



Public Questions and Answers from 7/22/2020 Webinar: Offshore Wind Energy Development off NJ Presented & Answered by Clean Ocean Action Staff

Introduction:

On July 22, 2020 Clean Ocean Action held an informational webinar about offshore wind development off New Jersey and New York. The webinar provided an overview of offshore wind development, touching upon topics such as why states are investing in offshore wind energy, who regulates the development of offshore wind, and what are the environmental concerns related to offshore wind development.

A recording of the webinar can be [accessed here](#). (Password: offshore2020#)

At the end of the webinar, Clean Ocean Action held a question and answer session. Clean Ocean Action staff attempted to answer as many questions as possible but were unable to address all. This document answers the remaining questions that were raised by attendees. The questions were sorted by topic area.

Several acronyms are used throughout this document. To see a full list of acronyms relevant to offshore wind development, consult Appendix A - Clean Ocean Action Offshore Wind Energy Development Acronym List (or [click here for Appendix A](#)).

Topic One: Wind Energy: In General

1. How prevalent are land-based wind development?
 - According to the U.S. Energy Information Administration, wind turbines provide 8% of electric generating capacity in the United States. This represents the largest source of renewable energy in the U.S.
 - However, more than half of U.S. wind capacity is in only five states: Texas, Iowa, Oklahoma, California, and Kansas. Furthermore, three of those states, Iowa, Oklahoma, and Kansas, make up 25% of utility scale wind energy generating capacity in the U.S. This is because large areas of open land are needed to develop onshore (land-based) wind energy resources. Visit [U.S. Energy Information Administration - Wind Explained: Where Wind Power is Harnessed, for more information](#).

Topic Two: Federal and State Authority Over Offshore Wind Energy Development

1. What is included in the Bureau of Ocean Energy Management's ("BOEM") first environmental review?
 - BOEM is required to perform environmental review at two points in offshore wind development:
 - First, in the process of finalizing Wind Energy Areas, which will later be broken down into lease areas where developers can bid on the right to lease

the section of the ocean for offshore wind development from the federal government.

- Second, when reviewing individual Construction and Operation Plans for specific offshore wind projects.
 - Both environmental reviews are required under the National Environmental Policy Act (“NEPA”). NEPA is a bedrock environmental statute that requires federal agencies to evaluate the potential environmental effects of proposed actions. This includes an evaluation of several alternatives as well as the no-action alternative. Federal agencies must look at direct, indirect, and cumulative impacts.
2. Will state rules, regulations, and statutes be published for public comment periods prior to approval for all relevant rules, regulations, and statutes.
 - Yes, generally speaking public notices will be published with a specified public comment period for all major federal and state permitting decisions for offshore wind developments.
 3. Does NJDEP have authority to do anything considering the development of offshore wind energy in federal waters?
 - The NJDEP has some authority in federal waters under the Coastal Zone Management Act (“CZMA”). The purpose of the CZMA was to ensure coastal states retained a voice in actions occurring in the OCS which could affect their coastal resources. While the act did not change the boundaries between state and federal offshore jurisdiction, it did create a new mechanism for states to have a stronger voice in activities in federal waters which could impact their coasts. Under the CZMA, states adopt Coastal Management Plans for approval by the federal government. Once a state plan has been approved, all activities carried out or approved by the federal government within the coastal zone must be consistent with the state’s program.

Topic Three: Siting and Development of Offshore Wind

1. What is the planned density of turbines in the leased areas? Will the 100 turbines be in a small area within the large lease?
 - The density of each individual wind project will vary on a project-by-project basis. There are several factors determining the footprint of the offshore wind project including the size of the turbines and the spacing between each turbine. In terms of spacing, the general rule is that the larger the turbine size, the more spacing needed between turbines. Turbine spacing tends to range between .75 nautical miles and 2 nautical miles.
 - While it will not be clear until the specific project layout is presented to BOEM in the form of a Construction and Operation Plan, it is likely that most offshore wind projects will only utilize a portion of the federal lease area. This creates the potential for each lease area to be divided into multiple wind projects.

