

Public Comments for Atlantic Shores Offshore Wind NJ (ASOWNJ) Construction and Operations Plan, Docket No. BOEM-2024-0008

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RE: Public Comments for Atlantic Shores South Wind Development Project

Defend Brigantine Beach, INC and Downbeach a nonprofit 501C3 organization, represents thousands of citizens who advocate for sound effective alternative energy initiatives and projects that have minimum impact on the natural and human environments. Upon release of the Atlantic Shores Offshore Wind NJ (ASOWNJ) Construction and Operations Plan (COP), Defend Brigantine Beach reviewed the various impact analyses. The final product falls well short of what is required of a COP. Below, we describe the various deficiencies of the COP and identify potential project effects that require new or additional study, disclosure, and mitigation.

First, we want to put on the record that Defend Brigantine Beach agrees with and supports the public comments submitted by Save Long Beach Island, INC as well as comments submitted by Clean Ocean Action to the ASOWNJ COP. We are effectively incorporating their comments into our public comments.

Second, given the lack of time given for a reasonable member of the public to read and assess all the pages of information in the COP, its appendices; the lack of time to read pages of cited scientific studies used to make decisions on the projects impact which the general public does not have access to without paying for the documents on research websites; the lack of a COP document in language of minority population; the lack of public meetings in areas that will be negatively impacted in Atlantic County, we, therefore, want to put on the record that as we identify other issues in the COP, or other related documents, we reserve the right to provide public comment to BOEM or other agencies overseeing this project and/or raise legal objections concerning those issues in addition to issues raised in this public comment document. We are also officially requesting at least a six-month extension of the public inspection and comment period for these and other reasons mentioned in this document. Our opinion is that the level of deficiencies in the current ASOWNJ COP and COP process are so high that the report should be disqualified from being used in the permitting process. Based on the deficiency of rigorous information included in the COP, the Wind Developer and government agencies need a much time to complete an adequate COP document. It is obvious that the government agencies and wind developers are rushing through the COP with an objective of checking the box without any consideration of answering the numerous concerns presented throughout the entire Atlantic coast offshore wind development process.

Defend Brigantine Beach, INC, find major deficiencies in the ASOWNJ project COP for reasons including but not limited to the following:

- The project impacts in the COP dwarf the true impact to Brigantine, Atlantic City and surrounding communities for the reason that these communities will be surrounded by other projects that are adjacent to each other including Atlantic Shores South, Atlantic Shores North, Ocean Wind 1 and Ocean Wind 2. The impact of these combined projects, including 550 wind turbines with a height of up to 1040 feet, with three of the projects starting less than 9 miles off the coast is unprecedented and not considered in the COP other than in the discussions of a general overall cumulative impact. The combined impact of these specific projects should be examined in rigorous detail and conclusions should be presented to the communities of South Jersey.
- The project creates a dominant visual effect on a viewer, amplified by the rotating blades which may cause beach goers to turn away. The COP fails to address the impact of the blade rotation; stationary turbines use inappropriate visibility frequency data from an inland site.
- The COP fails to demonstrate that the audible and infrasonic noise to persons at the shore is not expected from turbine operation, exceeding the New Jersey night time residential standard of 50 decibels.
- The COP fails to address that the project will reduce breeze, about 26%, wave, and higher temperature and humidity at the shore, are expected based on a BOEM study for NY; no study done for NJ.
- The COP fails to demonstrate that the project will not result in a combined effect of visible and rotating turbines, audible noise, reduced breeze, and higher air temperature on the shore experience and economy, which will have a major impact to the cumulative shore experience.
- The COP fails to demonstrate that the project will not pose unacceptable threats to federally-listed endangered species; cause environmental damage reaching across the globe

- The COP fails to address the Recent Whale and Dolphin Deaths, notwithstanding evidence of connection with the vessel surveys being conducted in SaveLBI's recent study and Rand Report resent study on noise impact during pile driving.
- The COP fails to address the project's significant and long-lasting impacts on already at-risk, minority and underprivileged populations in Atlantic City and other coastal towns in New Jersey, United States and abroad.
- The COP fails to rigorously review the project's harm to the Piping Plover, via the risk of crossing the wind complex to get to nesting grounds in Brigantine.
- The project will generate unacceptable air quality impacts in Atlantic County which has one of the lowest levels of air pollution in NJ.
- The COP fails to adequately address the project's interference with defense-related and other radar.
- The project radically disturb long-standing uses of the outer continental shelf, in violation of the Outer Continental Shelf Lands Act (OCSLA) .
- The COP fails to demonstrate that the project will not impose navigation risk to a unique NJ situation with turbines close in and farther out in the NY Bight-will cause the channeling of all commercial and military vessels into a 9-mile-wide strip between the NJ lease area and the Hudson South area, which also happens to be a migration corridor for the endangered right whale. Marine radars potentially compromised by turbines on both sides.
- The COP contains no analysis of hurricane risk to turbine structures.
- The COP lacks analysis of decommissioning impact, even for a single turbine as illustrative, nor even the technical feasibility of doing it, and no binding, enforceable, penalty mechanism for the European companies to do it when the time comes.
- The COP fails in its stated purpose of reducing greenhouse gas (GHG) emissions and stemming climate change and the Climate Change Benefit, is often cited but never specified.
- The COP fails to demonstrate that the project will not significantly drive up the cost of electricity for ratepayers in New Jersey.

Issues with BOEM Agency and Process

The Department of the Interior has done a great disservice to the BOEM agency. The agency is underfunded and understaffed. The team assigned to the Atlantic Shores South Project has demonstrated that they are ineffective in carrying out their roles and responsibilities. Per the BOEM ASOWNJ COP, In Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad, issued January 27, 2021, President Biden stated that it is the policy of the United States "to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach....." The BOEM's lack of funding and resources for educating the public on offshore wind projects violates the Executive Order, unless the intent was to encourage rubber stamping of permits by government agencies to get the "green energy" projects implemented regardless of the lack of any rigorous process to evaluate the cost to the environment and economy.

The United States Government has made provisions to provide billions if not trillions of dollars to Offshore Wind developers and other industry related private corporations for Offshore Wind projects, but the

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Government has failed to provide the necessary funding and resources for local government and community education and input for the offshore wind projects.

Real Estate investors and other business investors, home buyers and other affected parties are not aware of the project or the impact of the project and anticipated proposed offshore wind projects will have in the future of their current decisions. Real Estate and business investors, business owners, home buyers and homeowners are making decisions without sufficient knowledge of these projects which in many areas will have a major impact on their future. Current homeowners and businesses lack sufficient knowledge of the projects and proposed offshore wind projects to make decisions on the future of home ownership and business ownership.

Based on interaction with a large sample of community members and business owners, more than 50% of them are unaware of the project or future planned proposed projects and 80% of community members and business owners have misinformation including basic understanding of the location and visual impact of the ASOWNJ project.

The information presented in the few public meetings offered by BOEM was nothing but a cursory review of the process and documents. Critical information in the documents and appendices was not even mentioned and some information was misrepresented. The opportunity to ask questions in the zoom public comment meetings was limited because if a BOEM representative answered the question incorrectly or insufficiently, there was no opportunity for the participant to respond with a follow up question.

The process lacks adequate face to face meetings with each shore community, other affected communities, and impacted community groups. The BOEM team lacked any useful presence in communities. There was no on-site physical examination of communities, no understanding of values and lived experiences. Decisions were made about impacts based on impersonal and often irrelevant desktop studies. The process lacks engagement with minorities, underprivileged and protected populations.

The process lacks any effective process to engage with second homeowners. 37% of New Jersey shore town homes are owned by OUT-OF-STATERS. When asked about sending postcards to primary addresses which are easily obtained from County tax record systems, a BOEM team member said that they did not have the budget to do this. Downloading a tax system file and sorting second home owner property information costs nothing. Printing and mailing post cards costs less than 60 cents a piece and for second homeowners in Atlantic County the total cost would be less than \$10,000.

The process lacks any funding for local communities to hire experts to guide them through the process. BOEM relies on local governments to inform or educate their communities about the projects. It is not a requirement or job of our local governments to do this – it is the requirement of BOEM to educate the public. Local government lacks the knowledge or resources to educate the public. An advertisement in a few papers along with press releases were used to notify the public. It is not the media's responsibility to print press releases or post them on social media. BOEM can't guarantee that information in press releases is reported correctly.

The timing and number of public information sessions is totally inadequate for community members to grasp an understanding of the information in the documents and process. BOEM has failed to use any measurement

to determine the effectiveness of their public outreach efforts. What are the counts of citizens participating in the meetings and public comment sessions compared to the millions of citizens this will impact? What are the counts of disadvantaged or protected classes of citizens attending public input sessions? What actions are taken if the participation fails to meet the criteria for evaluating effective public outreach.

The BOEM Website for offshore wind projects is confusing and disorganized. Reports are on some pages and not on others. It is difficult to find information. This further adds to the public's confusion and inability to do a rigorous review of the information.

Many of the offshore wind developers and government agency studies are outdated, lack external validity to the Jersey Shore, and irrelevant. Conclusions and results were misinterpreted or misrepresented. **Wind developers and government agencies made no effort to repeat the public surveys based on new project specifications such as number, size and location of turbine used in scientific studies regarding tourism, real estate, and recreation. Visual impact surveys and impact on tourism and property values should have been repeated as soon as the 2022 visual simulations were released. It is now 2024 and updated surveys and studies have still not been completed.**

BOEM claims that the 2009 NJ Energy Task Force was an effective community engagement and public input process. On the BOEM website there is a Task Force roster of local officials. In contrast to this long list, based on the minutes of the meetings posted on the BOEM website, there were few to no local officials who participated in the actual meetings. The participants were employees of government agencies and wind developers who observed the meetings. The information provided to the task force and used in decision making was based on wind turbine specifications that were far different than the wind turbine specifications now approved for the ASOWNJ project. Some of the major differences that are significant are the power, blade rotation speed and height of the turbine which impacts visual quality, real estate values and tourism, fishing industry, and the benthic and atmospheric conditions. Therefore, decisions were made on misinformation. The decision of the NJ lease area locations was based on bad information.

The lease area maximum distance from the shore was based on a 2004 report completed by a wind energy company using a 100-foot depth as the reason. This maximum distance was never adjusted throughout the wind energy area location identification process and the 100-foot maximum depth remained a key criterion in every study. In the May 2023 public meetings, BOEM team members stated that the lease areas could not be adjusted but it is now evident that the lease areas were identified using misinformation. If the lease areas can't be changed, the wind turbine specifications being used to determine them should not be allowed to be changed either. There is no explanation of how the wind turbine "models" were changed or who had the authority to make the changes. What was the process used to provide the public the specific information about the change in the size of the wind turbines?

Based on the deficiencies described above, at a minimum, all studies and surveys must be updated using the actual number, distance and areas, and size of wind turbines in the ASOWNJ project.

ASOWNJ Project Purpose Based on Misinformation and Legally Inadequate

In Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad, issued January 27, 2021, President Biden stated that it is the policy of the United States “to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers environmental justice; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure.”

