

**Preparing for Offshore Renewable Energy in Rhode Island and Beyond**  
**June 6, 2019, 8:30 a.m. – 5:30 p.m.**  
**University of Rhode Island, Narragansett Bay Campus**  
**Summary Notes**

**Purpose: Identify how URI can contribute to the appropriate growth of offshore renewable energy and enhance our marine industry.**

- Identify information needs, technology questions and workforce gaps created by offshore renewable energy growth.
- Showcase URI's existing offshore renewable energy expertise.
- Learn how European academic institutions have contributed to offshore renewable energy.

Welcome and Purpose of the Day: Jennifer McCann, Director of U.S. Coastal Programs/URI Coastal Resources Center and Extension Leader/Rhode Island Sea Grant, moderated the program and welcomed the approximate 90 attendees to the all-day event. She described how the arena for developing facilities for offshore renewable energy (ORE) is rapidly growing and changing on the East Coast, and she said Rhode Island, which has already performed as a leader in this via the Rhode Island Ocean Special Area Management Plan (Ocean SAMP), has yet again an opportunity to contribute to, and shape, critical science and policy dialogues about in-demand ocean resources. "This is your event," she said. "This is your opportunity to weigh in on what we collectively need to do in this area, and how you think URI can help with this." URI Graduate School of Oceanography (GSO) Dean Bruce Corliss described the assets, such as the research vessel, that GSO brings to the conversation, and said that the school and the University is ready, as it was with the Ocean SAMP, which provided for the development of the Block Island Wind Farm, the country's first such facility, to play a role in larger ORE issues. Extended notes for each session are available upon request.

URI's Role and Value – Testimonials: *Description: Panelists share their relationship with URI and recommend how URI should contribute to the appropriate growth of offshore renewable energy.* The session was moderated by David Bidwell, Assistant Professor/ URI Department of Marine Affairs, who introduced the panelists as stakeholders already familiar with URI's contributions to the ORE sphere. Most of the panelists' engagement with URI stemmed from the Ocean SAMP process from 2007 – 2011; their perspectives illustrated URI's role as a "neutral broker" and balanced facilitator capable of managing difficult and contentious coastal and ocean resources issues. For example, from the private sector, Aileen Kenney, Head of Development and Permitting for Ørsted (formerly Deepwater Wind, the firm at built the Block Island Wind Farm), said that initial uncertainty about the process was replaced by "clarity of information and a steadily built trust" among stakeholders, and that she firmly believes that URI played, and

should continue to play, a central and productive role in the ORE dialogue active on the Eastern seaboard. Similarly, public sector panelists indicated that much of the value that URI brought to the SAMP process speaks to ability to play numerous and varied roles – group facilitator, research entity, and public educator. “We had over 200 people, all from URI, working on this,” said Grover Fugate, Executive Director of the Rhode Island Coastal Resources Management Council, the State agency tasked with SAMP development and administration. Mary Boatman, Environmental Studies Chief of the Office of Renewable Energy Program/U.S. Bureau of Ocean Management (BOEM), noted that URI’s role in the SAMP prepared it for the research work it would then undertake for BOEM, creating science-informed guidance about wind farm issues that the federal government could then provide effectively and efficiently to coastal communities countrywide. It is URI’s ability to both answer science and public needs relatively quickly that makes it a logical convener for the current ORE discussions, indicated Ed LeBlanc, Chief of Waterways Management Divisions/U.S. Coast Guard, adding that he would particularly like to see the school assist with examination of the impacts of wind farms on the use of radar systems, which vessel navigators such as fishermen depend upon for safe ocean travel. Curt Spaulding, Professor of the Practice of Environment and Society/Brown University, provided academic perspective – he said URI, as the State’s flagship school, is especially well positioned to provide education initiatives that directly serve the public good. He also noted, however, that he has worked in other jobs, within the public and advocacy spheres, that gave him significant experience with URI, including with CRC and Sea Grant. “I have seen directly, firsthand, how optimal these groups are working on difficult issues, **such** as the ones we’re talking about today, and they are ideal for addressing them.” At the end of the session, the audience provided input. Ken Payne, a longtime Rhode Island policy scholar who moderated the Ocean SAMP stakeholder process, asked all participants to remember that it is “absolutely critical that the public” be front and center in everyone’s concerns about ORE issues, and that the process will suffer if piecemeal interests, be they from the private sector, academic sector, or any other sector or area, take precedent over the larger public good.

URI’s Investment and Commitment: *Description: Panelists present URI’s existing and potential engagement in offshore renewable energy issues and opportunities.* J.P. Walsh, Director/URI Coastal Resources Center moderated this session about the URI based research currently underway that is informing ORE dialogue, and potential opportunities to expand upon these efforts (Information will be provided to view the event presentations). URI researchers – Reza Hashemi/Ocean Engineering, John King/GSO, David Bidwell/Marine Affairs, Kate Venturini/Mallon Center, and Peter Paton/Natural Resources Science – described how their projects and programs are informing or updating Ocean SAMP regulations, contributing to larger U.S. or international understanding of ORE issues, and engaging students as the next generation of ORE academia, practitioners, and decision-makers. While progress, driven by the Ocean SAMP, has been made on these fronts – Hashemi, for instance, described the several

