island for The Nature Conservancy said he lives on Block Island and that his organization has been involved with the bird research for the project since the beginning. He said the scientific work is “solid” and that “There’s a real local benefit here,” and that climate change is still our biggest threat. “This is one small step” he said, toward “Showing the way how to move forward.” For his own life, he said, “it’s like National Geographic out there – a really spectacular place that is benefiting from these structures.”

Catherine Bowes, Senior Manager, of the National Wildlife Federation also said that climate change is our biggest threat. She said her organization is “Firmly committed to seeing rapid acceleration of renewable energy,” and that it has to be done responsibly. She said there has been “Incredible leadership” in Rhode Island and that there has been a good process between science and stakeholder input. “Robust data and stakeholder input are the keys,” she said.

Chris Brown, Commercial Fisherman representative, said that while he was initially very worried over how this project would impact his life, his livelihood and his industry, he has come to a point where he “Can’t speak highly enough” of SAMP process.” He detailed the terrible worry of fishermen over the issue in the beginning - “We fight like Spartans” if need be – but that over time, due to the transparent and good faith effort of the process and the state – he too thanked both Fugate and Deepwater Wind for their efforts – the fishermen were able to actively participate in determining how the project could impact fishermen less. He warned other developers to not cut corners and force future windfarm projects down the throats of people of the place, including fishermen: “Do not cheapen the process,” he said, “You will not get where you want to be. You’ve got to do it like Rhode Island did it.” He also encouraged fishermen to make every effort to get involved with these processes to ensure their voices are heard. It’s a great deal of work, he said, to be totally engaged in the stakeholder and decision making process, but fishermen must be involved, he said, even if it means a loss of work days.

Q & A: Discussion focused a great deal on how to ensure that stakeholder voices, such as fishermen’s are heard in regionally important wind farm proposal debates, when it’s so difficult already to save time and effort for locally important talks. People asked whether it may be smart to form a larger regional fisheries group – an offshoot of the Ocean SAMP based Fisherman’s Advisory Board – or whether a partnership effort should be made across public and private lines to pay for the creation of specific jobs focused on regional information sharing and vetting. While no specific answer to the question was determined, people said that this particular question should continue to be examined, and that this group gathered at the conference is the right group to continue the talk and make sure it isn’t left aside.

Marine Mammals

For this panel, the panelists responded to the stakeholder observations made in the previous sessions as well as to research and regulatory results concerning the Block Island Wind Farm and activity taking place to understand Southern New England offshore waters. The Moderator, Amy Moses, Vice President and Director of Conservation Law Foundation Rhode Island, acknowledged the work of her colleague, Tricia Jedele, on the Ocean SAMP and Block Island effort, and introduced the panelists. The panelists generally said that data currently indicate that the turbines are not causing harm to animals.

Rick Usher, Operations Manager, and Lauren Wahl, Project Manager, A.I.S. Observers, Inc. – shared the work the company is doing with equipment placed on the turbines to gather information and data about animals, such as whales, that may be using or near the area occupied by the turbines. They explained the high-definition and thermal imaging cameras and related equipment being used to collect information, and said that it was very important to

have good communications with the developer, such as Deepwater Wind, to have as effective and efficient a science gathering plan as possible.

Scott Kraus, Vice President and Senior Adviser, Anderson Cabot Center for Ocean Life at the New England Aquarium, Chief Scientist, Marine Mammals, said he has been surveying since 2011 – sights/sounds of fin whales, humpbacks, minke, and rights – and thinks that climate may be shifting the way these whales live/travel. He said they are very adaptive to food sources. He said that gathering data about these animals is important at all stages of the project, from pre- to during construction to post-construction.

Jim Miller, Professor, and Gopu Potty, Associate Research Professor, URI Ocean Engineering, said that the research they are conducting indicates that, with the exception of construction, the turbine project doesn't produce noise that would be significant – they said that regular operation of turbines produces noise at levels lower than actual sounds emitted by whales themselves.

Julie Crocker, Acting Assistant Regional Administrator for Protected Resources, Greater Atlantic Region, National Oceanic and Atmospheric Administration (NOAA) Fisheries, joined the conversation via conference phone, and explained the federal Endangered Species Act and Marine Mammal Protection Act.

