



Offshore Wind Power

CP: Welcome to TechNJ - I'm your host, Craig Parker. As today marks the first day of American Wind Week, we'll be celebrating here at TechNJ by learning about offshore wind in New Jersey. On June 21st, 2019, the Board of Public Utilities unanimously granted the state's first award for offshore wind.

BPU Secretary: On the motion made by Commissioner Holden, Commissioner Holden?

MAH: Yes.

BPU Secretary: Commissioner Solomon?

DS: Yes.

BPU Secretary: Commissioner Chivukula?

UC: Yes.

BPU Secretary: Commissioner Gordon?

BG: Yes.

BPU Secretary: President Fiordaliso?

JF: Yes.

(applause)

CP: But make no mistake about it - getting to this point was far from a breeze. This is Kelly Mooij, the Deputy Director of the Office of Clean Energy at the New Jersey Board of Public Utilities.

KM: New Jersey has had an interest in offshore wind for nearly a decade now. We actually signed into law in 2010 OWEDA, as we call it, The Offshore Wind Economic Development Act. Among other things, it directed BPU to start the industry off through writing rules and establishing a project application. Despite the passage of OWEDA in 2010, New Jersey's offshore wind program lay dormant for the past eight years, until Governor Murphy took action and signed Executive Order number 8, which he did within the first couple of weeks in office, to make sure that we kick-started our wind industry. The last

18 months have been breakneck as we develop tools and establish the program issue to solicitation and finally made this historic record-breaking award.

CP: Before we get too deep into the exciting new developments in offshore wind in New Jersey, let's take a step back and learn a bit more about this topic.

KM: So windmills have been around since before the 9th century, and for about a thousand years they didn't change in technology at all. But we've seen an explosion in innovation and design related to increasing our capacity, and the amount of energy that we can get from windmills. More wind turbines are being designed, rotors are getting larger, drive trains are getting more efficient. But, most important, is that we're seeing bigger turbines. So, we currently have turbines onshore of 6 megawatts and offshore developed of 12 megawatts, but we're expecting that it's possible to see 20-megawatt turbine off the coast by 2030. A bigger turbine generally equals more energy, bigger rotors equal more energy, and that's what we're really looking for - things in terms of design and innovation related to ensuring that we're getting the most energy capacity out of each swivel of the turbine.

CP: New Jersey is best known as the Garden State, with our fertile farmland for growing. We also are strategically situated with the perfect natural resources for a different kind of farm.

KM: New Jersey is blessed with a hundred and thirty miles of coastline. We are geographically located and geophysically we have the attributions of being incredibly well suited for strong winds that are steady. We're also in a location where we're very close to a lot of energy usage, so we're well suited to supply substantial quantities of clean energy to New Jerseyans. Governor Murphy set a goal of 50% renewable energy by 2030, and an offshore wind-specific goal of 3500 megawatts.

CP: For our listeners who may not be up to speed on power lingo, a megawatt is a unit for measuring power, and is equal to one million watts. To put this in perspective, one megawatt is equivalent to the energy produced by 10 automobile engines, so imagine what thirty five hundred megawatts would be like...

KM: The 3500 megawatts of offshore wind will be the equivalent of removing 2.3 million vehicles off of the road. The 3500 megawatts of offshore wind is expected to provide nearly 25% of New Jersey's electricity needs over the course of a year. It can also generate up to or over 1.5 million homes worth of electricity.

JF: New Jersey is going to finally be open for business as far as offshore wind is concerned.

CP: Back on June twenty first, NJBPU Board President Joe Fiordaliso had this to say about New Jersey's offshore wind initiative.

JF: It should be understood that we're looking for competition. We're looking for everyone who is interested in developing offshore wind to participate in the second and third solicitations, because it's important as far as price, and the competitiveness only helps the ratepayer.

KM: We've already seen that the cost of offshore wind has decreased significantly, particularly seeing those benefits in Europe. The ocean wind project is expected to create 15,000 jobs, and generate approximately 1.17 billion in net economic benefits, and that is only with an estimated monthly bill increase to residential rate pairs of \$1.46.

CP: Commissioner Mary Anna Holden adds her views on the offshore wind solicitation as well.

MAH: It's the largest solicitation United States, it's the -- really the first on the east coast, and we're going to be the leader, and that's exciting because, you know, it's going to bring a lot of jobs as well as a supply chain, and will be the center for it.

KM: New Jersey Economic Development Authority partnered with the Business Network for Offshore Wind, which is a nonprofit focused on accelerating the US offshore wind industry, to create the New Jersey offshore wind supply chain registry. New Jersey companies can sign up for this free online portal, and indicate their interest in ability to supply components and services for US offshore wind products. It also provides a comprehensive and searchable list for companies seeking to purchase from and partner with New Jersey-based firms.