2. Will the bases have to be removed at the end of the turbine's lifespan?
 - It is unclear whether the foundations will have to be fully removed. There are discussions about leaving the bases/ foundations of the offshore wind turbines after the end of the useful life for the project to serve as artificial reefs. The New Jersey Board of Public Utilities requires applicants for offshore wind development to submit a Decommissioning Plan as part of their application.
3. How far offshore will the Empire wind projects be located? How far will the expected Wind Energy Area's be? Will any of the wind projects get into international water?
 - No wind projects will be developed in international water. At this point, it is virtually certain that all offshore wind projects will occur in the federally controlled Outer Continental Shelf ("OCS"), which extends from three miles from the shoreline up until one hundred and ninety-nine miles from the shoreline. Target areas appear to be anywhere from 12 miles from the shore to 20 miles.
 - Empire Wind is an average of 20 miles south of Long Island, east of the Rockaways.
 - Ocean Wind is an average of 15 miles off the coast of New Jersey, east of Atlantic City.
4. Is it anticipated that future Wind Energy Areas will be delineated by BOEM or will additional turbines be expanded in existing project leases areas to meet state goals?
 - While it is not certain, it does appear that both New York and New Jersey could meet their offshore wind energy goals by utilizing the existing lease areas as well as the forthcoming future lease areas from the NY/NJ Bight Wind Energy Areas. Some lease areas are large enough to accommodate multiple offshore wind projects and this option is a possibility. The New York State Offshore Wind Master Plan argues that it may be critical for new Wind Energy Areas be identified and leased to ensure an adequate and competitive supply of areas are available to meet New York's demand at the lowest cost.
5. What can be done to ensure access to the waters around the base of the Turbines for fishermen and divers?
 - The United States Coast Guard ("USCG") has the authority to make the final determination on whether traditional ocean uses such as fishing, navigation, and diving will have access to the offshore wind energy areas. Currently, there are no plans to prohibit access from fisherman or divers from offshore wind projects or offshore wind development areas. At this point in time, the USCG, BOEM, and the offshore wind developers have stated that they do not intend to deny access to the wind projects. However, their words alone has not been sufficient. There are still significant concerns related to access as there is no written confirmation from the agencies and even if fishing is technically permitted there are still concerns related to the impact it will have on fishing operations. First, the offshore wind projects are utilizing massive areas of the ocean, which if prohibited from continued commercial and recreational fishing will see large swaths of the ocean closed off to the industry. For reference, the current offshore wind leases and wind energy areas off the coast of

New Jersey equals a combined 1,989,794 acres. This equates to roughly 1,507,419 football fields.

- Second, the wind projects may drastically impact the fishing habitat and patterns as we discussed when we presented about impacts to wildlife.
- Third, it may not be technically feasible to continue to fish in their areas, especially with techniques like trawling and drag nets that impact the seafloor as they could catch the cables or the concrete mattresses placed where optimal burial depth could not be achieved.
- Fourth, these developments may create navigational hazards causing the fishing vessels to circumvent these areas to ensure safe transit. This would require longer transit times to reach previously fished areas causing longer hours for the same yields. The navigational concern is also important as the fishing industry is not bound by state lines and travels up and down the coast and any impacts in navigation will be felt.
- Fifth, the layout and orientation of the turbines and inter-array cables pose concerns. The fishing community has repeatedly requested increased spacing between the turbines to ensure continued access that allows ample room for their operations. The orientation of the layout, the directional configuration of the turbines is also critically important. The 84 turbine Vineyard Wind project in Massachusetts is arranged on a northwest-southeast orientation. Several fishing groups are pushing for an east-west orientation as most fishing occurs along the benthic curves in the area which run east-west in the wind project.
- Finally, there is concern that the insurance companies for their vessels will not insure them or will require significant payment if they will be operating in the wind projects.
- COA urges all offshore wind developers to sign a memorandum of understanding which indicate that all pre-existing uses such as fishing, diving, and navigation will be allowed to continue in the existence of an offshore wind project.

Topic Three: Construction of Offshore Wind Energy Resources

1. What is the plan to address the lack of Jones Act compliant vessels for the construction of offshore wind projects?
 - The Jones Act is a federal law that regulates maritime commerce in the United States. The law requires that transportation of merchandise between two points in the U.S. must be made by qualified US-flag vessels (ships that are built, owned, and operated by the United States and U.S. citizens). Violations can result in fines and the confiscation of the offending vessel.
 - In terms of offshore wind (“OSW”) development, the Jones Act creates an issue for development of the emerging industry as there is currently a lack of compliant vessels. The absence of U.S. flagged OSW construction vessels, and the hundreds of millions of dollars it would cost to build them, has given the industry little choice but to find a way to use European-owned vessels at this stage of U.S. OSW development for the first wave of projects. In constructing the initial U.S. OSW projects, European-owned installation vessels have avoided U.S. ports and have relied on U.S.-owned barges to ferry components to and between the installation sites. This