Q & A: During the discussion period, talk focused on what the results of the animal research shows. The scientists/panelists explained that while they can't say for certain how, and to what extent, animals such as whales and fish and lobsters are impacted by the turbines, their data is showing that animals are functioning in the environment and that noise, for instance, is not significant from the turbines. Studies are continuing and should, the scientists said, be coordinated with other efforts in the region, if possible and appropriate.

Fish Science

Moderator Kathryn Ford, Fisheries Habitat Program Manager, Massachusetts Division of Marine Fisheries, introduced the panel which focused on responding, similar to the marine mammal panel, to stakeholder observations and discussing the research and regulatory results to date. As the marine mammal panel indicated, the fish panel said that largely, while it's clear that some animals, like lobsters, do respond to the electric currents of underwater cables for the turbines, no study has shown that fish are impacted to a level of harm by any turbine activity or operation. More study over years, they said, will be needed to get a fuller picture of how different kinds of fish and other animals respond to the turbines. Right now, fish seem mostly to function as useful, and some seem to aggregate more around the turbines which have underwater characteristics to artificial reefs and attract fish.

Drew Carey, Principal Scientist/Managing Partner, Inspire Environmental agreed with Chris Brown that the Block Island Wind Farm cannot be a simple blueprint for all wind farms, but it does have useful information for future projects to consider. He described the demersal trawl survey work that he has carried out, which is continuing, and said that "the composition of the

(fish) community stayed same year to year – no consistent differences in area of question.” Overall, he said, the lessons learned are that the concerns of the fisher community have to be heard within the process, as with the Rhode Island experience, and that regional data is needed.

Julia Livermore, Principal Marine Biologist, Rhode Island Department of Environmental Management, reviewed the regulatory process for the Block Island Wind Farm and said that it was highly important that there was trust established between Deepwater Wind and DEM. Today, she said, DEM is continuing to be involved in the Block Island Wind Farm science project, and is also working to look at new projects because it’s important that efforts are being made to avoid “fish hotspots.” She said that “BOEM already removed some of the blocks,” in terms of future projects, and that “information will be made available to public and developers for planning.”

Jeremy Collie, Professor, URI Graduate School of Oceanography, said that he carried out two studies that build on the data of past years; one focused on collecting data related to linking fish to their geographic areas by food, or linking fish to their habitats. The other study focused on understanding more about how development impacts an already stressed species. Collie said that studies indicate that offshore water is important for keeping lobsters at their proper temperatures.

Kevin Stokesbury, Professor of Fisheries Oceanography, University of Massachusetts, Dartmouth, reviewed new technology proving useful for understanding fish and their habitats. He explained several tools as examples and said that going forward, such tools could be useful in regional studies to gather more fish science.

John King, Professor, URI Graduate School of Oceanography, reviewed a project focused on studying the impact of power cables on fish and lobster. The results seem to indicate that animals like fish and lobster probably aren’t greatly impacted by the power from the cables. He also said that lobsters seemed to more or less avoid the cables, while some animals, skates, for instance, were more drawn. It would be reasonable, said King, to think that multiple cables for larger projects could probably have more effect than a single cable for a small project.

Q & A: Discussion after the panel focused on exploring how these science efforts can be best managed, shared and coordinated so that going forward, information and results can inform, as appropriate, ongoing efforts to weigh proposals for wind farms in the region. The scientists agreed that all of these efforts represent beginnings of a much larger and longer term effort to understand how fish and other animals react with, and to, human development in their ocean midst. The information about fish in the water surrounding the Block Island Wind Farm is a useful start, they said, but much more needs to be done – and, one cannot assume that what happens at one site will be the same for other sites in the region. Thus, information can be considered, but it does not take the place of studies that will have to occur for all potential wind farm projects.

Fisheries

For this panel, panelists responded to the stakeholder observations as other panels did, and provided their own perspectives of the Block Island Wind Farm process. Moderator Dave Beutel, Aquaculture and Fisheries Coordinator, CRMC, introduced the panel and said “it’s ok if we don’t always agree, but we have to work together. Lots of science, lots of science still needed.”

Rick Bellavance, President, Rhode Island Party and Charter Boat Association, described how in his roles, as both a charter boat captain and fisherman, the wind farm represented both opportunity and a reminder of the importance of keeping lines of communication and trust open between people whose livings depend on the ocean and the regulators and the company running the wind farm. He said he believes that the Block Island project enabled this kind of trust to build, and that he has been able to market the farm as a destination point to his customers. However, he said, the Rhode Island experience may not necessarily dictate how other places carry out processes, and that could be more problematic. “Every project is different,” he said.