The COP describes the Project’s purpose as the need to follow the President’s Executive Order 14008, “Tackling the Climate Crisis at Home and Abroad”. As the Supreme Court determined in *West Virginia v. EPA (2022)*, the Executive Branch has no authority to regulate carbon dioxide without a law passed by Congress. As the purpose of the offshore wind project is to reduce carbon dioxide emissions the Executive Order is irrelevant and these comments should be removed from the COP.

To be legally adequate, the COP and future EIS must explain how the proposed Action will achieve its stated purpose. In ASOWNJ’s case, the COP indicates that the Action is being proposed because there is “a worldwide climate crisis”, and because the Action will result in a net reduction of carbon dioxide in the atmosphere. But the analysis stops there. How exactly will this CO2 reduction result in the lowering of worldwide climate temperatures? There is no discussion of this issue, nor any analysis of it whatsoever. The EIS appears simply to assume that reduction of CO2 resulting from this action will somehow reduce the "impacts of climate change". Does this mean a reduction of atmospheric temperature? The elimination of "extreme weather"? If so, by how much? What is the specific point? Also, does this mean that once the offshore wind project is operational, fossil-fuel generated electricity will be removed immediately from the grid? If the amount of fossil fuel generated electricity will not diminish as the result of the project, then it would appear that the project’s purpose is not so much to reduce greenhouse gas (GHG) emissions, but to provide a cleaner energy source for new economic growth that would not occur but for the project.

In other words, the project will have no climate change benefit at all; it will merely enable growth with less additional GHG emissions than would be the case if the growth was supported solely by fossil-fuel generated electricity. The EIS must explain exactly whether and how the project’s much-touted climate change benefits will be realized in light of the significant economic growth the project is supposed to generate. The US government's own leading climate model, that adopted by the International Conference on Population and Climate Change (ICPCC), is called “Model for the Assessment of Greenhouse Gas Induced Climate Change” (MAGICC). It was developed by the National Center for Atmospheric Research. The model predicts that even if all human-caused CO2 in the US, from every source, including transportation, electrical generation, industry, agriculture, and animal exhalation - all of it - were reduced to zero tomorrow, there would be no measurable improvement in climate temperature by the year 2100. A NEPA-compliant EIS must discuss the relationship between the Action and the major environmental purpose underlying it. The EIS fails to do so, and therefore its justification for the action is arbitrary, capricious, and legally inadequate.

As argued in this document, the ASOWNJ COP fails to demonstrate that this project reduces pollution in every sector of the economy, increases resiliency to the impacts of climate change, protects public health, conserves

our lands and waters and biodiversity, delivers environmental justice, nor spurs a “net impact” of increased jobs.

The following statement is from Dr. Roger Pielke, Jr who is a well-known climate scientist and public policy expert. He warns the public and elected officials of the bad information they are using to make enormous, life-changing decisions for the future of our country.

STATEMENT OF DR. ROGER PIELKE JR. to the COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS of the UNITED STATES SENATE HEARING on 21st Century Communities: Climate Change, Resilience, and Reinsurance Dirksen Senate Office Building 538 20 July 2021

- 1.** At the outset, I emphasize explicitly and unequivocally that human-caused climate change is real, that it poses significant risks to society and the environment, and that various policy responses in the form of mitigation and adaptation are necessary and make good sense.
- 2.** However, the reality and importance of climate change does not provide a rationale or excuse for the evasion or avoidance of meeting basic standards of research integrity in the provision of scientific advice to policy makers.
- 3.** Currently, policy makers are being badly misled in a number of crucial areas related to climate science, impacts and economics. Specifically:
 - o The climate scenarios that underlie much of climate research are badly outdated and no longer offer insight to plausible futures;
 - o Economic losses associated with extreme events are routinely attributed to changes in climate, while changes in society and its exposure and vulnerability – which also influence future risks -- are largely ignored;
 - o Trends in the incidence of extreme weather events in the United States and around the world are far more nuanced than discussions found in the media and in politics.
- 4.** Shortfalls in robust science advice on climate are more than just an academic issue – they also show up in important policy contexts, such as:
 - o Proposals for “climate stress testing” in the global and national financial systems;
 - o The estimated “social cost of carbon” of the Biden, Trump and Obama administrations;
 - o Proposed Congressional legislation to address financial system risks related to climate change.
- 5.** Climate change is too important to allow shortfalls of scientific integrity in science advice to persist. Congress should enhance its oversight of the U.S. Global Change Research Program and its National Climate Assessment to ensure that the scientific advice that it receives is upto-date and accurate.

On June 21, 2023 at another Senate Budget Committee, Dr. Pielke, Jr provided additional commentary regarding climate policy decisions based on misinformation:

- 1.** The climate scenarios that are currently prioritized in climate research, assessment and policy are badly outdated. Carbon Dioxide emissions in the real world are already at a level far less than those projected in the most commonly-used climate scenarios, and that gap between scenario assumptions and reality in only getting wider.
- 2.** Specifically, the most used climate scenario is called RCP8.5 which assumes that all global energy consumption will come from coal. That is obviously wrong. The real world is actually tracking below a RPC4.5 scenario which represents a 2100 global temperature increase of 2.9 degrees C.

3. This matters because important policy guidance relies on these outdated scenarios. For example,
 - The 2022 White House White paper titled, “Climate Risk Exposure: An Assessment of the Federal Government’s Financial Risks to Climate Change” used the RCP8.5 scenario to represent where we are heading, the RCP4.5 scenario to represent successful climate policy, and the difference between the two to represent the benefits of mitigation.
 - A widely cited 2022 paper defending the use of the most extreme RCP8.5 climate scenario is notable because of its author’s failure to disclose a financial conflict of interest. They were funded by a major global consultancy that relies heavily on RCP8.5 in its business promotion and services.
 - So far in 2023, about a dozen studies have been published every day using the outdated RCP8.5 scenario, according to Google Scholar.
4. Concerns expressed about misinformation are sometimes weaponized. One reason for that is that climate change is big business. That means it is essential that everyone follow well-established standards of science and integrity – and this includes those funded by fossil fuel interests, renewable energy interests and in fact all financial interests.
5. Partisans may believe that the rules apply only to their opponents. They may argue over which “side” is worse. However, bringing accurate information into the policy process means principles of scientific integrity must apply to everyone.

The difficulty of battling climate change is presented in the graph below. According to the World Data Lab, GHG emissions will total 58 Gigatons (GT) in 2022. The Paris Agreement target is to maintain the temperature at or below 1.5 degrees C above pre-industrial levels. The required level in GHG emissions is represented by the bottom line on the graph. Crossing this 1.5 degree C threshold risks unleashing far more severe climate change effects on people, wildlife and ecosystems.

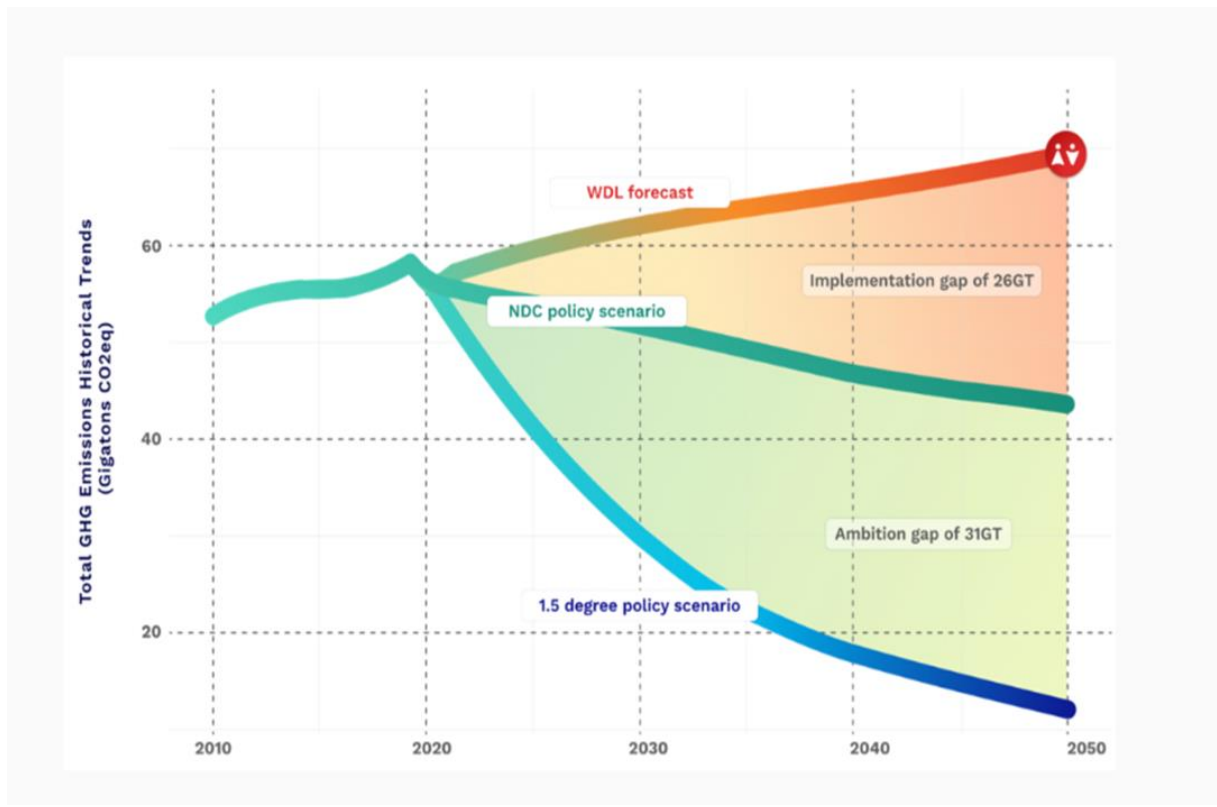
The middle line is the National Determined Contributions (NDCs) which is the level of GHG emissions if annual emission reduction commitments by countries are achieved. Countries will need to reduce an ADDITIONAL 31 billion gigatons of GHG over and above their NDCs to achieve at or below Paris Agreement target. NDC policy commitments were not achieved in both 2021 and 2022.

The top line is the projection of global emissions based on current economic growth, demography, and continued emissions intensity trends. Example of this wicked problem: If the emissions were eliminated from all 1.5 billion cars in the world, annual GHG would be reduced by only 6.9 GT. Meanwhile, it is projected that annual global airline emissions will increase from 9 GT to 27GT by 2050.