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- approach has created compliance risk under the “Koff Rulings” issued by U.S. Customs and Border Protection (“CBP”) in 2012, which held that any lateral movement of a lifting vessel during loading and unloading operations – whether planned and intentional or not – amounted to movement of the “merchandise” suspended from the vessel’s crane. Therefore, once a lift had begun, movement of an OSW installation vessel for safety or navigational reasons could have resulted in a Jones Act violation.
- However, in 2019, the CBP issued new guidance that, in part, withdrew the Koff Rulings. It now recognizes that incidental movement of vessels during lifting operations does not violate the Jones Act. Other aspects of the new guidance document make it clear that from CBP’s perspective, foreign-owned OSW lift and construction vessels can be used to install offshore wind turbines so long as all components and supplies are transported to and between installation sites on U.S.-owned barges. Installers must strictly ensure that all components, fasteners, couplings, lubricants, shims, cable and similar items that will become part of the OSW structures remain on U.S.-owned barges. None may be on-board non-Jones Act compliant installation vessels as they move from installation site to installation site within an OSW project.
2. Does pile-driving using faster, more efficient, and quieter sonic-vibration techniques used recently in Long Branch to install a steel sea wall?
 - The amount and type of pile driving necessary for offshore wind development depends on numerous factors and will vary on a project-by-project basis.
 - A primary factor is the type of foundation used. Gravity based foundations, suction bucket foundations, and floating wind projects have no piles and, therefore, require no piledriving. All other forms of foundations (monopile, tripod, jacket) will require pile driving. Pile driving can have significant impacts on marine life such as permanent hearing loss, as well as behavioral effects. Monopiles are the most common form of foundations, representing 80% of installed capacity worldwide. The practices used for pile driving for the OSW industry are likely to be like those used in other projects.
 3. Which of the foundations are most used around the world?
 - By far the most common form is the monopile. 80% of offshore wind development uses monopile foundations. The second most common is gravity based at 1%. Jacket foundations account for 5%. Tripod and Tripile collectively account for 5% as well.
 4. Can the construction ports be transitioned into commercial or back to natural habitat after they are done?
 - It is unlikely that the construction and operation and maintenance ports can be transitioned back to natural habitat after they are done. First, these ports will likely be needed for several decades as they will furnish the development of offshore wind resources for the next fifteen years, and likely be used to meet additional needs as the initial wave of projects are decommissioned and new projects developed. Second, the

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ports need very specific requirements to accommodate offshore wind development. This includes bearing capacity, storage space, harbor depth, and manufacturing capabilities. It is unlikely these developments could be transitioned back into natural habitat. There is potential for the ports to be utilized for other commercial activities either in connection with offshore wind development.

Topic Four: Transmission

1. Have you heard any updates on the idea to make a communal backbone of shared cables offshore to reduce the amount of cables?
 - Yes, there is a plan for allowing the ability to create a communal backbone transmission system for offshore wind development in both New York and New Jersey. However, the first handful of offshore wind projects will not utilize this system and are legally required to have the offshore wind developer handle transmission construction.
 - To fully understand this, it is important to breakdown how New York and New Jersey anticipate meeting their ambitious offshore wind development goals, with both states committing to developing 9,000 MW and 7,500 MW of offshore wind energy capacity by 2035, respectively. To make this larger goal manageable, both states have developed a process and a schedule for approving individual offshore wind projects, called the solicitation process. Learn more about [New York's solicitation process here](#). Learn more about [New Jersey's solicitation process here](#).
 - New Jersey's solicitation process calls for the development of six offshore wind projects to meet the 7,500 MW goal. The first two projects are prohibited from using a communal backbone transmission system. However, the state is allowing developers for the third, fourth, fifth, and sixth offshore wind projects to include in their applications how the offshore wind projects will utilize and connect to a larger transmission system.
 - There are currently companies attempting to develop a communal backbone transmission system. Anbaric is one such company, and in June of 2018, they submitted an application for an unsolicited right-of-way for offshore wind transmission with BOEM. Information related to Anbaric's work on a backbone transmission line for New Jersey can be [accessed here](#).