Lanny Dellinger, Fishermen’s Advisory Board, CRMC, commented that, similar to thoughts shared by Chris Brown, the level of trust between fishermen and the companies and regulators must, going forward, be the same as with the Rhode Island effort, or else other places will find their projects won’t work. “There is a lot to be learned from Rhode Island. Fishermen can learn a lot, and developers can learn a lot from what we did here,” he said. Dellinger also said that he is troubled by the fact that BOEM provided leases in the region prior to the science being conducted, and that this could be a significant problem. “BOEM gave the leases out already, so now the developers (in the region) are going to need to work with the industry as soon as possible to figure this out,” he said

Elizabeth Marchetti, Fisheries Liaison, Block Island Wind Farm, said that transparency was the goal of her job and that she would highly recommend other places doing what Rhode Island did – have the regulator, in Rhode Island’s case CRMC, manage this liaison position so fishermen and other industry members know they have immediate link to clear and open information about wind farm projects. She said this type of communication is critical to having key stakeholders, like fishermen, on board for projects.

Sue Tuxbury, Fishery Biologist, NOAA Fisheries said that the Ocean SAMP, which was in state waters, “went really well,” and “helped with the Block Island project.” She said offshore areas are more challenging, and she has concerns about how the larger regional efforts are going to be coordinated, from a collaborative viewpoint. “We need to keep cumulative impacts in mind if we are going to be doing this from Maine to Virginia,” she said. “Fisheries management needs to be included in this cumulative effort.”

Edward LeBlanc, Chief of the Waterways Management Division for Coast Guard Sector Southeastern New England, described his role in determining safety/risk for navigation for windfarm proposals in Rhode Island and Massachusetts. Balanced use of the ocean is the goal,

he said, and uses that include vessels, fishing, and aquaculture are among those considered. He also described how mitigation measures can be required of a project to balance risk. He said that boats are not required to stay away from wind farm projects through exclusionary zones, and that the Block Island Wind Farm has not had problems with navigation issues.

Q & A: Discussion focused on the depth of communication that would be required on a regional level, should a number of wind farm projects be up for consideration and stakeholder involvement would be needed. The audience and the panelists agreed that the level of work was very high, through the Ocean SAMP, for stakeholder involvement in the planning of the Block Island Wind Farm, and there is significant shared concern among regulators, stakeholders and scientists about how such deep and meaningful interaction can be scaled up from the state level up to the regional level and beyond. Coordination and collaboration cannot be left out of the regional process, people said, but answers are not clear now about how such activity can be carried out for larger regional efforts considering the placement of wind farms in offshore waters. Developers can go a great distance, people said, by stepping up to the plate early in the consideration process and demonstrating a good faith effort to do what Deepwater Wind did and engage early and often with government, stakeholders and scientists.

Tuesday, December 12

Welcome and Thoughts from Yesterday: Jennifer McCann opened the day with thoughts about the previous day's discussions. She said that the increased activity with region-wide proposals for wind farms is the "new reality whether we like it or not," and that people seemed to be in great agreement that the Rhode Island process had worked. She said the Ocean SAMP worked for several key reasons: 1) It concerned a small wind farm pilot project rather than a big farm; 2) the Ocean SAMP pre-permit process had built the science and trust necessary for going forward; 3) We are committed to science which is ongoing about the significant questions we have about how turbines impact us and the ocean; and 4) There are no buffer zones keeping fishermen from the turbine area. She said good ideas came up the day before: 1) Shared cable corridors for wind farms; and 2) Cumulative impacts must be a goal if we are to take the baseline data available from ongoing science and build it, as appropriate, into meaningful information that can inform the introduction of wind farms to the entire Eastern seaboard. "We will need to know in the future if something happens whether or not it was actually a wind farm that caused a problem, or was it something else," she said. McCann went on to say that discussion from the day before indicated that people clearly want balance, and recognize that resources must be shared and different uses need to be considered to ensure the best balance of economic, environmental and social assets. "We know in our gut we want a thriving commercial fishery and recreational fishery – it's part of our culture and who we are; we want seafood, we want renewable energy and renewable food – so how do we balance all these?" she said. Finally, she said, it was also clear from the day before that people want the information sharing and planning process taking place at the conference to continue – both for Rhode Island's good as well as for other places, as what happens regionally impacts us as well.