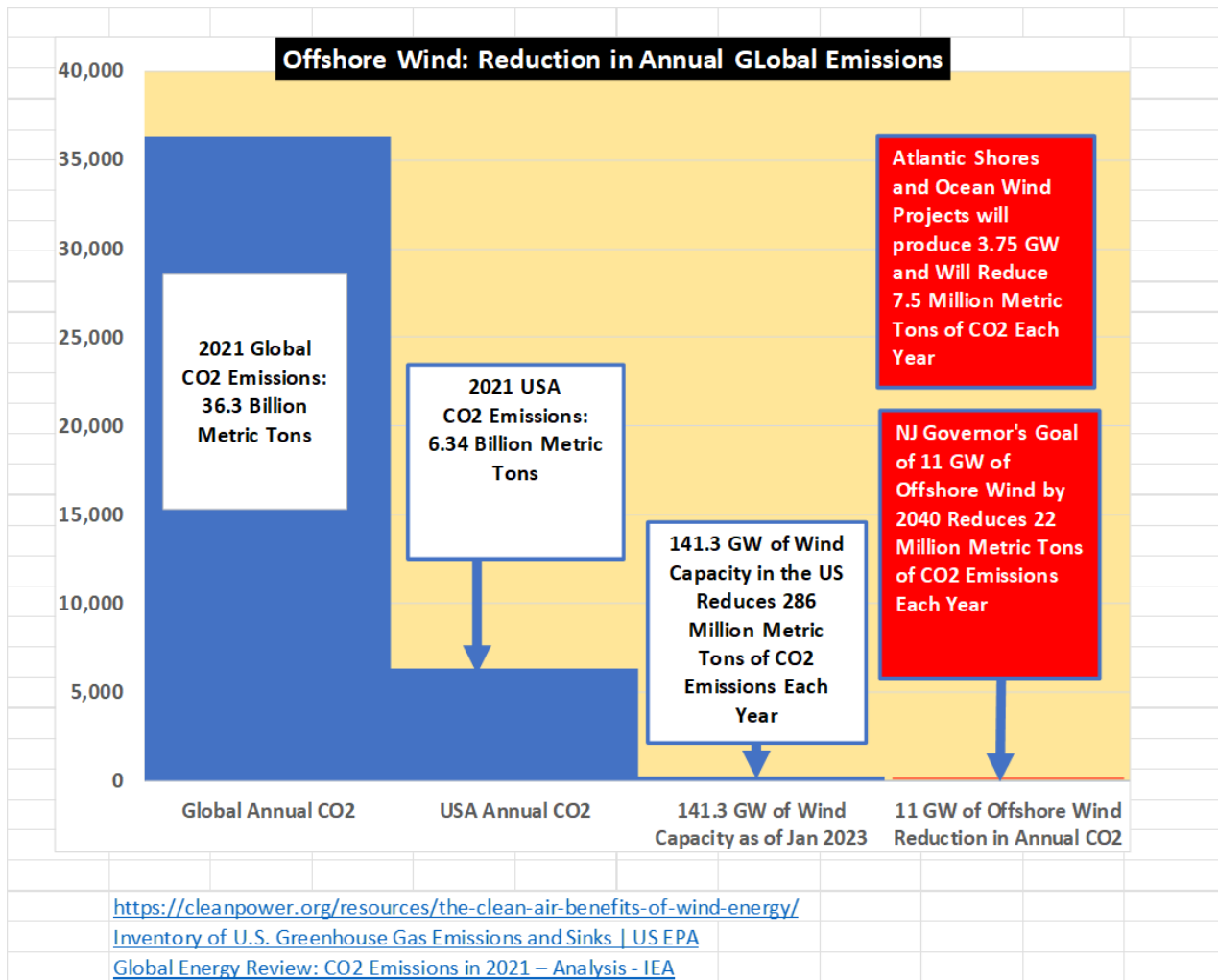
[Tracking emissions by country and sector \(brookings.edu\)](https://www.brookings.edu/research/tracking-emissions-by-country-and-sector/)

Worse Than Anyone Expected’: Air Travel Emissions Vastly Outpace Predictions - The New York Times ([nytimes.com](https://www.nytimes.com))

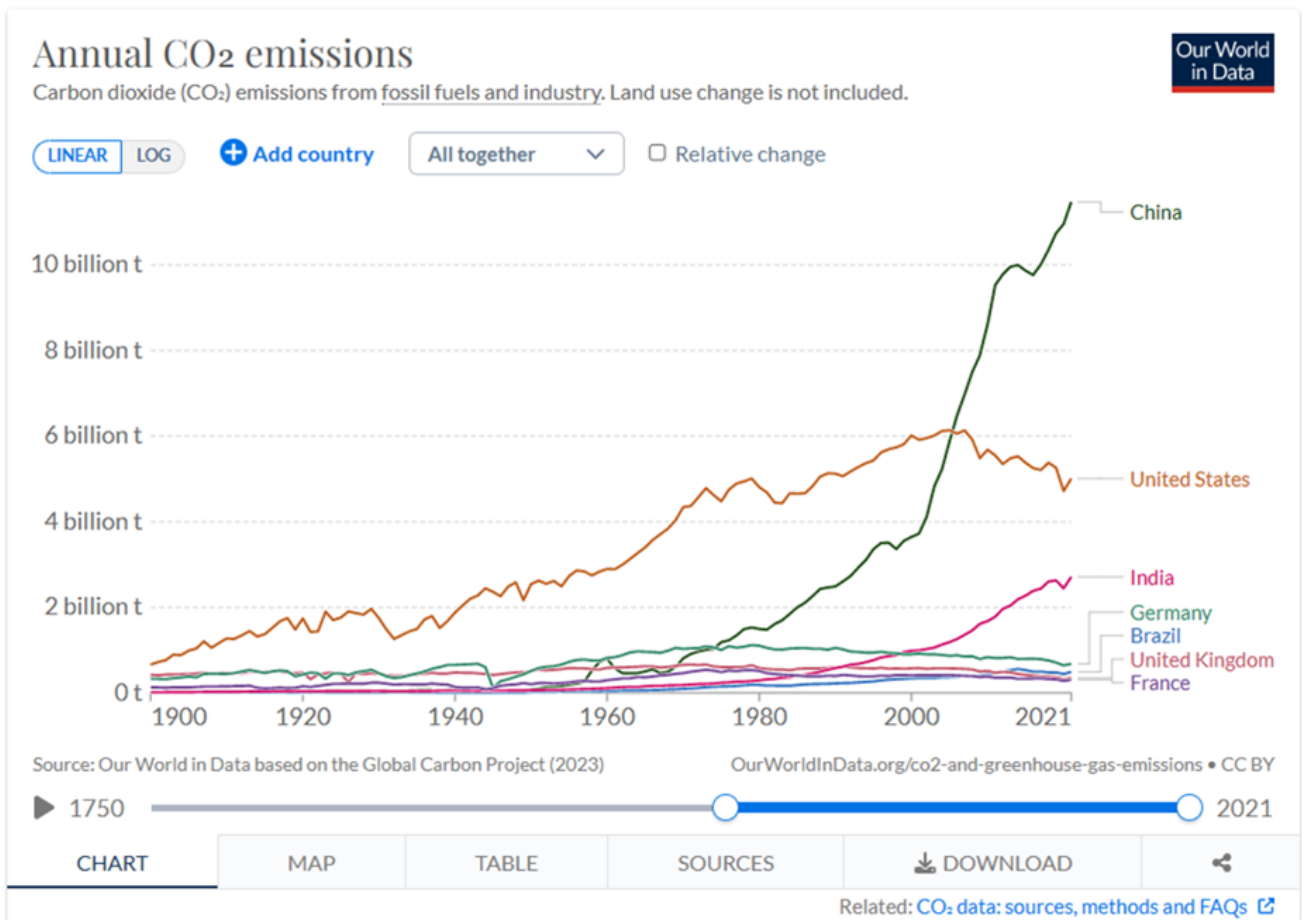
Graph Source: World Data Lab, [World Emissions Clock](#)



The ASOWNJ's COP refer to the impact that the project will have in measurement of "emissions/car." The description of the reduction has no relevance to the global problem of climate change and is nothing other than an alluring marketing catch phrase. If BOEM was more rigorous in their analysis, they would have answered the question of how this would impact total global emissions. The chart below shows the impact of offshore projects off the New Jersey and based on NJ Governor's goal of 11 GW by 2040.



The Impact of CO2 Emissions in China and the Rest of the World is global. Our Ocean will continue to rise, flooding will continue, and our severe weather events will persist for all areas of New Jersey that are prone to these conditions. Neither BOEM nor Atlantic Shores LLC guarantee that the ASOWNJ project will stop our ocean from rising, stop our flooding and reduce severe weather events in areas prone to these conditions.



In

A 2018 Analysis by First Street Foundation found that New Jersey homes have lost a combined \$4.5 billion in property value since 2005 because of sea level flooding. There is no information in the COP, stating that the billions of tax payer and rate payer money on the ASOWNJ project along with future planned projects will solve the sea level flooding in New Jersey.

2021 the US Army Corps of Engineers released, New Jersey Back Bays Coastal Storm Risk Management Draft Integrated Feasibility Study and Tier 1 Environmental Impact Statement in which they stated that a paradigm shift was needed to implement industrial flood control, including proposed storm surge barriers, cross bay barriers, floodwalls, and levees to prevent bay flooding from rising sea levels and the elevation of 18,000 structures. Dr. Robert Kopp, et al. from Rutgers University in “The Future Sea Level in New Jersey” states,

“It is critical that the state and coastal communities develop resilience plans that are robust to the range of possible futures the state might face. A regional approach requires increased communication, provides opportunities for collaboration and facilitates the pooling of resources to complete large-scale projects that are infeasible for individual entities.” <https://impact.rutgers.edu/the-rising-tide/>

Rutgers University’s solutions are relocating development away from the shore and/or exposed areas,

Blue Acres program, accommodating natural processes by continuing occupancy and adjusting to the hazard (houses on pilings), protecting existing infrastructure in place, green infrastructure such as local soils, plants, and animals such as oysters, dredging of clean sediment accumulated in navigation channels to fill up drowning wetlands, stormwater green infrastructure, porous paving.

The COP's Benefit Claims Lack Rigorous Analysis and are Based on Misinformation

Per BOEM, "As assessed in Chapter 3, Affected Environment and Environmental Consequences, BOEM anticipates that the majority of the potential adverse effects associated with the Proposed Action would occur during construction and installation activities and would be short term in nature and minor to moderate in severity/intensity. These effects would cease after decommissioning activities. In assessing the relationships between short-term use of the environment and the maintenance and enhancement of long-term productivity, it is important to consider the long-term benefits of the Proposed Action, which include:

- Promotion of clean and safe development of domestic energy sources and clean energy job creation;
- Promotion of renewable energy to help ensure geopolitical security, reduce GHG emissions to combat climate change, and provide electricity that is affordable, reliable, safe, secure, and clean;
- Delivery of electric power to the New Jersey electrical grid to contribute to the state's renewable energy requirements; and
- Increased habitat for certain fish species.

These conclusions are based on misleading data, outdated studies and omission of key scientific studies and expert opinions. The process used to make these conclusions lacks rigorous review of the negative impacts to the economy, ecology and environment, marine mammals, natural fish habitat, and birds. There is no substantiation for the claim of affordable energy and reliable energy.

The COP fails to explain in its calculation of reduced emissions, whether increases in offshore wind replaces nuclear, coal or natural gas produced energy. The assumption will have a significant impact on the reduction of emissions.

The total cost of delivery to the grid is not even included in the PPA energy price agreements with the NJ BPU. The cost burden on rate payers is open-ended. The COP does not address issues with the PJM Grid. The Center on Global Energy Policy is begging for money to overhaul of the PJM grid needed to effectively operate with offshore wind. In NJ and MD.