robust ocean engineering projects and programs that focus on Rhode Island's ORE experience -- the researchers indicated that a new effort needs to develop and take place, with concrete funding focused on specific ORE questions stemming from the expected proliferation of wind farms on U.S. coasts, in order for real, practical, science-informed discussion to take place and solve pressing problems. For example, King, an oceanographer who has studied how lobsters react to the electromagnetic charge given off by the underwater cable connecting the Block Island Wind Farm to the mainland, said that one issue he thinks needs further study is the impact that "The Hammer," the world's largest pile driver, now in use in Europe, likely to be used to during future U.S. wind farm constructions, is having on ocean life, including commercial fisheries stocks. "We need to be doing this now, if we want to know what to expect if it comes over here," King said. Most of the questions for the team focused on how the U.S. -- the New England region, as of now -- can start understanding how fisheries could be impacted by the extensive building of large wind farms in federal offshore waters, and what the potential could be for offshore renewables and fisheries to co-exist. "We need more data; and for more data, we need more dedicated research projects -- that's the reality," said Bidwell. Following this discussion, there was also interest in understanding more about how URI can hone its ability to prepare students for a wide variety of jobs in renewable energy; Venturini said that the Energy Fellows Program is increasingly sought out by students who want hands-on experience with this work, and that she expects the program to grow significantly as the renewables field expands. Powerpoints from this session can be found here:

[https://www.crc.uri.edu/projects\\_page/offshore-renewable-energy/](https://www.crc.uri.edu/projects_page/offshore-renewable-energy/)

The European Experience: *Description: Panelist presents how European academic and research institutions have sustainably engaged in responding to offshore renewable energy issues and needs.* Jennifer McCann, URI CRC/Sea Grant, introduced Andrew Gill, Principal Scientist, Centre for Environment, Fisheries and Aquaculture Science (Cefas), who has researched and worked within Europe's ORE arena for more than a decade. He shared with the audience how certain academic hubs in the United Kingdom -- the University of Hull, for instance -- have overtly leveraged ORE expertise, invested in enhancing staff and resources focused on it, and are specifically providing studies and training to students can seamlessly enter the European ORE workforce, or "pipeline." Gill said he has found many similarities between the Hull model and burgeoning opportunities for URI with ORE, and he encouraged URI to continue the effort to leverage its ORE expertise, education and training to serve Rhode Island, the U.S., and beyond. He said it is critical to make this effort overt, for by making the goal concrete, URI is clarifying its assets and needs so other partners can see clearly what is sought and thus assist in the work. Information will be provided to see Gill's presentation, as well as the other presentations from the event. Dr. Gill's Powerpoint can be found here:

[https://www.crc.uri.edu/projects\\_page/offshore-renewable-energy/](https://www.crc.uri.edu/projects_page/offshore-renewable-energy/)

Working Lunch and Needs from the Stakeholders – A Role for URI: *Description: After a working lunch with assigned breakout groups, panelists report out on their groups and provide recommendations for how URI should contribute to the appropriate growth of offshore renewable energy.* Prior to lunch, the working groups, and the report-out, URI Provost and Vice President for Academic Affairs Donald DeHayes thanked all for participating in the day, and said that URI is committed to supporting Rhode Island’s efforts to invest in promising economic opportunity – whether its traditional fisheries, new ORE, or a combination: “URI is ensuring students are prepared for these opportunities, and we’re providing the science and research as well,” he said. Then, participants ate lunch while engaging in small-group work; the groups discussed how URI can assist with ORE research, education and outreach in terms of these specific topics: Fisheries, Workforce, Offshore Renewable Energy, Recreation/Tourism/Community, Working Waterfront, and Natural Environment. See the notes from each group at the end of this summary document.

Following this, the large group reconvened, with moderator Dennis Nixon, Director of Rhode Island Sea Grant, leading the discussion and asking representatives from each topic area to summarize their small group recommendations for URI. In general, the groups agreed that URI is sorely needed as a neutral broker of science, as an educator, and as an outreach provider now that the Northeast, and other coastal portions of the country, are facing rapid introductions of wind farm projects into federal offshore waters, with focused efforts needed to ensure balanced ocean resources and activities, especially commercial and recreational fisheries. There was also a repeated reminder that the group work to think about the larger picture at hand, and consider the energy environment in Rhode Island and New England overall as context. Also, there was emphasis on maintaining a broad offering of educational opportunities at the college and graduate level, so students can ultimately embrace a variety of energy jobs, not just those related to wind farms. Finally, the group was asked to think about the current ORE landscape not so much as an opportunity for another Ocean SAMP-like project (as the proposed projects are slated for federal offshore waters, not state waters), but as an avenue for employing the neutral and participatory science-based practices characteristic of the SAMP process.

1. Working Waterfront: Chris Waterson, General Manager/Waterson Terminal Services, indicated that the group sees URI’s role as being critical in providing business at the waterfront with science and information so the sector can make informed decisions about how best to become agile players in the ORE economy. ORE represents a significant new opportunity for waterfront business, said Waterson, and companies want to be ready as soon as possible to participate in ORE efforts, as wind farms are constructed and managed offshore. From his own standpoint, he said, “I’m ready to do what it takes.”