Habitat

For this panel, the panelists responded to the stakeholder observations of the previous day as well as the research and regulatory results regarding habitat. Moderator Chris McGuire of The Nature Conservancy introduced the panelists and said that the work represented in the presentations touches on many of the issues he encounters with his fisheries work.

Drew Carey, of Inspire Environmental, provided information on geological research he and his team have conducted on the hard bottom habitat in the wind farm area. He said that the key point to take away in thinking about how to move the work forward is that it is often well worth it to take the time to plan strategically. For example, spending the time and effort on a rapid assessment can be a cost-effective means of making sure a wind farm project gets the right data to inform the correct design. "Be smart about leveraging money and projects...Integrate studies and data and go regional if possible," he said.

Monique LaFrance Bartley, URI Graduate School of Oceanography, said that the ongoing studies that URI has been carrying out show "some changes," on the bottom due to the introduction of the turbines, but "not much, not in any ecologically meaningful way." She said the studies have formed a useful baseline and that the "next iteration is underway."

Kevin Stokesbury, of the University of Massachusetts, Dartmouth, provided information about tools that he has used in studies, and made the point, as did other panelists that "it's easier, and more important than ever before, for efforts to work together – to leverage data and information."

Sue Tuxbury, of NOAA/NMFS said that the Rhode Island work has provided an example of research which could help inform regional studies. "Coordination, the effort to avoid sensitive habitat, establishing monitoring – we want to apply the Block Island lessons, while still looking to consider cumulative impact and scale," she said.

Q and A: Discussion after the panel focused on the issue of changing habitat and understanding what that means, and on the issue of the huge scale of multiple turbine projects and the need to coordinate and understand approaches and impacts. The group talked about how to approach the design of data collection to really get a handle on larger scale but site-specific data. The group asked the overall question of: "How can this group help move the collaborative regional effort forward?"

Birds and Bats

This panel was introduced by Jack Clarke, Mass Audubon, and the scientists that provided presentations made the general point that useful baseline data has been gathered regarding the impact of the Block Island Wind Farm on birds, and that the initial information indicates that birds generally are not affected by the structures. Some information has been gathered about bats, but the presentations focused on birds.

Peter Paton, researcher, URI College of Environment and Life Sciences, presented information both from his studies, and for Dick Veit, a researcher of the College of Staten Island who was unable to attend. Paton described how studies have collected a solid baseline of data and talked about how birds, whether migrating or staying in the area, “tend to avoid the wind farm.”

Bob Roy, of Stantec, Inc. described how the technology being used to track and understand animals like birds and bats, in terms of wind farm impacts, keeps progressing rapidly, and that it’s important to ensure good communication between the wind farm developer because it’s critical that research instrumentation be properly maintained and operated on the turbines. “You have to think pre, during, and post construction what it is you want to learn and do,” he said.

Q & A: During discussion, the group talked with the scientists about the larger implications of wind farms being built up and down the seaboard, in terms of what this would mean for animals like birds and bats. While these animals do not seem to be hindered greatly by the one pilot project farm with five turbines, the picture could change if many more farms with many more turbines are constructed. Clearly, the scientists said, many bird species use the Eastern coast, whether they stay in one spot, or whether they migrate, so the idea of having the entire coastline occupied with turbines is a completely different scenario to consider. They said that the baseline data is going to be more important than ever in terms of contributing meaningful input to regional and Atlantic discussions concerning how to balance environmental and economic needs and resources.

Social observations

Tiffany Smythe, of URI CRC, introduced the panel which focused on how Block Island residents, recreational interests, and the tourism community have come to process the introduction of the wind farm to their island life. Panelists offered perspective on how the process worked or didn’t, shared issues of concern, and provided recommendations for improvement.

Jessica Willi, of the Block Island Tourism Council, is a resident of the island as well. She said that from a purely tourism perspective, the turbines likely represent opportunity, rather than a hindrance, as visitors to the island are intrigued with the structures. That being said, Willi commented that from a residential standpoint, the wind farm represented a great source of anxiety for the islanders. While there is less anxiety today than when the project initially came to light, people are still concerned about what it means to have the turbines in the view shed, to have this significant infrastructure right off the coast. She also said that while some people definitely felt they had been engaged in the process and had lots of opportunities to participate, she said she did not feel that she herself had been made aware of many opportunities to engage with the government and developer. She said that she knows the turbines may be providing an answer in part to the island’s energy issues, and that more discussion and study is needed to see what the lasting impact is on the people who live on Block Island year-round. “This definitely affects residents more than tourists,” she said, “but tourism needs to be a part of the conversation.”