"These federal initiatives come at a critical time to support state-led efforts. Both Maryland and New Jersey are part of the same mega electricity market, known as PJM Interconnection, which runs a combined electric grid that stretches across all or part of 13 states and the District of Columbia. State policy makers occupy a special position in PJM, with the ability to demand inclusion of transmission

projects, considered necessary to meet state public policies, directly into the PJM transmission expansion process. Transmission projects sponsored by state actors can bypass time-consuming hurdles, such as battles over cost allocation and siting, and take advantage of PJM's competitive transmission solicitation process to achieve better prices for consumers..... Still, significant barriers remain to actually building an offshore grid. First, offshore wind transmission solutions aren't cheap. The type of multistate offshore transmission highway envisioned in the DOE's groundbreaking report is likely to run into the tens of billions of dollars, significantly more than any single state—or even a collection of states—is likely going to be willing to fund on its own. Federal policy makers will likely need to identify sources of funding to make a transmission backbone a realistic possibility."

<https://www.energypolicy.columbia.edu/an-offshore-wind-super-grid-for-the-east-coast/c>

The COP does not consider the actual guarantee of jobs presented in the PPA agreements with the NJ BPU. According to the PPA solicitation 1 and 2, the GUARANTEE of jobs by the wind developers is minimal. Jobs related to Salem County wind port and Paulsboro facility are heavily funded by tax dollars and NJ rate payers. This is nothing more than a transfer of money in the form of increased taxes and utility rates from residents and businesses to the pockets of union members.

Recent NJ legislation provided more money for the Orsted Wind Developer on the backs of the US citizens. The fourth solicitation for offshore wind allows rebids from offshore wind companies who already have Power Purchase Agreements. This is a clear violation of OWEDA where ratepayers are responsible for majority of the risk of offshore wind costs. The precedent has been set to continue to find new sources of funds and changes in processes to accommodate offshore wind companies at the expense of the rate payers and taxpayers.

<https://www.inquirer.com/news/nj-offshore-wind-tax-credits-whales-20230630.html#:~:text=The%20act%20allows%20for%20a,used%20by%20offshore%20wind%20developers.>

The benefit of delivery of electric power to the New Jersey electrical grid to contribute to the state's renewable energy requirements is a misleading circular argument. The major reason that NJ was able to increase its renewable energy goals (by Executive Order) for offshore wind over the years is because the wind turbine size was increased to produce more MW of energy, thus the increased capacity of the wind turbines was the actual impetus for increasing the offshore wind goals in the first place.

The discussion excludes the cost of intermittent, weather dependent energy and the backup needed from fossil fuel or batteries. Offshore wind will require dual energy systems or even more expensive battery systems.

Global Mining and Air Pollution Impacts.

It is now common practice for federal regulatory agencies, such as BOEM, to describe how a proposed rule and federal action will allegedly benefit peoples in foreign countries, and then include those alleged benefits into the legally required calculation of the domestic benefits, impacts, and costs of the proposed action rule or

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action in question. In this case, the Biden Administration has touted the global benefits of BOEM's extensive offshore wind energy program, claiming it will reduce greenhouse gases (GHGs) and slow climate change.

The COP, however, does not address the global cost/impact side of the ledger, even though such indirect effects must be studied. (See 40 C.F.R. §§ 1502.16, 1508.8, 1508.25.) In the case of ASOWNJP, this would require accounting for air quality and other impacts on the wider world resulting from the mining, refining, manufacturing, and transporting the huge amounts of rare earth elements and critical minerals vital to the manufacturing and functioning of the magnets used in the ASOWNJP's offshore wind turbines, the cables and stations used to transmit and transform the electricity produced from turbine to final destination, and the battery back-up Dominion is planning to construct to maintain electric power supply and reliability from its intermittent ASOWNJP project.

The International Energy Agency notes that offshore wind requires more scarce minerals, rare earth elements, and other critical metals per kilowatt hour of energy produced, than any other source of electric power generation, renewable and non-renewable alike. The vast majority of these critical minerals and elements are mined abroad, and almost all the refining is done in China alone.

A single on-shore wind turbine requires up to three metric tons of copper and magnets, composed in large part from difficult to mine and refine rare earth elements. Much larger offshore wind turbines will require even more copper and magnets composed of rare earth elements. Thousands of pounds of ore must be mined to produce a single pound of rare earth elements, and a significant amount of rare earth elements are required for the magnets used in wind turbines. That does not include the metals and sheathing for the cables and transformers. In addition, between 200,000 and 1,500,000 pounds of earth must be mined and moved to produce the lithium, cobalt, copper, nickel, and other metals and trace elements necessary to produce a battery pack for a single electric vehicle. This means billions of tons will have to be mined and refined to produce the thousands of batteries that will compose the large-scale battery facilities Atlantic Shores plans to use to back up and regulate the electricity produced by the ASOWNJP project. The COP should but does not analyze this impact. (*South Fork Band of W. Shoshone v. U.S. Dep't of Interior*, 558 F.3d 718, 725 (9th Cir. 2009) ["air quality impacts associated with transport and offsite processing of five million tons of refractory ore are prime examples of indirect effects that NEPA requires be considered."].)

Aside from the water polluting toxic sludge produced during the refining process to extract and purify the trace minerals from raw ore, the mining itself produces dust and the factories refining it emit air pollution. The fact that all this air pollution occurs thousands of miles away in countries with little or no environmental protection laws and limited, if any, enforcement —certainly no laws or policing comparable in stringency to those of the in the United States—should not exempt BOEM from acknowledging, analyzing, and disclosing the air pollution resulting from the ASOWNJ project. These emissions, contrary to BOEM's claims based on its limited accounting, are likely to be major and negative, not minor, moderate, or beneficial.

In the light of the federal government's stated position that EISs for fossil fuel-related energy and transportation projects must account for their construction and operational emissions, the ASOWNJ COP must be held to the same standard. And since the vast majority of the emissions from activities devoted to discovering, acquiring, refining, producing finished products, and transporting, the vast majority of the raw

material and finished products used in assembled turbines will be produced far away, it is arbitrary and capricious for BOEM to limit its accounting for air emissions to “the airshed within 25 miles (40 kilometers) of the Wind Farm Area (corresponding to the OCS permit area) and the airshed within 15.5 miles (25 kilometers) of onshore construction areas and ports that may be used for the Project.” The ASOWNJ project will have profound emission implications far beyond the area considered by COP.

Impacts on North Atlantic Right Whales

The most pressing issue surrounding the ASOWNJ project and BOEM’s entire offshore wind energy program along the eastern seaboard, is the project-specific and cumulative impacts on the federally-endangered North Atlantic right whale (NARW), which is generally considered the most imperiled marine mammal native to North America. Indeed, the total NARW population rests at approximately 330 individuals, and that number is dropping due to constant human-caused mortality, low calving rates, highly extended calving intervals, loss of prey species and access to foraging habitat, low and diminishing physical fitness, lack of genetic diversity, and extreme low abundance of reproductive females. Most whale experts agree that unless human-caused mortalities are immediately curtailed to zero, the NARW will become extinct in the next 30 to 60 years. For these reasons, it is imperative that the offshore wind developer and BOEM, through its future DEIS, examine closely, carefully, and comprehensively the ASOWNJ project’s potential to adversely affect NARW and exacerbate existing threats to the species. Unfortunately, the COP fails this basic task, leaving many impacts undisclosed, unstudied, and unmitigated.

We agree with statements from lead biologists at the National Marine Fisheries Service (NMFS) who have recommended that offshore wind energy projects be pushed back a minimum of 20 kilometers from areas used by NARW for feeding and other life history activities. This recommendation, which was set forth in a letter from NMFS to BOEM, dated May 13, 2022.

The following is a short list of project-related impacts on NARW that must be addressed in the EIS:

1. An accurate or adequate accounting of the number of NARW within the project area, which includes all transit corridors for vessels traveling between the wind development area (WDA) and supply ports.
2. An accurate or adequate projection of the number of vessels to be used in the construction, operation, and decommissioning of the project.
3. An accurate or adequate projection of the number of miles the various project vessels will travel through NARW habitat during construction, operation, and decommissioning of the project.
4. Use of the best available commercial and scientific data to establish baseline environmental conditions within the project area. THE EIS must provide a sufficient assessment of the project area's role in NARW migration, foraging, mating, calving, and other life history stages. The EIS must provide information on the existence, location, abundance, and aggregation of zooplankton in the project area. This is a critical information deficit, given that NARW feed exclusively on zooplankton.

5. Sufficient information on the current and anticipated use of the areas near the project site by non-project vessels. This information is necessary to assess the risk of NARWs being hit by vessels or entangled in fishing gear as a result of being pushed out of the project site by pile driving noise. In fact, the EIS must assess all risks and impacts to NARW resulting from displacement caused by project-related noise, both construction and operational. This includes loss of preferred foraging areas, loss of preferred migratory corridors, increased energy demands to find food or to migrate, increased risk of predation, increased risk of vessel strikes, increased entanglement in fishing gear, and overall loss of body fitness.

6. An incomplete discussion of the current imperiled status of the NARW. For example, it does not adequately address the NARW's sharply declining population, its low calving rate, the continued loss of reproductive females, and its ever decreasing PBR (potential biological removal) rate.

7. An adequate analysis of pile driving noise on NARW, and uses a noise dispersion/attenuation model that deviates substantially from industry standard without explaining the justification for this decision.

8. A critical assessment of the proposed measures for protecting NARW from pile driving noise. Prior DEIS documents assumed without analysis that Protected Species Observers (PSOs), along with data from passive acoustic monitoring (PAM) equipment, will enable the applicant to detect each and every NARW that may enter the pile driving Level A harassment zone.¹ There is no evidence to support this assumption. PSOs can only see whales on the surface of the water, not at depth. In addition, they cannot see beyond 1,500 meters in any direction. This distance is further diminished during times of poor lighting, rough seas, heavy swells, or fog. PAM systems only detect whales that are actively vocalizing; no-vocalizing whales will not be picked up at all. Baleen whales, including NARWs, are among the least vocal whales in the Atlantic Ocean, often going days, even weeks, without uttering a sound. Further PAM systems have a significant "miss rate" which results in many marine mammals going undetected. ² This fact is not discussed in prior DEIS documents, even though it bears directly on the efficacy of the mitigation measures and strategies that BOEM believes will protect the whale from project-related impacts. Note that the above-noted limitations on PSOs and PAM systems also apply to their ability to protect whales from project-related vessel strikes.

9. Adequate analysis of operational noise impacts on NARW. The ASOWNJ project will install and operate hundreds of large wind turbines. The noise impacts from such a huge array of large turbines have never been studied. In fact, the only field studies conducted on the issue involved five 6MW turbines off Block Island, RI. The noise signature of the Block Island wind farm simply cannot be compared to the noise signature that will be created by the industrial-scale ASOWNJ project. In addition, the previous EIS's operational noise analysis use sound propagation and attenuation model inputs that are not supported by the best available science and deviate substantially from industry practice, leading to a gross underreporting of the Project's noise impacts.