2. Fisheries: Fred Mattera, Board President of the RI Commercial Fisheries Research Foundation, shared his concerns about the potential problems that proposed wind farms could have upon fisheries – he said that vital squid grounds could be jeopardized by facilities, that vessel travel could be dangerous if turbines are placed too closely together, and that the process is moving too quickly to ensure that proper information is fed into the dialogue concerning how to integrate fisheries and wind farms. While not all commercial fishermen at the meeting agreed with all of the points, there was overall agreement that URI can serve a key role as a neutral broker and science provider, and that meaningful and productive dialogue is necessary now if commercial and recreational fishing is to remain vital and in balance with the needs of ORE development, and other ocean resources activities.

3. Recreation/Tourism/Community: Jessica Willi, Executive Director of the Block Island Tourism Council and an island resident, said that URI can serve as an important communicator in ORE dialogues, and that it could be valuable to start building in an even more diverse group of stakeholders. She said that it was a challenging, though ultimately positive, process to incorporate the Block Island Wind Farm into island life, including the recreational and tourism components, and that the group felt that much more will need to be done in order to help a much larger population understand the effects of large wind farms located offshore.

4. Offshore Renewable Energy: Erich Stephens, Chief Development Officer/Vineyard Wind, indicated that the group agreed that URI had served an important role during the Ocean SAMP that had enabled all private sector, public, academic and community stakeholders to participate equally in the process, and that Block Island Wind Farm was a sign of success. He said the group would like to see URI do similar work within the ongoing ORE dialogue in the Northeast, and that all stakeholders are needed for the process. He reiterated the group's comment that URI should also concentrate on finding its niche in serving as the facilitator or leader, and that while it can't be everything to all people, it can build on its extension and research successes to push this further.

5. Workforce: Scott Jenson, Director of Labor and Training for the Rhode Island Department of Labor, said that the takeaway from his group is that Rhode Island provide students and workers with a broad and effective array of education and training opportunities so that any number of existing and emerging fields in renewable energy can be served and staffed appropriately. Doing so, he said, will ensure that the State and URI, and other academic institutions, can remain agile, and able to prepare all students for all kinds of different work experiences.

6. Natural Environment: Meg Kerr, Senior Director of Policy/Audubon Society of Rhode Island, said that the group would like to see the work that URI and partners carry out for ORE dialogues reflect the larger context of the environmental, economic and social issues facing Rhode Island and the region. "It is all intertwined and complex," she said, adding that the best or most useful

solutions for some of the resource sharing issues will likely come from discussions that are best able to capture, or focus on, the comprehensive picture.

Words of Wisdom: *Description: Based on what they heard throughout the day, including their own opinions, panelists provide their perspective about how URI should contribute to the appropriate growth of offshore renewable energy.* Alistair Pim, Vice President, Innovation & Partnerships/Northeast Clean Energy Council, moderated this session and said that the day had enabled “lots of voices” to engage in “really difficult” discussion, and that hopefully, “common ground” can ultimately be found. Overall, the panelists indicated that URI should play a significant role in bringing science to the increasingly complicated ORE dialogue in the Northeast, while also preparing students for the ORE workforce, and engaging the public in discussion. From a business standpoint, Sam Eaton, Director of Business Development/Eversource said that all are served – the private and public sectors – when a neutral broker such as URI is part of the process. Dave Monti, board member of the Rhode Island Saltwater Anglers Association, reminded the group that commercial and recreational fishing each, separately, represent businesses worth well over \$300 million annually, so it behooves all Rhode Island interests to work together to find a way to make windfarms and fisheries function well together. Janet Coit, Director of the Rhode Island Department of Environmental Management, and Carol Grant, Commissioner of the Rhode Island Office of Energy Resources, provided public and government perspective; both agreed that URI is well-suited to facilitate the ongoing ORE dialogue, and both as well cautioned the larger group to remember that this dialogue, placed as it is within the federal offshore purview, differs substantially from that of the State-based Ocean SAMP. Nonetheless, both said, the overall approach in terms of applying sound science to public policy, engaging a wide spectrum of stakeholders, and addressing the needs of the changing workforce is entirely fitting.

Closing Comments: Following the panelists, Jennifer McCann of URI CRC/Sea Grant again thanked all the participants for engaging in the day and for grappling with complex and difficult issues. She said all the materials would be made available, and that a summary of the day would be prepared and shared, so that people can think about next steps for the process. “We want to keep hearing from you,” she said.

## BREAKOUT GROUP NOTES

### Preparing for Offshore Renewable Energy in Rhode Island and Beyond

Breakout Group: Fisheries

Leader: Fred Mattera

Facilitator: Azure Cygler

Notetaker 1: Sophia Jordan

Notetaker 2: Abigail Hasenfus

June 6, 2019

---

#### Major Questions:

1. What are the information needs, technology questions, and workforce gaps created by the growth of offshore renewable energy?
2. What resources and expertise can/should URI provide to meet the identified needs?
3. In responding to the identified needs, who can/should URI provide to meet the identified needs?