Topic Five Decommissioning

1. Ørsted says the wind projects are only good for 20 – 25 years, then they disable them. What then? How is it worth the environmental impacts for something so temporary?
 - The average life span of an offshore wind project is roughly 20-25 years, though this could be extended with new technology. In fact, a new report from Berkley Lab shows that a majority of wind project developers have increased project life expectancy assumptions for facilities in the U.S. to 30 years. Furthermore, many states, including New Jersey, require that developers address decommissioning when soliciting applications for potential offshore wind projects. The New Jersey Board of Public Utilities requires in all offshore wind applications a decommissioning plan which addresses the expected useful economic life, how the project will be

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decommissioned, and financial assurances for decommissioning. There are currently no plans for how states will replace offshore wind projects to account for the loss of energy.

2. Are there any studies from project sites from Europe regarding the longevity of projects and what is done when a wind project is no longer producing enough MW to be cost effective to remain in production? The concern here would be having to revamp sites every 5-10 years to keep up with energy generation needs
 - The average life expectancy of an offshore wind project is roughly 20-25 years, though this could be extended with new technology. In fact, a new report from Berkley Lab shows that most wind project developers have increased project life expectancy assumptions. Several projects in Europe have gone through decommissioning. A new issue is that given the significant increase in the scale and scope of offshore wind projects, it is hard to compare previous decommissioning efforts with the projects that we will be seeing in the Atlantic.

Topic Six: Environmental Impacts of Offshore Wind Development

1. What represents the environmental conscience of the development of these wind projects?
 - This is a very interesting and deeply individualist question. Clean Ocean Action only speaks for the organization's perspective.
 - See [Clean Ocean Action's Policy Statement on Offshore Wind Development](#) to better understand how offshore wind can be developed in an environmentally responsible manner.
2. Has EMF ever been shown to negatively affect any species of ocean life?
 - Yes, studies have shown that electromagnetic fields ("EMF") have negative impacts on certain species. Such impacts have been documented on animals, such as migratory birds, bats, and certain fish and insects, that are strongly dependent on magnetic fields for orientation or migration. Species such as sharks and rays that possess electric sense organs are expected to be most impacted. Moreover, animals with weak defense mechanisms may be impacted. For instance, those with a limited ability to regulate their body temperature may be more vulnerable to the effects of high frequency EMF. Currently, little is known about how severe the impacts from EMF will be on various species, but more research is being published. See the research by [Dr. John King, a professor at the University of Rhode Island's Graduate School of Oceanography](#) to learn more.
3. What is the decibel level of the wind turbine noise?
 - Noise-producing activities associated with the development of offshore wind facilities include: geological and geophysical surveys, vessel traffic, construction (e.g., pile driving), operation, and maintenance. The noise from these activities has the potential to harass or disturb protected species.

- Pile driving produces high sound pressure levels in both the surrounding air and underwater environment. Sound levels vary substantially, and the size of the hammer, diameter of the pile, as well as properties of the seafloor, influence the source level and frequency of the signals generated.
 - There are several methods for mitigating the noise from pile driving including vibration pile driving, bubble curtains, and pile sleeves.
 - Impacts based on noise will be evaluated in several areas to ensure compliance with applicable law. Specifically, it will be evaluated under both the Environmental Impact Statement as required by the National Environmental Policy Act, and if there are any endangered species in the project areas during Section 7 consultation as required by the Endangered Species Act.
 - Turbines: Sound frequencies are measured in hertz (Hz) or cycles per second. Frequencies in the range of 20Hz to 20,000Hz are generally audible to the human ear. As a turbine operates, vibrations inside the nacelle (the housing that contains the generator, gearbox, and other parts) are transmitted down the main shaft of the wind turbine and into its foundation. These vibrations then emit outward into the water column and seafloor. Mechanical noise generated by offshore wind turbines is concentrated at low frequencies ranging between 700-1,000 Hertz. The level slightly increases as wind speed increases. Despite the low level, low frequency nature of the sound, behavioral reactions have been observed in a study of harbor porpoise (*Phocoena phocoena*) response to the reproduction of wind turbine noise.
4. What are some documented impacts on birds, bats, and insects? From the Institute for Energy Research: "Studies have found that wind turbines are a dangerous threat to bats, high-conservation value birds, and insect populations that are a major supply of food to bats and birds. Insects, birds, bats, and wind project developers are attracted to the same thing—high wind speeds. Wind projects in Europe and the United States are being built in the path of migration trails that have been used by insects and birds for millions of years. Researchers found that wind turbines in Germany resulted in a loss of about 1.2 trillion insects of different species each year. Researchers in India found almost four times fewer buzzards, hawks, and kites in areas with wind projects—a loss of about 75 percent. They found that wind turbines are akin to adding a top predator to the ecosystem, killing off birds, but allowing small animals to increase their populations resulting in a trickle effect throughout the ecosystem".
- The Institute for Energy Research (IRE) report referenced above is *Wind Turbines Against Nature* (July 19, 2019). The report appears to only address the impacts studied from onshore wind projects. There appear to be less concerns about impact to bats and insects with offshore wind projects. The threat to birds is still a serious concern and something that must be addressed early and often in the planning for siting offshore wind resources.