10. Adequate assessment of the project's potential to alter water currents and stratification. This issue was raised in a letter, dated May 13, 2022, by Sean Hayes, PhD, of NOAA Fisheries to BOEM. According to Dr. Hayes, the long-term effects of altered stratification will likely affect the aggregation of zooplankton, causing the zooplankton to disperse. This is problematic, given that NARW can efficiently feed on zooplankton only when the zooplankton are aggregated in dense patches.

11. Adequately assess the how the ASOWNJ project, plus the other offshore wind energy projects slated for construction within NARW habitat, will affect the species cumulatively, especially when the total offshore wind impacts added to the stressors that already threaten the species (e.g., commercial vessel traffic).

12. In his letter, Dr. Hayes also recommended that all offshore wind projects be moved back at least 20 km from areas where NARW feed and engage in other life history behaviors. The EIS must mention this recommendation or consider an alternative consistent with it.

13. Mitigation measures for Project impacts on NARW, including vessel speed limits, must not include exemptions and exceptions, resulting in significant risks to NARW, including potential injury from vessel strikes and hearing damage from pile driving noise

1 Level A harassment noise is noise that has the potential to cause physical damage to the hearing organs of the animal in question and/or result in permanent threshold shift (PTS), which is a long-term reduction in hearing capability. Level B harassment noise is noise with the potential to disrupt normal species behavior, stimulate avoidance behaviors, and/or result in temporary threshold shift (TTS). However, Level B noise, as defined, is not intense enough to cause physical damage to hearing organs or cause PTS.

2 "PAMGuard Quality Assurance Module for Marine Mammal Detection Using Passive Acoustic Monitoring," by CSA Ocean Sciences, Inc. (August 2020).

The COP Plan is Inconsistent with the 2016 Brigantine Master Plan Re-examination Report (2016)

[Appendix II- M1 VIA \(boem.gov\)](#), page 172/599

ASOWNJ COP states that the project is consistent with Brigantine's Master Plan. The ASOWNJ development along with the cumulative impact of other offshore planned activities will have a major negative impact on our scenic resources and scenic views in the community (KOP- BC02 and Brigantine Hotel Historic Site). The Atlantic Shores development along with the cumulative impact of other offshore development will NOT mitigate our flooding, extreme storm events, and sea level rise.

An objective identified from the previous planning documents includes an objective to "implement programs and regulatory controls designed to **protect the scenic resources of the community**". Previous actions taken to address this objective include zoning control, building height restrictions and setbacks. A "2016 follow-up" within this section of the report identifies **public concern for access to scenic resources**: "Another aspect of the planning process has been the **desire expressed by local residents for scenic views and resources to be protected and accessible to all**. The development of the waterfronts, in particular the back bay areas has provided limited public access to street ends and points of access to the bay visually in many locations." It also identifies that **there is "...an ongoing concern about visual access and scenic corridors on the Island, and there is a continuing desire to renovate some of the less desirable views..."** and a need to promote and preserve access to the Bay and Atlantic Ocean. A general goal **"to promote a desirable visual environment through creative development techniques and good civic design and arrangements"** is made created in the 2016 General Goals and Objectives Statement section. Provisions are made in subsequent sections to respond to

this objective and **improve the visual environment** through changes to building setbacks, height restrictions, and similar measures. However, no additional measures intended to protect or enhance visual access and protecting scenic corridors are proposed.

The Resilience Plan Element became a part of the master plan since two major storm events in 2011 and 2012. The reexamination of the Master Plan includes the Resiliency Action Plan that incorporates actions to protect against flooding, extreme storm events, and sea level rise.

The description of the Visibility Impact Study as presented below is inconsistent and in direct conflict with the Brigantine Master Plan.

According to Atlantic Shore Visibility Impact Study for Brigantine on Boem Website, the view of the seascape is described as follows:

“With the proposed Project in place, **the view is dominated by a large and highly visible array of WTGs that extend across a large portion of the ocean view to the southeast from this location.** Of the 232 degrees of relatively unobstructed ocean horizon, the Project occupies approximately 50 degrees or 22 percent of the view (see Field of View Image, left). Project visibility is enhanced by the relative proximity of the WTGs (9.03 miles) and lighting conditions that make the WTGs appear relatively dark against the light blue sky. Rating panel members had a somewhat variable range of reactions to the impact resulting from the Project WTGs, with the VIA scores ranging from 5.5 to 9.5 (average score = 7.8). These scores indicate an average reduction of 4.9 points and high magnitude impacts. Individual rating panel members scores ranged from 1.7 to 7.0. Panel members indicated that **the WTG’s become dominant elements in the view. They reduce the view’s sense of openness and add a large number of built features to what was previously an open, undeveloped ocean view. The presence of the WTGs tends to enclose the view and adds substantial visual clutter. This effect is enhanced by the transition of the WTGs an orderly arrangement to stacked alignment when the viewer is looking down a row of aligned WTGs, making them appear disorderly. The movement of the rotor blades will also attract viewer attention and make the WTGs the focus of this view.** Although the visibility and visual dominance of the WTGs is likely to be reduced under more hazy sky conditions, and when lighting conditions reduce WTG contrast with the sky, **proximity of the WTGs will allow them to be visible under most clear sky conditions.** With the Project in place, **this KOP has low to moderate scenic quality.** Considering the scale, compatibility, and spatial dominance factors that influenced the visual impact rating at this KOP, **panel ratings indicated that the WTGs present severe scale contrast with the ocean (water resources), land use, and user activity.** The panel scores also indicate that **the WTGs are not compatible with water resource, landform, land use, and user activity. The WTGs would become the dominant feature in the seascape when compared to the existing water resources, landform, and user activity.** Consistent with the anticipated compatibility, scale contrast, and spatial dominance impacts associated with the Project, panel members assigned the Project visibility an average VTL of 6 from this KOP”

[BC02 North Brigantine Natural Area \(boem.gov\)](https://www.boem.gov/BC02-North-Brigantine-Natural-Area)

Beaches and Pristine Ocean Views are Our Life Blood for Brigantine and Atlantic County Tourism.

- The major factor of tourism real estate in Atlantic County is its beaches.

Public Comments for Atlantic Shores Offshore Wind NJ (ASOWNJ) Construction and Operations Plan, Docket No. BOEM-2024-0008

Defend Brigantine Beach, INC and Downbeach, P.O Box 562, Brigantine, NJ 08203 defendbrigatninebeach@gmail.com

- Visitors go to beaches for the unbridled nature and to escape their cities and industrialization.

Beautiful Brigantine Beaches Featured in the News

US News Travel, www.thetravel.com, <https://thedigestonline.com>, and *New Jersey Monthly* rate Brigantine in Atlantic County one of the top best beaches in New Jersey. Tourism drives the local economies, and location and view are the primary factors determining housing prices.

[15 Best New Jersey Beaches | U.S. News Travel \(usnews.com\)](#)

https://www.thetravel.com/best-beaches-in-new-jersey/?fbclid=IwAR0sgA02VnNMNTF6MjDTWNZWV_8epWmjHDtNHGmvm11kZSkCwIMo7hiVsL4#brigantine-beach

<https://thedigestonline.com/news/9-secret-beaches-in-new-jersey/>

[7 of Our Favorite Hidden Beaches | New Jersey Monthly \(njmonthly.com\)](#)

ASOWNJ project will have a major adverse impact on the viewer experience Brigantine and other Atlantic County Beachs including and Brigantine Historic Site and other Historic Sites in Atlantic County.

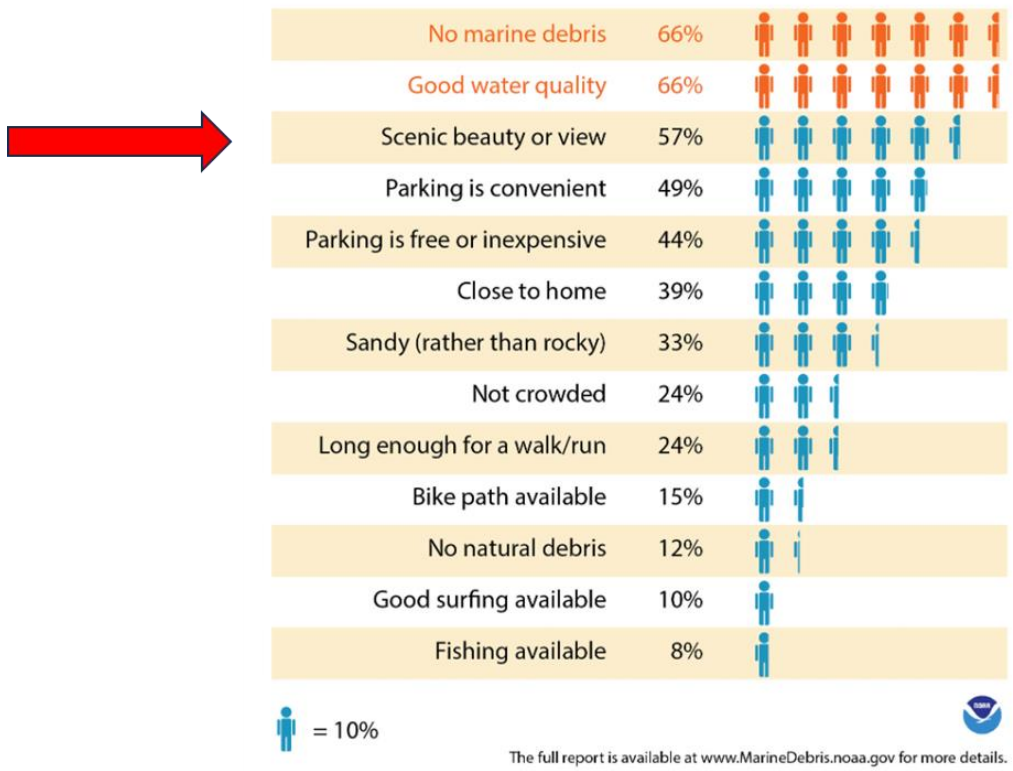
Scenic Beauty and Views are top beach characteristics that are important to people.

According to NOAA survey 57% ranked scenic beauty or view as a very important beach characteristic.

[2019.07.Econ_Impacts.Marine.Debris.complete.wFN_30Aug2019_508\(1\).pdf](#)



Percentage of people that ranked the following beach characteristics as very important



ASOWNJ Visual Impact Studies ignore the Rotating Blade Effect

The visual impact of the stationary turbines is just part of the impact to the shore. The physiological impact of any prolonged view of the rotation is unclear, but because of the disparity between what the brain expects to see at the seashore and the actual view, it could cause visible induced vertigo or other effects. [Offshore Wind Turbine Visibility and Visual impact Threshold Distances, Robert Sullivan, Argonne Labs](#)

Nothing has been said about this by the Wind Turbine Developers, but it is a serious problem and should be considered before proceeding with any project so close with such a MAJOR visible impact.