Chris Willi, a fisherman/bait and tackle/charter boat proprietor and Jessica's husband, said that he was a proponent of the wind farm from the beginning because of the positive impact it could have on residents' energy costs. He also said he notices tourists like the turbines, in general, and they want to go out and see them. He said that in general, he feels like the communication process worked for this project, although he was "disappointed" that not everyone on the island made use of the engagement opportunities provided to them. He is concerned now, he said, that the issue of internet provision has not been figured out with National Grid and the government, and advised other places now undergoing talks with developers and government to make sure aspects that are important to host communities – like internet provision, for example – are kept high up in the conversation. "Communities can learn from what we have done on Block Island."

Judy Grey, a year-round Block Island resident since 2011 (she is a meteorologist now retired from NOAA) said that she felt very engaged in the public process and that she even received numerous surveys when she was still working and not living on the island full-time. She said that the wind farm has lowered the cost of power on the island, and that the electricity is constant now, and the island is quieter in places because diesel generators have been shut off. She said she knows some people continue to be against the wind farm because they don't like the look of the turbines or the impact the lights from the turbines have on the night sky, but that in general, most people now are more or less getting decently comfortable with the fact that the wind farm is there.

Dave Monti, of No Fluke Charter Fishing and Tours, and a fishing topics journalist, said that he believes the wind farm is a major draw for tourists and customers and that the turbines add to the recreational fishing experience. There is "great curiosity" to get as close as they can to them, he said

Q & A: After the panelists shared their perspectives, the group talked about what the Block Island experience, both for residents and tourists, can bring to the larger conversations now going on regionally about the potential advent of wind farms up and down the coast. Tourism opportunities seem likely to expand with the introduction of wind farms to the ocean, but people who are going to live near them – even if the structures are reasonably offshore – must be prepared to engage in the public process as soon as possible so residential or host community concerns are clear and addressed appropriately. The panelists advised all stakeholders, be they residents or fishermen or other tourist interests, to organize as early and strategically as possible – an activity that could be more difficult on the larger, regional scale than on the local scale. Again, people advised that stakeholder groups devise smart ways of inserting themselves in the regional conversation, while still staying cognizant of activity at the local level.

Tribal

For this panel, Moderator Teresa Crean, of URI CRC, introduced the panelists who described the studies that have taken place to gather information about the ancient Tribal past as reflected in the ocean floor in the area of the Block Island Wind Farm. Discussion also focused on how government and developers can work with Native American tribes to undertake research projects that produce data important for wind farm decisions while respecting the needs and goals of tribal peoples.

Bettina Washington, of the Wampanoag Tribe of Gay Head (Aquinnah), explained the history of her tribe and indicated that the land on the sea floor, in the areas proposed for some wind farms, are important to her people because thousands of years ago, according to tribal history, they lived there before an influx of water made it necessary to relocate further inland. She said it would be sacrilege for these submerged lands to be disturbed, and that she and her tribe are working both separately and together, as appropriate, to collaborate with researchers, the government and the private sector so science can take place to identify, understand and protect these areas of tribal significance. She said “we all need to work together,” and asked the group to understand that her tribe, as well as other tribes, have no intent to ever stop a process, but they need to make sure that the past is preserved as their culture requires. “It is so important for us that we have found a way to work on science, with scientists, so we can merge these two,” she said. “I and my people are responsible for our cultural concerns and our ancestors and our ancestors’ land.”

David Robinson, an archeologist of the URI School of Oceanography, opened his presentation with a Statement of Acknowledgement to show his “spirit of respect” for his work with ancient tribal environments dating back to more than 12,000 years ago. He explained how his work with the team is helping shape standardized protocols, and, ultimately, a management strategy for ancient tribal cultural sites on the continental shelf. “We need to be better able at identify submerged paleocultural landscapes.” He said that the work he and the team have undertaken has benefited greatly from tribal integration throughout the project, and that great value for both the science and the tribe itself has emerged from training tribe members in science methods and to work on the exploration.

John King, researcher, URI Graduate School of Oceanography, said that the tribes serve as an equally important stakeholder group on these projects, and that the “Capacity building and trust” is as critical here as with the fishing community. He also said that the federal Bureau of Ocean Energy Management (BOEM) has proved a valuable partner on the effort to understand and examine submerged paleocultural environments, but that the agency ideally needs additional resources in order to support tribe’s interaction with projects. He agreed with Robinson that bringing tribe members into the science work proved very successful and that this should be a model for future archeological work in this area.