5. What agency gets to patrol the construction and production? If say there is a whale strike, or evidence of bird fatalities, who collects this data, and what consequences are realistic from policing agencies?
- Ultimately, BOEM is the main federal agency responsible for offshore wind development but works with other federal agencies to ensure the protection of wildlife. BOEM is responsible for siting and approving offshore wind energy areas and is charged with leading, along with the assistance of other federal agencies, the environmental review process required under the National Environmental Policy Act, and other environmental laws.
 - BOEM ensures compliance through the environmental review process and by reviewing plans submitted by developers which must demonstrate that the proposed activities will be conducted in a manner that will meet the various requirements of the applicable environmental laws.
 - While BOEM is the main federal agency several other agencies play important roles in offshore wind development. These include the National Oceanic and Atmospheric Administration who implements the Marine Mammal Protection Act and is responsible for approving permit applications for Incidental Takes of marine mammals, the National Marine Fisheries Service who implements the Endangered Species Act, and U.S. Fish and Wildlife Service that implements the Migratory Bird Treaty Act. State governments will also have authority over impacts to wildlife.
 - The table below is taken from [BOEM's Summary Report: Best Management Practices Workshop for Atlantic Offshore Wind Facilities and Marine Protected Species \(March, 2018\)](#) and outlines BOEM responsibilities and developer responsibilities for the development of offshore wind.

Area of Responsibility	BOEM Responsibility	Developer Responsibility
Mission / Planning	Oversees OCS energy development, including compliance with associated Federal Regulations	Submits detailed plan to BOEM providing a description of the proposed activities, as well as a description of resources, status and how they could be affected by the proposed activities
Mitigation	Ensures mitigation measures are incorporated into project design	Demonstrates that proposed activities, including mitigation measures, will be conducted in a manner that will follow BMPs
Environmental Review	Conducts site specific environmental review and consultations	Submits detailed information to assist BOEM with complying with NEPA and other environmental laws

Monitoring	Develops monitoring strategy	Implements monitoring activities, which: ensures BMP compliance, studies effectiveness of the action, remedies noneffective or failed mitigation, and detects unforeseen consequences
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Topic Seven: Impacts to Recreational and Commercial Fishing and Offshore Wind Development

1. Aren't there also some benefits to fish in creating new habitat on the base of the offshore wind structure?
 - Yes, there have been reports and studies showing that offshore wind projects can act as artificial reefs, attracting a wide variety of marine life, including fish. This has been documented at the Block Island Wind Farm, the first offshore wind projects in the U.S. However, most of the reports indicate while this artificial reef effect may be advantageous for recreational fishing, there has not been any data collected on the impact it has had on commercial fishing.
 - However, there are also concerns associated with offshore wind projects acting as new habitat and artificial reefs. Such as providing new habitat for invasive species. Moreover, it is currently unclear whether offshore wind farms act as new habitat increasing overall fish abundance in the area, or if they simply act as aggregators that centralize already existing populations.

2. What percentage of New Jersey's economy is commercial fishing?
 - According to NOAA Fisheries, the New Jersey fishing industry is among the country's strongest, generating billions annually. The following data outlines the strength and importance of the commercial and recreational fishing industry in New Jersey. [The data is from the Fisheries Economic of the United States 2016](#)
 - Economic Value of Commercial Fishing in New Jersey
 - Sales: \$6,226,000,000
 - Income: \$1,413,000,000
 - Value Added: \$2,282,000,000
 - Jobs: 37,100
 - Economic Value of Recreational Fishing in New Jersey
 - Sales: \$1,752,000,000
 - Income: \$746,000,000
 - Value Added: \$1,168,000,000
 - Trips: 4,306,000
 - Jobs: 15,400