Impact to Historic Sites

BOEM states that they had scoping meetings in October 2021 regarding the historic property issue which satisfies the NEPA requirement to inform and receive input from the public. What did these parties do? What activities did they participate in? What information were they provided and what input did they provide to the NHPA Section 106 review? What essential parties or individuals were excluded from this process? The DEIS does not present any significant mitigation measures to measurably reduce the most severe impacts of the proposal such as turbine exclusion zones from shore similar to those being provided to other states to address visual impacts and adverse impacts to the historic properties under the National Historic Preservation Act and New Jersey Coastal Zone Management rules.

Environmental Injustice

The ASOWNJ COP ignores the major impacts related to Climate Justice Areas. Some of the worse visual impact changes and disruption to everyday living, increased pollution, vessel and road traffic, construction and operation noise, greatly reduced enjoyment of the natural free beaches in Atlantic City and increased energy costs as a percentage of income will occur in many of the 87 locations identified as environmental climate justice areas based on minority and low-income populations. As mentioned in other areas of these comments, the ASOWNJ project will not reduce the flooding, rising seas and severe climate events at or near the residences or recreational areas used by the minorities and low-income populations. Wind Developers and Government Agencies have ignored the Environmental Justice Area in Brigantine, NJ.

1.2.4.14 Environmental Justice Areas

Implemented in 1994 by Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations has a purpose of directing attention to a project's environmental and human health effects on minority and low-income populations. While this order addresses actions undertaken by federal agencies, states have additionally identified parameters to define Environmental Justice areas at the state level to mitigate the potential for disproportionately high and adverse human health of environmental impacts on minority, low-income, and/or Indian tribes and indigenous communities and populations from state actions. There are 87 Environmental Justice Areas identified within the ZVI, the closest (340010101052) is located in Atlantic City, approximately 9.9 miles from the nearest WTG.

Although not formally inventoried, it should be noted that the ZVI also includes other public resources that could be considered regionally or locally significant or sensitive due to the type or intensity of land use they receive. These include local park and recreational facilities, campgrounds, golf courses, local nature preserves, tourist attractions, fish and game clubs, schools, churches, cemeteries, areas of concentrated human settlement, and heavily traveled roads. Ocean bays and sounds within the ZVI could also be considered sensitive visual resources. These areas provide recreational opportunities, such as boating, fishing, kayaking, cruising, swimming, and wildlife viewing, and historic villages along these bays offer waterfront dining, shopping, and other tourist attractions and accommodations.



[Visual Impact Assessment - Atlantic Shores Offshore Wind \(boem.gov\)](https://www.boem.gov/visual-impact-assessment-atlantic-shores-offshore-wind)

"Green Energy" Beneficiaries of Offshore Wind Turbine Projects Outside of Climate Justice Areas

Governor Murphy's goal is to generate 11,000 Megawatts of electricity from ocean wind turbines (a/k/a green energy) off the New Jersey coast by 2040. The wind developers' marketing materials measure their project's energy benefit in "units of households". For example, a typical developer will state that its project "will provide electricity for "X" number of homes.

[Office of the Governor | Governor Murphy Signs Executive Order Increasing Offshore Wind Goal to 11,000 MW by 2040 \(nj.gov\)](https://www.nj.gov/governor/newsroom/2024/03/governor-murphy-signs-executive-order-increasing-offshore-wind-goal-to-11000-mw-by-2040)

Similar to the Atlantic Shores Project, According to the Ocean Wind 1 Project, Orsted claims that its 100 turbines will produce 1100 MWs and will provide energy for 500,000 households.

Fast facts

Ocean Wind 1 will power New Jersey with 1,100 MW of renewable energy

That's enough power approximately 500,000 homes per day

	# of Turbines	MW	Homes Powered
Ocean Wind 1	100	1000	500,000
Extrapolation	1000	11000	5,000,000

[Ocean wind 1 fast facts \(oceanwindone.com\)](http://oceanwindone.com)

By extrapolating these numbers, the result is that 11,000 MWs will require 1000 turbines which will provide enough energy for 5,000,000 households. The image below shows the number of wind energy projects planned for off the coast of New Jersey.

Please note, according to the news article in the link below, it is claimed that 4000 wind turbines will be needed to meet the 11,000 MW goal, but the author states that Governor Murphy's math is "fuzzy."

[Under Phil Murphy's clean energy plan, New Jersey can expect at least 4,000 wind turbines offshore \(shorenewsnetwork.com\)](http://shorenewsnetwork.com)

Although this is an overly simplistic statistic, it is consistent with offshore wind developers' data and explanations used throughout their industry. Suffice it to say, this calculation - based on the industry's methodology for explaining their projects' "clean energy" benefit - suggests that the 11,000 megawatts of offshore wind energy will more than meet the electricity needs of the State.

According to the latest census, there are 132,000 households in Atlantic County and there are 3.7 million households in the whole state of New Jersey. Atlantic County will use 4% of the "clean energy" produced by the wind turbines. Therefore, 96% of the "clean energy" will be exported to the state outside of the boundaries of Atlantic County communities. Including Cape May and Ocean County households increases the total Jersey shore households to 11% of the State's energy needs. Thus, 89% of the clean energy will be benefiting areas outside of Atlantic, Cape May and Ocean Counties.

No Significant Economic Benefits of Offshore Wind Energy Industry Climate Justice Areas

The great majority of green energy jobs related to offshore wind will not be located in Climate Justice Areas in Atlantic County but in other counties in New Jersey. The jobs held by many residents of Atlantic City are associated with the tourist industry which will be negatively impacted by the offshore wind projects. In addition any positive impact related to the jobs must be offset with the public money being used to "purchase" the jobs.

The Paulsboro Marine Terminal in Gloucester County will provide 500 jobs and will receive \$100 million in tax credits.

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Defend Brigantine Beach, INC and Downbeach, P.O Box 562, Brigantine, NJ 08203 defendbrigatninebeach@gmail.com

[Construction begins on offshore wind monopile manufacturing facility in New Jersey \(windpowerengineering.com\)](http://windpowerengineering.com)
[Steel plants going up at Paulsboro for offshore wind turbine network \(courierpostonline.com\)](http://courierpostonline.com)

Beym, Jessica (August 19, 2010). "Gov. Chris Christie at Paulsboro Marine Terminal to sign wind energy bill into law". South Jersey Times. Retrieved 2013-07-17.

Salem County Wind port on 220 Acres is receiving \$500 -\$800 million in state funding (from climate justice community tax payers) for its development for the wind industry, and 1000 jobs are expected
[Orsted Will Use NJ Wind Port to Build Offshore Wind Farm \(usnews.com\)](http://usnews.com)

It is unclear whether New Jersey (NJEDA) has decided to get into the wind energy business by using public funding for one or more of these projects. It is also unclear whether the State is assuming that tenant leases will generate enough income to pay the incurred public debt.

[NJ Wind Port Achieves Key Milestone with Board Approval for Major Land Purchase - NJEDA](#)
[NJEDA to Commence Next Phase of Tenant Selection Process for New Jersey Wind Port - NJEDA](#)
[NJEDA to Commence Next Phase of Tenant Selection for NJ Wind Port, Targeting Blade and Other Large Tier 1 Component Manufacturers with 70-Plus Acre Parcel - NJEDA](#)

The table below is included in NJPBU's Evaluation Report New Jersey Offshore Wind Solicitation #2, May 25, 2021, Levitan and Associated Inc. These are the jobs actually guaranteed by Atlantic Shores LLCs' Offshore Wind South project and Orstead's Ocean Wind 2 project. **Atlantic Shores guarantees no jobs during the construction of the project and 88 operations jobs over a 20 year period.**

Table 33. Expected and Guaranteed In-State Jobs by Applicant and Project
 BC//EC

	Atlantic Shores Offshore Wind		Ocean Wind 2 ¹⁵⁴	
	C		A	B
Jobs Scope and Commitment Period	O&M jobs, verified every five years during OREC 20-year term		All jobs, from award date to final COD + 3 years	
Expected Jobs				
Development and Construction				
Conditions	None		NJWP timely completion and reasonable NJWP lease costs	
Employment (FTE-years)	Not available		2,137 () 2,327 ()	
Operations				
Conditions	None		None ¹⁵⁵	
Duration (years) ¹⁵⁶	20		5	5
Annual Jobs (FTEs/year) ¹⁵⁷	88		[52]	[52]
Jobs Guarantee				
Type of Guarantee	Firm		Conditional	
Deficiency Cure Rate	100%		90%	90%
Guaranteed Pre-O&M Jobs (FTE-years)	0		1,923 ()	2,094 ()
Guaranteed O&M Jobs (FTE-years)	1,760			
Guaranteed Annual Average O&M Jobs (FTEs/year)	88			
Deficiency Consequence	Additional contribution to workforce development fund for any guaranteed shortfall, credited at \$50,000/FTE-yr in the COD year and escalated thereafter at 2.5% per annum		None	

Key conclusions in comparing the Applicants' jobs guarantees:

<https://nj.gov/bpu/bpu/pdf/boardorders/2021/20210630/Offshore%20Wind%20Solicitation%20%20-%20Levitan%20Evaluation%20Report.PDF>

Atlantic Shores Offshore Wind (joint venture between Shell and EDF) signed a MOU with six unions operating in NJ as part of its December 2020 bid submission to NJBPU to supply NJ up to 2300 MW of offshore wind energy. The union groups included the Eastern Atlantic States Regional Council of Carpenters, Laborers' International Union of North America, International Brotherhood of Electrical Workers Local 456, local 400 and Local 351, International Union of Operating Engineers Local 825, Ironworkers International and Eastern Millwright Regional Council. The agreements commit the companies and subcontractors to "integrate" union labor and create training and apprenticeship programs.

The specific information about the language in this agreement lacks transparency. The public has no idea what "integrate" means or what the actual language regarding commitments by Atlantic Shores is. Unless the specific language is revealed to the public, it can only be assumed that the language is ineffective in providing jobs to the unions. [Monumental 6-Union Agreement to Hire NJ Workers | Atlantic Shores Offshore Wind \(atlanticshoreswind.com\)](#)

As mentioned in other sections of this document, construction and operation of offshore wind projects (offshore and on land) in Atlantic City will provide disruption to underserved minority and low-income residential neighborhoods. Trenching for and operation of underground high voltage cables in the city neighborhoods and next to a public school is especially concerning.

The surfclam fishing industry is one of the largest clamming industries in the United States and employs many residents of the climate justice areas. According to a Rutgers Study, offshore wind farms could reduce Atlantic City's surfclam fishery revenue up to 25%.