Q and A: Discussion after the panel focused on exploring how additional resources could be brought to bear so that stakeholders in this type of work, from tribes to fishermen, can continue on a scaled up level, from local to regional, to interact in the decision-making process

for wind farm introduction on the East Coast. Washington said that her tribe already plans to interact with other tribes, as they do already, to ensure that fuller coverage from this stakeholder group can be part of the process.

Community Impacts

For this panel, researchers shared data and information concerning human reaction to the Block Island Wind Farm, and described how this information could help with decision-making for other potential wind farms. Moderator Tracey Dalton, researcher, URI College of Environment and Life Sciences, introduced the panelists. She also said that the work of a social scientist is to study people, how they think, and how they interact with an area and its policies. She says her work is related to this effort and has involved the collection of data through interviews with recreational fishermen and boaters, and that the results of this work will also inform this process.

Amelia Moore, researcher, URI College of Environment and Life Sciences, shared the information she has gathered thus far from Block Island concerning people's reactions to the wind farm, and that data indicates that from a social science perspective, the turbines have become "tourism items in and of themselves." Knowing this is critical as a starting point for the island to move forward planning whether and how it will incorporate the wind farm overtly into tourism efforts.

David Bidwell, researcher, URI College of Environment and Life Sciences, described how he is researching how people's values and beliefs guide them to make choices about whether or not they support wind farms, and that these values and beliefs "matter greatly." He said that it's important for decision making processes to be aware of this science, because people's values and beliefs are strong indicators for how they will come down either for or against a project like a windfarm.

Gordon Perkins, of HDR, a consulting firm, shared information concerning the "sense of place" simulations that his company provides so decision-making processes can have a visual component that helps people understand what structures such as a wind farm will do to viewsheds. After a certain distance, people don't register or see offshore wind farms, so being further out at sea is a help visually with these projects, he indicated.

Q & A: After the panel, the group talked further about the role that perception plays in people's personal decision-making processes and how social science can continue to play a valuable role in helping other places along the East Coast understand how stakeholders may respond to wind farm proposals.

Engineering, Construction, Operations and Maintenance: Lessons Learned

This panel focused on describing the complex process involving the coordination of wind farm construction and operation activities with monitoring and oversight – all complicated further by the added elements of the ocean environment and weather conditions. Moderator Nils Bolgen, of the Massachusetts Clean Energy Center, introduced the panel.

Chris van Beek, President, Deepwater Wind, provided an overview of the activities involved in building the wind farm and its components and shared information about the rigorous standards that wind farm must meet in order to be approved for use in the demanding ocean environment. He said that the turbines of the Block Island Wind Farm have a design life of 25 years, and that it has taken partnership with government and the community to make the process work.

Rain Byars, of ABS Consulting, described the independent review process that the construction and operation activities underwent to ensure safety and protect investment value of the wind farm. She explained how Deepwater hired the company, and the firm reports to CRMC on the audits. “We are looking at lots of factors to ensure the design works,” she said. “she shared information about the sophisticated software and modeling programs the company uses as part of the process to constantly test and validate the turbine activities and components.

John O’Keefe, a Captain for Deepwater Wind, presented the complex and exciting process that took place for the company and Rhode Island residents alike as the brief period of farm-- of farm construction took place. The pieces of the turbines were taken from port sites out to sea, and many people participated in viewing the travel of the barges. The construction and operation of the windfarms is a carefully managed business, said O’Keefe, as great care must be made to be aware of weather and environmental conditions. To date, the farm is performing well and without incident.

Q & A: After the panel, the group discussed further the complexities of the construction and operation process, including how the United States is now seeing the building of some jack-up barges so wind farm projects here on in will not necessarily have to employ barges from Europe.

Wrap up

Jennifer McCann engaged the audience in discussion about how this process can best continue to serve both Rhode Island and other places regionally, as dialogue moves forward to introduce wind farms along the Atlantic seaboard. She and others who experienced the Ocean SAMP process said that great value, relationships and trust had been built, and that it was rewarding to see at the conference everyone come together again. Many people indicated that this process is a good venue to inform the regional discussion, and McCann said that she and other conference conveners would work together to explore this more. She said the notes will be shared with the entire group, as well as the presentations and other materials.