#### Notes on general discussion:

- Preliminary consensus: Of all other industries currently involved in offshore development, Fisheries is one of the industries with the least focus placed on it – focus is more greatly placed on renewable energy, aquaculture, etc.
- Research for John King's presentation, prior to the breakout session, impacted the discussion during the working lunch. Discussion of lobster migration, including:
  - Noteworthy research findings involved is the discovery that lobsters will migrate across an underwater turbine cable. Their pattern of migration across the cable is still undetermined.
  - When observed, lobsters express combative behaviors toward the cables which indicate fear behavior. Fearful lobsters may result in unpredictable migration, and thus an unsuccessful fishing haul. Lobster migration may evade the capabilities for regulatory fishing boats to reach if they travel to deeper water.
- Navigation impacts:
  - King and Andrew Gill noted blue mussels are spreading into and under the structure of the windmills. This behavior may lead to deterioration of the windmills, but also easy access for fishermen depending on the allotted space between the turbines they can fit their boats.
  - Being able to fish in and among the turbines is a large concern. If the turbines are too close together, fishing near the windmills may be life threatening. Windmills

- block visibility if they are too close together, thus inhibiting fishermen safety. Two fishermen have already perished near the Block Island windmills.
- Nearly impossible for mobile gear to fish within vineyard wind because of staggered implementation of turbines.
  - Transit lanes
  - Noise Impacts:
    - What methods and technologies can we use to mitigate noise and protect species in these areas?
    - Pile drivers/hammers that are involved in construction process are extremely noisy and drive away marine life due to loud noise. “Once the hammer starts,” where do the fishers go next? Fishers claim they will be forced to relocate once the noise of reconstruction starts. Fishers risk losing their source of income.
  - Potential (pre-existing) technological solutions:
    - “Sleeves” stop the transmission of the sound in the water, but we need to more closely study the ground waves that resonate from construction activities.
    - Cofferdams – important in helping mitigate construction effects. Cofferdams were the preferred method for noise mitigation according to Gill, however, they are more expensive. Stephens insisted that the bubble curtains were just as effective, but this may be an excuse to buy cheaper supplies and using research his company paid for to justify using the bubble curtains. The accuracy of these claims remain to be seen
    - Bubble curtains - Fred Mattera was able to find out from Erich Stephens, leader of the offshore wind energy break out session, that bubble curtains will be used for noise mitigation when constructing the wind turbines. The reactions of local aquatic species living near the turbines was a shared concern between the fishermen and the producers. This was reassuring for Mattera.
  - Further research needed, i.e. significant issues that are being ignored by the wind industry:
    - **Baseline studies** – A need to gather and manage baseline data on the current state of the fisheries. Some participants believe it is too late for baseline studies, others believe there is still opportunity. There is still time to push for studies to be done in Europe – it is not too late. Noted that fisheries science operates in reality of moving baselines, tools like gradient analysis or other techniques available might be useful to consider. The way Vineyard Wind was leased out does not allow for baseline studies to be conducted
    - **Larval abundance, juvenile and spawning stocks** - Larval effects studies missing. We must catalog what we do have, identification questions. Impact of noise on larval populations and other marine life. Connected to problems with lack of baseline studies, both larval and overall. How do we best collect data in an effort to protect stocks? Can this task be taken on by the University?
    - Gill suggested in his presentation need for examining nutrients found in sediments near wind farms. We can observe its effect on fish prey since they are key in local food webs could be beneficial to RI’s current initiative and the fishing industry. It can also forecast these coveted species (including squid and larvae) when reacting to



sound waves and EMFs emitted by offshore wind turbines and how it will affect the food web.

- Fishermen at the session insisted that this research needed to be done and that they should be involved in the gathering of the data due to their maritime expertise.
- Nobody at the session seemed to be opposed to this suggestion, but a few felt as if gathering baseline data may be too late due to the high paced nature of this initiative to become the first American state to install an offshore wind farm.
- The pace of this project makes the fishermen feel like they are being left in the dust while the seas they have worked on for generations changes around them.
- There is no job security or enough compensation for fishermen, and they are tied to in what they see as an industry with a foreseeable expiration date. This is due to the offshore wind farms and their long, unbreakable contracts.
- Members of this session also agreed that the OceanSAMP could be very beneficial, but fishermen especially feel that those in charge of this grant are not meeting their promises. Reasons to justify this claim were not discussed, but were not argued against either.

#### Information Needs:

Partnerships, baseline research, research on larvae, cofferdam sleeve, Ocean SAMP intact, fishermen want legal representation, alternative fisheries, how can species local to RI be caught in different ways (like California), wastewater treatment, strong industry associations.

#### Technology questions:

- Proven that sound waves affect larvae based on independent searching (granted white papers?)
- How will the placement of the windmills affect the health and safety of fishermen and fisheries?
- Sleeve (cofferdams) around turbine to eliminate noise pollution (not ground waves)
- Will RI pay for tools needed to mitigate negative effect the windmills may pose on fish and fishermen?
- It takes time to make up for the energy and nonrenewable resources lost when changing from nonrenewable to renewable. Consensus from everyone who was not a fisherman: transitioning is better than continuing to not make change

#### Workforce Gaps:

- Fishermen are bound to their jobs by contracts
- This will likely happen to fishermen all over the country as RI starts a precedent for offshore wind.
- Maintain the mission of the Ocean SAMP