[Offshore wind could shrink Atlantic City's surfclam revenue, study says - WHYY](#)

This excerpt below, expresses the concerns of the Mid-Atlantic Fishery Management Council, in their *Atlantic Surfclam and Ocean Quahog Fishery Performance Report, April 2022*:

"Wind Development The clam advisors are concerned about the BOEM (Bureau of Ocean Energy Management) wind farm leasing process and potential impacts to historically important fishing areas. The industry's opportunities to engage with developers on wind array siting relative to the most productive clam fishing beds has not been productive. This resistance in cooperation lends to the notion that the clam fishery and the ocean wind developers cannot coexist as the developers have made no attempt to give the clam industry any consideration in their layout of their arrays and the spacing between the turbines which will make it unsafe for clam vessels to work within wind farms. Siting is critical in terms of ensuring reasonable fishing access. It has been the experience of the clam industry that any communications by BOEM, wind energy developers, or state regulators is purely perfunctory and true mitigation efforts will not be made. In the New England and Mid-Atlantic region, offshore wind development is out of control. The industry feels that no matter how hard they try to engage with developers on these issues, their input is not being considered or incorporated into the siting

and development process. The spatial and operation requirements of the fishery (considering things like weather, tides, safety, etc.) need to be accounted for to ensure access to the wind arrays, but at present that is not happening. These arrays become de-facto Marine Protected Areas and the Councils and industry have nothing to say about how the fishing grounds are managed within the arrays. Unlike finfish, clams do not move, so once the vessels cannot fish in an area those resources are lost to the fishery and the value it brings to the economy. These areas are also likely to be lost to survey data further impacting the biomass estimates of the fishery. The Council needs to consider the biological impacts on the fishery itself, and other cumulative environmental effects that may occur. These should include things like productivity of the resource, larval displacement, scour and sediment suspension, hydrographic changes, and effects of sounds and other pressures on the zooplankton community (which includes food for clams). In addition, in water structures from offshore wind or other types of closures (e.g., GSCHMA) will result in vessels having to travel further and having a larger carbon footprint.”

[d_FPR_for2022_SurfclamOceanQuahog.pdf \(squarespace.com\)](#)

A paper by researchers in the Institute for Coastal Systems in Germany used numerical modeling to show how wind wakes may change local conditions. In the North Sea paper, researchers say their modeling studies show that expanding offshore wind installations.

“will substantially impact and restructure the marine ecosystem of the southern and central North Sea. Changing atmospheric conditions will propagate through ocean hydrodynamics and change stratification intensity and pattern, slow down circulation and systematically decrease bottom shear stress.”

[Wind turbines will affect base of ocean food chain, study predicts | National Fisherman](#)

Increased Air Pollution in Climate Justice Areas

According to the American Lung Association, Atlantic County has one of the lowest air pollution levels in New Jersey. The climate justice areas will be effected by the ASOWNJ project local pollution more than any other area.

[12 NJ Counties Ranked Among Worst Air Quality In The USA: Report | Rumson, NJ Patch](#)

How will the vessel and road traffic from constructing and maintaining 400-500 wind energy bases and turbines off our coast impact the air pollution in Atlantic County? Below is the table of ocean vessels that will be used for just the Atlantic Shore South Project. According to Atlantic Shores South COP

“Currently, maximum estimates for the total number of vessels required for any single offshore construction activity range from two vessels for scour protection installation to up to 16 vessels for OSS installation. For export cable installation, it is currently estimated that up to six vessels could be operating at once. Across the Projects, if all construction activities were occurring concurrently (which is unlikely), a total of 51 vessels could be present at any one time.”

According to Construction Timelines in Atlantic Shores North, South and Orsted Ocean Wind Projects construction plans, many of the construction phases will be running currently for both projects. Construction

will continue to increase air pollution as these projects are constructed. Reporting is absent for increased air pollution and there is no mention of on shore road traffic vehicles and their pollution. On shore pollution from construction and maintenance vehicles is equally ignored.

Wind Energy Projects will Essentially be the Equivalent of Federal Government Condemnation of the Beaches in Climate Justice Areas

The disadvantaged populations, minority and low-income, of climate justice areas use the beaches located in Climate Justice Areas for their recreation. The beaches in Atlantic City are free. There is no fee-based badge or pass needed to visit. According to 2019 NOAA study mentioned in the tourist section of this document, 57% of people rank scenic beauty or view as a very important beach characteristic. Climate Justice Areas will have the largest cumulative visual impact of any other area of New Jersey or perhaps the country. There will be 876 wind turbines visible from the Atlantic City Boardwalk. There are more visual wind turbines than any other area, probably more than along other areas located in the eastern coast. The Atlantic Shores project will add substantial visual clutter and the movement of rotor blades will become the focus of the view. The wind turbines will become the dominant feature in the seascape compared to the existing water resources, landform and user activity. As a result, the beaches once enjoyed by minority and low-income families will be essentially condemned by the industrialization of the ocean view and the major negative impact to the low income and minority population's enjoyment of the beaches.

Global Environmental Justice Impacts

In all of its regulations and EISs, the Biden administration is careful to highlight and account for the "Environmental Justice" impacts that a proposed rule or project will produce. BOEM's ASOWNJ EIS, however, glosses over these impacts, asserting they will be either "negligible," "minor," or even "beneficial," depending on the alternative under review. This position is untenable if one considers the broader, comprehensive Environmental Justice impacts, cradle to grave, of the development of the ASOWNJ.

The Congo is the largest producer of the cobalt necessary for various technologies critical to the Biden administration's net-zero GHG reduction goals. Cobalt is a necessary component of the ASOWNJ. Most cobalt in the Congo is mined under appalling working conditions at small mines.¹ Child labor is not the exception but the norm there.² Even the Biden administration's own State Department has acknowledged that child labor is rife in the production of cobalt. Increasing the demand for cobalt will increase pressure on cobalt miners to produce, meaning either more children will be put to work, or existing child laborers will be forced to work harder under dangerous conditions.³ These facts on the ground hardly smack of concern for environmental justice.

In China, where most raw minerals and finished green energy products are produced, mining is conducted using forced or slave labor, often of persecuted religious minorities, like Falun Gong followers and Uighurs. Once again, the Biden administration acknowledged this problem, having signed the Uighur Forced Labor Prevention Act in 2021 and blocking the importation of thousands of Chinese-made solar panels. Still, the reality of today's supply chain, combined with insufficient intelligence on the ground to track forced labor in

manufacturing, and less still the development raw materials, it is likely that the ASOWNJ will be built using or containing minerals, rare earth elements, and parts produced using Chinese slave labor. This should be considered by BOEM in its assessment of the Environmental Justice implications in BOEM’s ASOWNJ EIS. Failure to do so is arbitrary and capricious.

The U.S. government should not be offshoring its pollution in constructing the ASOWNJ, nor should it ignore the environmental justice considerations of the labor conditions under which the ASOWNJ’s core components are created.

1 Cobalt Red: How the Blood of the Congo Powers Our Lives by Siddharth Kara, St. Martin’s Press (2023).

2 Id.

3 Id

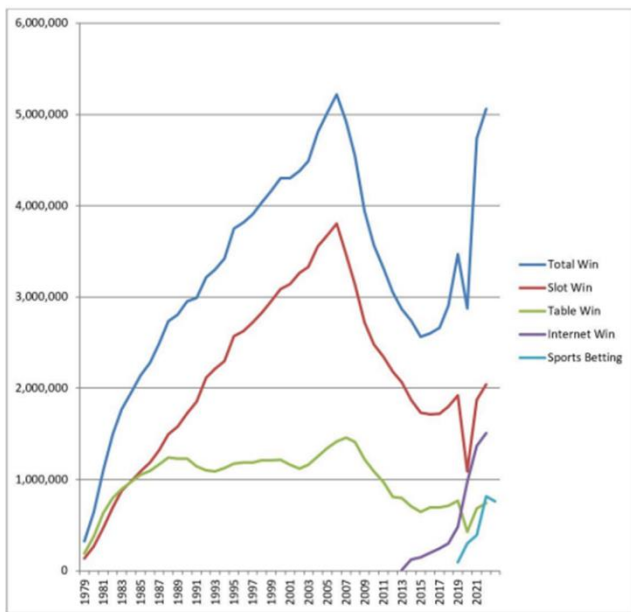
ASOWNJ Impact to AC Casinos

- The ASOWNJ COP ignores the project’s impact to casino tourism. The beaches and ocean view are an attraction and provide a competitive advantage for Atlantic City casinos. Atlantic City is known as a waterfront destination city for casino tourists as a result. Atlantic City remains the 2nd largest casino industry behind Las Vegas. ASOWNJ project and other planned offshore wind projects will have a major adverse impact on the view from the casino ocean front rooms, restaurants, beach bars and other ocean front activities which will be dominated by a large and highly visible array of wind turbine generators. The state of the “bricks and mortar” casino industry in Atlantic City is fragile. First, the onslaught of online gaming has cannibalized the bricks and mortar casino tourists in Atlantic City. Second, there are 14 licensed casinos in Pennsylvania. Several are in scenic areas such as ski resorts. Others are adjacent to large urban and suburban areas such as Philadelphia. A new, 510,000 square foot casino with 200 hotel rooms was built next to the sports stadiums in Philadelphia. Pennsylvania casinos offer the same entertainment and fine dining as Atlantic City casinos. Lastly, the NY State casino market is expanding which will bring more competition to the industry. Local industry experts proposed a solution to invest in Atlantic City’s ocean front experience. The ASOWNJ project is in direct conflict with this solution. [Atlantic City investments a must as New York casinos loom, gaming panel says \(pressofatlanticcity.com\)](https://pressofatlanticcity.com).
- Not only do the Casinos add billions to the tourist economy, but they have also supported billions of dollars in other related industries including construction and manufacturing. Just in the last several years, Casinos have invested \$1 billion in hotel room renovations, constructing new restaurants and updated amenities. If the Casino management and leadership continue to believe that the Atlantic City casino market is sustainable, they will continue to invest in and expand their facilities. The construction created thousands of jobs over the years. The ASOWNJ COP does not provide any statistics related to the employment of construction of construction employees, many of them union members related to

casino renovation and construction projects. [Atlantic City Casino Owners Still Spending Millions On World Class Resort \(playnj.com\)](#)

- The COP has no reference that there was consideration given to whether the ASOWNJ is consistent with the Atlantic City casinos' strategic, marketing and investment plans.
- Casino contraction in 2014-16 resulted in a reduction of casino revenues from \$5.2 billion to \$2.6 billion. This had a significant impact on the local economies. As a result of this contraction, Atlantic City was on the verge of bankruptcy and taken over by the State in 2016. The takeover was renewed by the Governor in 2021. The Atlantic County government debt rose from \$132 million to \$203 million and the equalized value of property fell from \$56 billion to \$35 billion. Atlantic County tax rate is now double the Cape May County rate. The residents now have the burden of filling the gap in taxes caused by the casino contraction. In 2016 the Casino Property Tax Stabilization Act replaced casino property taxes payments in lieu of taxes (PILOT). Currently Casinos are involved in a lawsuit to get the online gaming and sports betting revenues excluded from the PILOT program therefore there is a possibility that future taxes would only apply to bricks and mortar gambling revenues. The final decision will increase the importance of closely examining the impact ASOWNJ projects will have on gambling tourism bricks and mortar operations in Atlantic City.
- The casinos are owned by national and industry brand casino industry corporations. If the bottom line of the bricks and mortar activities no longer makes business sense, the casino investors will cut their losses in Atlantic City, concentrate on their other casino locations, and there will be further contraction in Atlantic City.
- The BOEM ignores any impact the ASOWNJ visual impact will have on the casino tourism industry. The OCEAN Economy Data on table B. 4-8 excludes Casino tourism lodging and may exclude other casino industry GDP. This grossly misrepresents the true financial impact of ASOWNJ on tourism in Atlantic County.