Topic Eight: Energy Questions

1. Is there additional loss of energy with the expected increase in extreme weather and precipitation in the offshore elements of the system?
 - There are currently no reports indicating that increases in the frequency and severity of extreme weather events would result in electricity loss. However, according to the U.S. Department of Energy, wind turbines, whether they are land-based or offshore, have built-in mechanisms to lock and feather the blades (reducing the surface area that's pointing into the wind) when wind speeds exceed 55 miles per hour. Basically, the wind turbine is essentially in "survival mode," waiting for the storm to subside, so it can safely go back to producing energy. If there are increased hurricanes and tropical storms, it can be expected that the wind projects would be locked to avoid damage. [See, U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy Wind Turbines in Extreme Weather: Solutions for Hurricane Resiliency \(2018\)](#) for more information on how extreme weather impacts offshore wind.

2. Is there a relationship between Deepwater Wind and Deepwater Horizons from the Gulf Disaster?
 - No. The Deepwater Horizon explosion of 2010 was caused by a wellhead blowout of an offshore oil and gas well by Transocean under contract from British Petroleum ("BP"). Deepwater Wind is one of several offshore wind projects proposed by Ørsted (Formerly DONG Energy), a Danish energy firm. While Ørsted does have ties to the offshore oil and gas industry, in 2008 the company began a transition to focusing entirely on renewable energy. Ørsted is currently in the process of divesting all fossil fuel operations and assets.

3. Is there any recognition of trend in the oil and gas industry moving more product by tug and barge and going through the NY/NJ area?
 - There has been no explicit mention of the increase in shipments of oil going in and out of the New York/ New Jersey region. However, several organizations including Clean Ocean Action have argued that more must be done to understand the impacts that offshore wind development will have on the marine transit industry, especially navigation risks. The Port of New York/ New Jersey is the third largest port in the U.S. and the largest on the east coast handling over 10,000 deep draft transits every year. Importantly, the Port of NY/NJ is the largest petroleum products port in the nation.

4. What is the percentage of electrical needs anticipated to be taken care of by offshore wind?
 - The 2019 New Jersey Energy Master Plan sets the goal of 100% clean energy by 2050. The Master Plan estimates that offshore wind will supply 23% of the state's clean energy in 2050.

5. Could we learn anything from offshore oil and gas rigs? At least in terms of the initial construction and pile driving.
 - Yes, there is information we can learn from offshore oil and gas developments that will be helpful to understand the construction of offshore wind energy and the impacts from introducing new hardened substrates into the marine environment. The lessons we can learn in terms of construction are limited based on the difference in foundation types used for offshore wind development and offshore oil and gas development. Offshore wind development primarily uses monopile foundations while offshore oil and gas developments use jacket foundations. We can learn lessons from the [Rigs to Reefs Program](#) which sees decommissioned offshore oil and gas rigs turned into artificial habitat for marine life.

6. Is COA actually at odds with inland alternative and anti-fossil-fuel advocates who have to deal with fracking, pipelines, coal, solar panel manufacturing consequences, and environmental justice to protect communities?
 - Clean Ocean Action stands with all advocates seeking to combat climate change by blocking fossil fuel projects. To address climate change seriously and meaningfully we must stop using fossil fuels. To that end, COA was instrumental in the fight against the Northeast Supply Enhancement Project, and is a member of the Empower NJ movement. COA advocates for a swift and just transition to a clean energy economy that will include responsible offshore wind development as well as aggressive implementation of energy efficiency and conservation strategies, which are the cleanest form of emission reductions.

7. Is our grid up to date enough to maximize energy sourced offshore?
 - No. Significant investment and improvements to our energy grid will be required to facilitate offshore wind energy. In New Jersey, Ocean Wind, the first offshore wind project approved by state regulators, is considering connecting to BL England and Oyster Creek Generating Facility. According to a NJBPU order from June 2019, the projected costs of the transmission upgrades would run from \$36 million to \$130 million, but could go as high as \$174 million. Other interconnection points have been considered for future development, all of which will require significant investments to accommodate the influx of energy. To learn more, see [Former BPU President Challenges NJ to Bring Affordable Wind Power to Customers by Tom Johnson on NJ Spotlight](#).
 - In fact, in general improving transmission systems is needed across the state, region, and nation. Improving transmission will help reduce energy costs as well as reduce the need for production through efficiency. The greenest and free energy is the energy that is not used—that is COA number one energy choice, and which we should all aspire.