CP: This is BPU Commissioner Diane Solomon.

DS: Today we undertake to provide reliable service in a way that causes the least environmental harm. Nobody disagrees or could reasonably disagree with that pursuit. In doing so, we have an obligation to our residents to be sure that we are being both economically and environmentally responsible.

KM: Overwhelmingly, the environmental impacts are positive from offshore wind. The project will help New Jersey reduce its greenhouse gas emissions, which contribute to climate change. The project is also designed and sited to minimize impacts on natural resources, and the project has an environmental protection plan to ensure that we make sure that we're minimizing any of the impacts that may happen. Interestingly, this project is also sited 15 miles offshore, which will reduce visibility from the shore as well as aviane impacts. New Jersey is an incredibly important area for migration, but birds migrate right along the coast, and so the further out you put a wind turbine, the less impact there is in terms of aviane impacts. More importantly, there's also significant strong and steady winds further offshore.

CP: Besides the obvious benefits of offshore wind in terms of sustainable energy, environmental impact and ratepayer benefits, there are plenty of other positives as well. Here's BPU Commissioner Bob Gordon...

BG: Offshore wind can become a major source of power in the state, and will be a key element in our plans to be carbon-free by 2050, but offshore wind can also be a key driver of our future economy. I can foresee hundreds of turbines off The Jersey coast that can provide the anchor for a Mid-Atlantic Network that stretches from Long Island to Maryland. As we begin to work on the second round of solicitations, I believe we should seek to collaborate, rather than compete, with our neighboring states.

One way we can do that is by developing a regional transmission system offshore - what some of called of a backbone transmission system - that can connect the numerous individual wind projects along the coast to the onshore electric grid. By coordinating our offshore wind development efforts across the Mid-Atlantic States, we can maximize the economic benefits for all. We can create the critical mass to induce the major turbine manufacturers, and other players in the supply chain, to establish facilities in our region. Our state can become the Hub. We can create a whole new industry and thousands of jobs for New Jersey and our neighbors.

KM: We have a real opportunity in terms of the job market in New Jersey to develop what we estimate is 15,000 jobs for the state of New Jersey, and we need to be able to develop that workforce first right here to have those benefits, so is everything from individuals who are going to help to actually design the projects, to those were going to do operations and maintenance as well. We expect that we are going to see the labor and workforce development continue to grow and expand as we continue to up our goals related to offshore wind, and work to develop those additional solicitations beyond the large project which we have just announced the award of. Offshore wind provides a great opportunity for our residents in terms of education as well. We're at the forefront of being able to develop a new industry, and with that new, good-paying jobs for all of our residents and students were coming up through all of our wonderful institutions within the state. We have an incredibly highly-educated workforce within New Jersey, and we're looking forward to tapping into that, and building upon it in order to build this industry.

CP: Here's Commissioner Upendra Chivukula, reflecting on his history with offshore wind.

UC: I was the original author of The Offshore Wind... it is ORECs, Offshore Wind Renewable Energy Certificates, and it's called OWEDA - Offshore Wind Energy Economic Development Act in 2010, and in 2018, it's quite exciting to me, and I see things are happening in 2019. It's like seeing the baby grow up into a young adult, and I'm so excited about it.

KM: New Jersey has a long history of innovation, back from our great inventors all the way forward till today. Offshore wind is a key component to developing New Jersey's innovation economy. The development of offshore wind projects will drive the creation of an entirely new industry for New Jersey. This project alone will create an estimated 15,000 jobs in New Jersey, and is anticipated to generate approximately 1.17 billion in net economic benefits. Importantly, the rapid growth of the industry is a critical step in the global response to the climate crisis, and sets the stage for a cleaner future for New Jersey residents as we work to reduce harmful emissions. We are right here at the cusp of making a change, not only in terms of the way that we're generating our energy, but also in terms of taking care of the citizens of the State of New Jersey. We can't say enough how important it is that we have been working with all of our sister agencies, and under the Governor's leadership, to ensure that we are taking important steps to address the global climate crisis.

CP: We've seen so many innovations and technologies come out of New Jersey - Einstein, Edison, Stevens, and too many more to list. We're problem solvers. We're the Innovation State, and now, on the horizon, is the new industry that will have local and global impact on climate change. That's all the

time we have for today. I'd like to thank Kelly Mooij for joining us to speak about offshore wind in New Jersey in the first of a series where TechNJ explores Green Technology. Don't forget to rate us on iTunes and Google Play. We love to hear your feedback, so please email your thoughts and questions to podcast@tech.nj.gov. I'm your host, Craig Parker, and thanks for listening.