#### Resources and Expertise URI can/should Provide to meet these needs:

- Assist fishermen in conducting and documenting baseline studies of where fisheries are, where they will go after the windmills are built, how local species interact with underwater sound pollution from the windmills.
- What can the university do to keep the Ocean SAMP intact? It is being 'disemboweled' and doesn't serve its purpose anymore. OSAMP blueprint should be maintained and upheld/used. Role for URI: uphold and insert OSAMP process.
- Proof of concepts: What ARE the alternatives? Look into alternative fisheries options for existing industry that gets displaced, (e.g. jigging for squid, green grabs, limpets). Developing new local markets
- Eversource Energy perspective: Look at this through lens of global warming, decarbonizing economy
- 'Gold Rush' effect, the exponentially increasing amount of offshore wind projects hinders our ability to apply newfound knowledge from one project to the next and learn from mistakes.
- Not sufficient cross over and integration of all the research underway, project development is too fast
- Potential study to be conducted at URI: measure public perception of socioeconomic impacts of renewable energy
- Integration of research to inform policy
- Procurement phase – RWU (and URI?) can help in structuring and perhaps collaborate with OER
- Economic modeling to assess effects on communities
- Not only the economic valuation, but placing that valuation SPATIALLY out in the water. A spatial model can inform siting and design proper layout
- Conduct suite of fisheries projects (Fred's List)
- NOAA trawl survey will be disrupted by offshore development. URI could intervene to keep data collection in place

#### Who should URI work with? What Role should URI play?

- Collaborate with fishermen
- Role: research conductor and director
- Role for fishermen: help provide legal help and financial assistance
  - Fishermen don't have health care or workman's comp like MA does

## Preparing for Offshore Renewable Energy in Rhode Island and Beyond

Breakout Group: Workforce

Leader: Scott Jensen

Facilitator: Kate Venturini

Notetaker: Joshua Sawyer

June 6, 2019

---

In attendance:

- Special assistant to Scott Jensen, Real Jobs RI
- JP Walsh
- Chris Baxter
- Susan Daly
- Kate Venturini
- Aileen Kenney
- Jessica Linicus
- Corey Lang
- Josh Sawyer (notes)
- Katharine Flynn

What are the information needs, technology questions and workforce gaps created by the growth of offshore renewable energy?

- Aileen Kenney enumerated the various types of jobs going into 400MW farm:
  - Construction,
  - Gov relations, finance relations, strategy
  - Roles for environmental managers
  - Env supply chain: Marine biologists, benthic ecologists
  - Eng: civ eng, environment engineering, but: a lot of engineers do not want to work at Ørsted, there is no PE
  - Construction project man., bigger firms still busy, years in advance to book, special app. To travel to work for firm
  - MAF – coordinate with other marine users, stakeholders, etc., putting 6 jobs out in Aileen's position
  - Supply chain / forecasting / procurement jobs also available
  - Everybody in the sector's hiring, lots of companies setting up in NE.
  - Vessel staff
  - Cultural resources / underwater marine archeologists
  - Health & Safety personnel
- As much as possible, Ørsted utilizes as talent pipeline.
- The Offshore Renewable / Wind Energy Industry is trying to avoid boom / bust cycle associated with these initiatives as it discourages investment and creates HR issues. They're planning for at least 50 years of work in this sector.
- How much of a lens does Aileen have into workforce contracts / future employment / is there a strategic plan for that?

- For every 1 job at Ørsted, 2-3 somewhere else
- Ørsted as a general contractor for specialty trades is appropriate analogy
- Ørsted would hire Gilbain, subcontract, or Inspire, subcontract
- Some technical requirements that staff might have include:
  - STATA is used heavily
  - Sensors for structural integrity of turbine blades, etc.
  - Ultimately, though, they're looking for fundamentally sound STEM professionals

What resources and expertise can/should URI provide to meet the identified needs?

- URI has many of the pieces in place *already* and can slightly manipulate course plans to gear towards offshore energy.
- When producing an engineer, what added aspects could be taught to make a student / employee better for Ørsted, etc.?
  - No formal energy training @ URI UNTIL Energy Economics & Management created as a program for energy related skillset, created by URI for additional skillset / credential
  - Scott states the dream of having a pipeline never happens from the beginning, for example, if anybody could achieve a talent pipeline, Electric Boat should be able to do it (Scott made a plan with them and it changes every 2 weeks) and it has never come to fruition. Easy to see pipeline looking back.
  - Don't get a PhD in offshore wind – get an engineering degree with some extra skills, develop a broader skillset
  - Certificates are more respected in industry, not a super high bar to pass
  - Possibility of creating a wind energy / renewable energy / offshore certificate?
- A lot of summer programming for students in mS/ HS with Susan Daly marine training
  - CS program for high school kids to shorten undergrad training time
  - The possibility of receiving credit from WindWin or similar program towards URI / CCRI undergrad degree is worth exploring
- Not a lot of internship opportunities at Ørsted
  - Groups (Educational, Industry) must put pressure on developers to fund PhDs in areas of interest
  - “Start retiring some risks and move forward to addressing other risks”

In responding to the identified needs, who should URI work with? Should URI lead? If not, what role should URI play?

- URI needs to be very nimble. When somebody at Ørsted, “wouldn't it be great to do something like a PhD”, URI needs to have the door open / facilitator in place to actually make it happen.
- It's about building “screamingly happy reference customer”, i.e. building a handful of amazing employees to reinforce Ørsted relationship with URI.
- SAMP as an example of something important so businesses can grow and URI was heavily involved with it.
- Modules – stackable certificates that can lead to a professional masters. Katharine Flynn using Amgen as initial partner, “biotech curriculum.” Talk about what Ørsted needed to

create stackable certificates to create a professional masters in “offshore wind” or similar.

- With Amgen, they love this program and want to partner closer with URI due to the above program.
- Developers are in every state and making deals with every state. As such, URI should be reaching out to developers to understand their needs and work with them. Examples: VHB, GZA.
- A lot of various consulting firms exist in RI making a lot of money with offshore energy, push on them to take interns – a lot of these firm employees *are* URI grads.
- Take advantage of the alumni network.
- Bring more engineers into energy fellows program, IEP students off go to Germany and work with energy companies. The professor from Braunschweig comes to URI yearly. EEW is a European company that might be able to send somebody in.
- To realize that this is going to be an evolving, iterative process – it will be huge in 10 years, but it doesn’t exist yet. URI should become as involved in the industry as possible.

## Preparing for Offshore Renewable Energy in Rhode Island and Beyond

Breakout Group: Offshore Wind Energy

Leader: Erich Stephens

Facilitator: Kaylyn Keane

Notetaker: Peter Melanson

June 6, 2019

---

### 1. Who was in our group?

- URI faculty in charge of technology distribution
- Save The Bay Stakeholder representative
- Block Island Resident and former meteorologist
- Researcher focusing on benthic organisms
- Faculty member in Ocean Engineering- technical aspects of offshore energy
- Executive director of fisheries research- representing commercial fishermen
- Employment Sector workforce training - high school students offshore wind certification
- CRMC employee particularly to work with the offshore wind industry

### 2. What are the information needs, technology questions, and workforce gaps created by the growth of offshore?

#### A. Information needs

- As a business person there are two different aspects to developing wind farms
  - Actual project development
    - Need baseline environmental data across the entire region
    - Need to determine effects of project development
      - Planning for these effects and even the eventual decommission
  - Technology development
- What Deepwater Wind did right?
  - They thoroughly involved the public through surveys.
  - Mocked up photographs of the potential wind farms
    - Very graphic, easily understandable to the layperson, keeping the public “in touch”
  - Concerned about the Impact on the fisheries
- Would it be helpful if the university played a role as a convener?
  - They had several meetings on Block Island
  - Attendance relatively low at these meetings with repeat customers
  - Have a lot of different scientists to “hammer it out”, culture of cooperation
  - URI could provide standards/best practices for data collection and management in the development of a publicly useful database
- Openness to ecological approaches towards wind farms
  - When you want to look at the impact of fisheries you go and count the fish

- This approach doesn't have any predictive power, doesn't look at the health of the ecosystem
    - How can we utilize the large amounts of data already being collected by fisherman and others?
  - Ecological approach involves looking at the lower trophic levels and the health of the whole ecosystem
  - Fishermen keep detailed logs of data over the span of years
    - Scientific community should use this resource
    - Important data stream going forwards
    - Important to mesh with this resource with data collected from scientists
  - Bringing scientists and fishermen together to fill in the gaps of environmental data
  - Fishermen collect wide arrays of data, however scientific accuracy of this data needs to be quality assured
  - Who will develop the research questions that this data will be used for?
    - URI could play a key role in developing these questions

#### B. Technology

- URI engineering has huge potential to monitor the physical and ecological aspects of the ocean
- URI may not be the right spot for the manufacturing innovation of these products
- Optimization and siting of the operation were emphasized as potential key purposes URI could play
- Education about climate change is important from a young age
- Windwin is already engaging teachers and HS students

#### 3. What resources and expertise should URI provide

- URI getting out there and giving educational presentations
  - URI demonstrated capability to translate technical information to the layperson
- Expertise provided directly to wind farms
  - Technical aspect
  - Environmental impact
  - Social science
- URI could become a data center
  - All data collected by different sources is not in the same format
    - Requires integration
  - URI could house a center that provides "Not one stop shopping but first stop shopping"
  - Could provide accountability, who is working on what
  - URI website could have more functionality
  - Data needs to be standardized

#### 4. What role should URI play

- From a policy perspective
  - There is no precedent for the issues of offshore wind
- URI should build upon its rich history of Extension work and stakeholder engagement
- URI should work with other academic and research institutions regionally to have agreed upon expertise, understand what research questions are being pursued and understand URI's niche.
  - Don't try to be all things to all people
  - URI gets to decide where their specialty lies due to its status as an early mover
  - Engage industry in order to effectively bring everyone to the conversation
  - Create a forum for "zesty conversation"
- Servant leadership - working as a facilitator for the common good
- URI's role as an independent synthesizer



## Preparing for Offshore Renewable Energy in Rhode Island and Beyond

Breakout Group: Recreation, Tourism, and Community

Leader: Jessica Willi

Facilitator: Sue Kennedy

Notetaker: Samantha Montella

June 6, 2019

---

### Major Questions:

1. What are the information needs, technology questions, and workforce gaps created by the growth of offshore renewable energy?
2. What resources and expertise can/should URI provide to meet the identified needs?
3. In responding to the identified needs, who can/should URI provide to meet the identified needs?

During this breakout session, we discussed how URI should contribute to the appropriate growth of offshore renewable energy in regards to the tourism, recreation and the community. The indirect and secondary economic impacts of the infrastructure on the communities needs to be considered, such as the chain effect of the fisheries like the food stores and the truckers that transport the goods from the fishing industry. Fisheries in Europe are able to work side by side with the wind turbine companies to benefit both sides, creating a synergy and the same relationship should be developed here. Thus, the discussion addressed the question: How do we come to a more trusting working relationship between the varied stakeholder groups? It was discussed that maybe this is an area where URI can step in to build this relationship. We need to appropriately learn from other places about what has worked and what hasn't, consider Galilee as an example.

URI can possibly serve as a facilitator or neutral coordinator because there isn't one now. Currently, communication is difficult among the many stakeholders involved in the process of offshore wind. Hence, there's a real need to have an umbrella group to take a leadership role. URI can create a research protocol for offshore wind development and focus on collaborative science partnerships with many entities. It's vital that we develop a better capacity to the stakeholder process by building in equity. The invisible groups that we don't notice yet that are deeply affected by the offshore wind process need to be considered. This is important for the tourism/recreation arena and potential new stakeholders.

So, who are the stakeholders? The group discussed the potential groups that are being overlooked in the process, such as immigrant populations who may not speak English, urban or recreational fishermen and some people who may be hesitant to get involved. The proliferation of turbines will compound the number of stakeholders and URI could be doing research, which would also benefit the wind developers because URI is a neutral entity.

#### Information Needs/ Technology Questions:

Next the group discussed the information needs and it was brought up that everyone is hitting roadblocks in communication. Therefore, we need a way to ensure that all of the stakeholders' needs are being met so that they can be effectively and efficiently answered. URI can play a role in fixing this issue by being a hub of information that provides facts and communication between groups.

The group mentioned that a big part of the cable is exposed on the beach on Block Island and that people are avoiding that part of the beach because they do not know the effects of electromagnetic fields (EMF). Word circulated that sharks are attracted to the EMF from the cables, which came up in a news article. This story led to the discussion of perception issues in the media and public.

Thus, how do we create a communication system to answer this? URI can bring these people together by providing them with facts and communication that will link the tourism/recreation industries into the offshore wind development process.

There is an abundance of research, but maybe it's not being shared as cooperatively as it could be. The scientific articles may not be appealing enough to help connect the public to the truth behind offshore wind. Communication needs a next step to connect the public to the true facts about turbines. URI could team up and create a way to make the "dry," technical information from research into visually appealing, and easier to understand terms. This information needs to flow, be fluid and quickly reach the public. Designated persons should put together a team to create communication for the offshore wind. For example, this could be a full-time job for a few energy fellows at URI. They could work to disseminate this information in digestible terms for the public by making the dry research articles more interesting. Maybe a website could be created that serves as a platform for the public to learn more about the truth behind offshore wind projects.

#### Key Points:

- Having some sort of umbrella group/offshore wind farm center group
- Some sort of place to put this information that people can access easily
- Not only looking at primary issues, but also the secondary issues that might not be as obvious now but in 20/30 years will be
- URI can come in an independent/neutral group
- Communication campaign

## Preparing for Offshore Renewable Energy in Rhode Island and Beyond

Breakout Group: Natural Environment

Leader: Meg Kerr

Facilitator: Erin O'Neill

Notetaker: Jamie Buck

June 6, 2019

---

- 1:00 pm Introductions (12 people in group)
- Starting with workforce expertise; what's missing?
  - Need data (says Vineyard Wind rep)
    - \*\*\*Much of our discussion focused on the lack of data and the general feeling of unease regarding the "figure it out as we go along" mentality
  - For example, ideally there's a hope to get the grid pattern of the turbines approved, but cant speak to how that will effect the fishing grounds
  - Wish that we had done monitoring starting ten years ago, and now we have to make up for it as we go along
  - Need to have baseline data but we don't, so it will be hard to gauge true effects
    - To add on, theres no direct parallel projects where we can go to measure; some of the areas in Europe are just flat-out NO FISHING... we can't do that because of the importance the industry to our economy, etc.
      - Furthermore, the further south in the lease area you go, the less data there is
      - The people who are actually building them... what do you need?
  - We need everything (Orsted rep)
  - Europe has all of the experts but they don't know US geology (and other specifics) - we need to build up this level of expertise in the US
  - Vineyard Wind rep agrees, and further notes that outreach is vitally important and thinks that this could be built into curriculums
  - Also union trainings need to happen; theres a conflict of interest re. asking your competitors to train you
  - Need to connects and communicate between all the different types of natural environment experts (whales, birds, etc)
  - Gap (that URI could be taking care of): lack of communication and coordination between all the different entities and regional science groups
  - Vineyard Wind rep says developers want to donate money to research but theres too many competing and similar initiatives
  - URI should be coordinating all of these different competing and similar initiatives for research
  - URI should be helping to compile what all of the different stakeholders' priorities are
  - Developers WANT to help the stakeholders but lack the leadership and coordination makes that tricky
  - General feeling among group that BOEM hasn't carried the torch re. leadership in the way people expected

- ALSO, URI and the other universities and research entities need to create a “coalition of researcher professionals” in order to not fall into competition
- NE Federal Collaborative is a potential foundation to build on
- Conflicting timelines and speeds of workflow don’t line up
- For example NEPA issues... this is larger than NEPA
- Not to mention all these agencies are severely understaffed, and they don’t have the resources to staff up
- We’ve never dealt with big energy development like other regions have - we aren’t prepared
  - Another way that URI can help:
    - Do lab work to further research EMF impacts of cables
    - Another issue brought up: Looking at the projects as discrete projects rather than one large unit
- URI could at least characterize the issue of trying to integrate this brand new energy production system into the same old EPA, NOAA, etc.
- Regarding avian impacts:
  - There is a lot of baseline data for birds, but fish is far more complex given the economic and resource issues involved
  - Side note - Vineyard Wind plans to incorporate motion sensor type lights for nighttime - if a plane is in the airspace they'll turn on, but if not then they're off in order to help birds
  - URI should also work on developing better bird monitoring technologies and programs
  - RFP released by Vineyard Wind so solicit better acoustic monitoring systems for whales as well as RFPs for implications of floating turbines

## Preparing for Offshore Renewable Energy in Rhode Island and Beyond

Breakout Group: Working Waterfront

Leader: Chris Waterson

Facilitator: Dawn Kotowicz

Notetaker: Tara Bourhis

June 6, 2019

---

A variety of perspectives were included in the Waterfront group which ranged from the Sea Grant Director, Dennis Nixon, to Chief of the Waterways Management Division, Ed LaBlanc. The conversation focused on the needs to achieve and recognized that fishing jobs deserve a majority of consideration when deliberating the needs of the waterfront. The jobs of many fishermen would be compromised, and they are forced to stay on board with long contracts and singularity in job culture. This goes along with considering the best use of a port and questioning if it is serving all of the functions it should. To consider these factors, ORE economic data along with a supply chain road map were used to determine if the practices that are run through are the most efficient.

When turbines are brought over to block island there is a confrontation between the Jamestown bridge height and the vessel that has to carry this large turbine. Vessels must be American built as stated by the Jones Act. New vessels that are small but strong and have the compromise to carry a 325 ft turbine under a 375 ft bridge. The current practices we use are not going to help so we need to start procuring new innovations which may include a vertical carry of turbines. Assembly measurements may come into place when manufacturing of turbines are in the United States; if that day ever comes. The physical environment is highly susceptible to change such as sea level rise. This is another factor that may change our interpretation of how we are going to deal with future turbines. The working life of a turbine does not last forever so it should be noted how much it will cost when they need to be uninstalled and what floating components will be remaining after. The goal is to make as little to no disturbance to the natural environment as possible. Technology may be used to observe this but also has an opposing factor of noise and vibration which will affect marine life.

### Waterfront Group - URI's Role

URI does have a great grant program and technological resources, but a partnership of some kind has been suggested. The Navy was the main suggestion since they have the ideal marine radar technology. URI may serve as a liaison when obtaining information by spreading the data and research to multiple stakeholders. As for research questions, we can ask URI:

- How can we balance existing industries on the waterfront such as fishing and marine resources?
- What are some of the best turnkey solutions for supply chain and assembly?
- How can we capture new value within the industry without restricting any environmental entities?

Since the main use of waterfronts today happen to be vehicle lots and land storage, the stakeholders also discussed that the industry should be married to its asset. In this case, the waterfront would be partnered with tourism, fishery, and boating rackets. Value to the waterfront is the main asset, due to its nature people will only stay attracted to what is preserved. It is not about preserving the industry but being able to add to it with new innovations.

### Barriers

As previously discussed, there are obstacles that prevent waterfront stakeholders from signing onto a renewable offshore wind energy source immediately. Signs of hesitations derive from the operation and maintenance of turbines along with their extenuating transport, maintaining fishing jobs, exhausting the quota in species such as fish, time management, communication between stakeholders, and difficult markets. With this information, we can provide questions to what information is necessary to come to a conclusion or perspective. The Waterfront group proposed several questions concerning the welfare of those within Waterfront industries. First, what data do we have on fishing? This involves the marking of each catch to track diminishing stocks and avoid exhausting quotas. Squids are well known for having exhausted stocks in the Point Judith area halfway through the fishing year. The group also wanted to determine what could help the tourism, fishing, and boating industry's' in the long run. Stakeholders, such as fishermen, have not been well represented in the past and a directory can be formed so all parties are equally involved and aware of each step into the process.

### Conclusion

There is a great opportunity for all parties to come together and submit their concerns along with URI's involvement in research and discovery of ways to solve issues that will arise. A directory with a list of all of the stakeholder groups, along with a database for open, flowing communication would speed up the discourse. Positive communication with the University of Rhode Island can serve as an indifferent point of view. URI forming partnerships and spreading the knowledge of offshore renewable energy, along with accepting different perspectives would be extremely beneficial to this project. All groups could agree that they would like to avoid as much collateral damage as possible. With the progression of relationships with nearby schools, especially maritime ones, technology provided to build models and forecast future predicaments would be applied.