Atlantic City Casinos: Casino Win, 1978-2022



State of Casinos in Atlantic City

- 2006 Peak Revenue at \$5.2 B
- Interstate Competition and AC Casino Retrenchment 2014-16: Reduction to 7 from 12 Casinos = Revenue of \$2.6B
- 2021 Bricks and Mortar = \$2.6B
- 2021 Internet and Gaming = \$2.1B (45%), Cannibalizing Brick and Mortar Revenue
- 2023: NY State Casino Market Expansion and **Proposed Solution to Invest in AC Ocean Front Experience** [Atlantic City investments a must as New York casinos loom, gaming panel says \(pressofatlanticcity.com\)](https://www.pressofatlanticcity.com/news/atlantic-city-investments-a-must-as-new-york-casinos-loom-gaming-panel-says)

[AC History \(unlv.edu\)](https://www.unlv.edu)

This is information from the Atlantic City Bond Rating, which indicates the risk of contraction in the casino industry.

https://www.moody.com/research/Moodys-upgrades-Atlantic-City-NJs-issuer-rating-to-Ba2-outlook-Rating-Action--PR_907843127

FACTORS THAT COULD LEAD TO A DOWNGRADE OF THE RATING

- Contraction in the casino industry
- Material deterioration in reserves and liquidity
- Withdrawal of state oversight and inability to independently manage operations

Further Degradation of the Shore Experience and Adverse Impact to Tourism from Effects on Wind, Waves and Air Temperatures and Noise

ASOWNJ COP does not adequately support with scientific evidence that the wind turbines starting 9.7 miles from the beach and the cumulative impact of other planned offshore wind projects will not adversely impact tourism because of reduced wind speed, waves and higher local air temperatures and increased noise as follows:

Reduced Wind Speed at the Shore

Small turbines, 7% reduction 6 miles downwind of wind complex. Large turbines, 26% reduction 9 miles downwind (same distance from shore to turbines here and fewer wind turbines)

Wave Height Decreases with Wind Speed

Local Air Temperature Increase will be 1.1 degrees 28 miles downwind of moderate size turbines.

Airborne Wind Turbine Noise to Persons

Noise propagates more effectively over water than land, annoying at the beach and causing sleep disruption.

- Continual Turbine Operation Measurement Study:
 - o 1 operating turbine = 118 dBs/Vesta-236 15-megawatt turbine Specifications AND 7 turbines = 126.3 dB
 - o Noise loss over 9 miles = 73 dB
 - o Net noise = 53.3 dB
 - o Night time noise level is 50 dB
 - o 3 dB difference doubles the noise intensity to the receiver
- Construction Pile Driving
 - o 137 dB, 10.7 dB higher than the 7-turbine array used above for operational noise example.
 - o Noise loss over 9 miles = 73 dB which results in a noise level at the shore of 64 dB, close to the daytime standard of 65 dB, or equal to the noise of a vacuum cleaner

Footnotes:

Stoelinga et. al., "Estimating Long-Range External Wake Losses in Energy Yield and Operational Performance Assessments Using the WRF Wind Farm Parameterization", ArcVera Renewables, 2022

References

Wake studies around a large offshore wind farm using satellite and airborne SAR M.B. Christiansena,*, C.B. Hasager a Risø National Laboratory, Wind Energy Department, Frederiksborgvej 399, P.O. Box 49, DK-4000 Roskilde, Denmark – merete.bruun.christiansen@risoe.dk

LETTERS, Micrometeorological impacts of offshore wind farms as seen in observations and simulations S K Siedersleben¹, J K Lundquist^{2,3}, A Platis⁴, J Bange⁴, K Bärfuss⁵, A Lampert⁵, B Cañadillas⁶, T Neumann⁶ and S Emeis¹ ¹ Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research, Atmospheric Environmental Research (IMK-IFU)

Johansson, Sound propagation Around Off-Shore Wind Turbines, 2003.

Public Comments for Atlantic Shores Offshore Wind NJ (ASOWNJ) Construction and Operations Plan, Docket No. BOEM–2024–0008

Defend Brigantine Beach, INC and Downbeach, P.O Box 562, Brigantine, NJ 08203 defendbrigatninebeach@gmail.com

Offshore Airborne Sound Assessment Revolution Wind Offshore Wind Farm prepared for Revolution Wind, LLC 56 Exchange Terrace, Suite 300 Providence, RI 02903.

Impact on Atlantic County Tourism Economy

The COP ignores any calculation of economic impact and uses studies that have little external validity to the Jersey Shore and BOEM disregards key findings in other studies as justification for doing so.

The tourist data referred to as the 2019 “Ocean Economy” in table B-4.8 (NOEP 2019) is significantly lower than 2019 (comparable year used in COP) and 2022 (most recent report)

data on tourism economic research analysis reports by the NJ State Government, New Jersey Division of Travel and Tourism, at VisitNJ.org. [Economic Impact \(visitnj.org\)](http://EconomicImpact.visitnj.org)

The data in the Economic Data excludes tourism lodging GDP from the Atlantic City casino industry and may exclude more categories related to the casino industry. The COP lacks any explanation on why the data is inconsistent with NJ State Government tourism data which has been consistently analyzed on an annual basis. The New Jersey Division of Travel and Tourism uses the analysis as the basis for all strategic decisions regarding tourism in the State.

The Tourism Economic Impact Studies are listed on the website starting with the 2003 year. The Oxford Economics Company has prepared the report for the NJ Division of Travel since 2012. There is a reasonable expectation that during a rigorous review of the cumulative impact of the 500-850 visible wind turbines off the coast of New Jersey, the BOEM would cross check and verify its tourism data with multiple sources including the State’s data.

The COP distorts the true exposure for the tourist industry and economy. This is especially egregious since this data is used to make policy decisions and offshore wind permitting decisions.

The casino-hotel employment in the County by number of employees as is as follows:

<u>Casino Name</u>	<u>Dated Opened</u>	<u>Total Employees (as of 12/31/21)</u>	<u>Total Employees (as of 12/31/22)</u>
Resorts Casino Hotel ⁽¹⁾	May 1978	1,593	1,643
Caesars Atlantic City Hotel Casino ⁽²⁾	June 1979	2,300	2,561
Bally's Atlantic City Casino Resort	December 1979	1,514	1,462
Harrah's Resort Atlantic City	November 1980	2,497	2,441
Tropicana Atlantic City Resort & Casino	November 1981	2,155	2,094
Golden Nugget Atlantic City ⁽³⁾	June 1985	1,517	1,358
Borgata Hotel, Casino & Spa	July 2003	4,004	4,504
Hard Rock Hotel & Casino	June 2018	3,442	3,448
Ocean Casino Resort	June 2018	<u>2,777</u>	<u>3,285</u>
Total:		21,799	22,796

Source: New Jersey Division of Gaming Enforcement and New Jersey Casino Control Commission

⁽¹⁾ Total Employees for Resorts Casino Hotel include people employed by Resorts Digital Gaming, NJ.

⁽²⁾ Total Employees for Caesars Atlantic City include people employed by Caesars Enterprise Service and Caesars Interactive Entertainment, NJ.

⁽³⁾ The figures for Golden Nugget Atlantic City include people employed by Golden Nugget Online Gaming, NJ.

<https://emma.msrb.org/P11717276.pdf>

Since the Wind Developers and Government Agencies arenegligent in preparing calculations for the impact to the Tourism Industry, we used scientific studies and surveys along with the data in the New Jersey Division of Tourism, 2022 Economic Impact Study for the basis of our calculations. The details of studies and calculations used to back up our conclusions are presented after the summary bullet points in the Footnotes.

Impact on Atlantic County Economy

The details of studies and calculations used to back up our conclusions are presented after the summary bullet points in the Footnotes.

- **Rental Demand Loss:** 50% of prior renters would not rent again with turbines visible regardless of rent discount. Including Atlantic City, Atlantic County annual rental income loss could be \$17.2 M (10%) to \$68.9 M (30%). Excluding Atlantic City, Atlantic County annual revenue loss could be \$4.5M (10%) - \$17.9M (40%). Lost rental income NPV over 20 years could be \$65M - \$250M.^{V1, V2}
- **Tourism Revenue, Job Losses, and Tax Losses:** ^{V3, V4, V5, V6}
16.5% - 24% would not visit Atlantic County beach town, which could be a loss of:
 - 8,700-12,700 jobs or 175,000 -255,000 job years over the project life
 - \$1.3 – \$1.9B in annual revenue or NPV of \$17.4 B - \$25.5 B over the project life
 - \$142 - \$206 million government tax loss revenue over the project life
- Wind Turbines will not be a Significant Tourist Attraction based on survey participants not willing to pay more for rental property with a view of wind turbines. ^{V1}
- **Large Energy Cost Increase** for residents, businesses, and especially fragile seasonal tourism businesses. Based on the most recent analysis for 11GW of offshore wind energy in New Jersey, electricity rates are expected to increase by over 55% for residents, 70% for commercial and over 80% for industrial users by 2047. Based on the most recent solicitation for 3742 MW of power over 20 years, rates are projected to increase by 20%-30%. ^{V8}
- **Recreational Fishing Revenue=** \$19M/ YR to the NJ economy. How will this be impacted during years of construction and operation? ^{V7}
- **Other Tourist Industry Impacts** The future of the Annual Farley Marina Jimmy Johnson Fishing Tournament, Annual Atlantic City Air Show, and other Beach Concerts, and other Beach Centric Entertainment Events, Bars and Restaurants is uncertain. The airshow alone brings 100,000 tourists to Atlantic City and \$50 million to the economy. ^{V9}
- **Casino Contraction:** Bricks and mortar operating losses for casinos may cause further consolidation in AC. Losses in Casino revenue and profits could reduce local and state taxes/fees including but not

limited to the annual \$200 million PILOT tax payments and \$700+ million annual Gamine Specific taxes and fees. The Casino PILOT program ends in 2026 ^{V10}

- **Residential Property Value Loss:** Based on the impact of an industrialized ocean view from beach homes in A.C, Brigantine, Long Port, Margate and Ventnor, total property values could be reduced by \$2.2 billion, and the County, municipalities, and school districts could lose \$36 million in annual taxes. ^{V11}

Footnotes: Studies and Calculations of Economic Impact on Tourism

ACTUAL STUDIES AVAILABLE FOR CALCULATIONS OF TOURISM LOSS ARE BASED ON A COMBINATION OF WIND TURBINE SIZE, DISTANCE AND NUMBER THAT IS MUCH SMALLER AND MUCH LESS OF A NEGATIVE IMPACT ON VISUAL RESOURCES AND SCENIC VIEWS THAN THE ATLANTIC SHORES AND OCEAN WIND 1 PROJECTS WILL HAVE ON THE JERSEY SHORE COMMUNITIES.

THE WIND DEVELOPERS OR GOVERNMENT AGENCIES HAVE MADE NO ATTEMPT TO REPEAT ANY SURVEYS OR STUDIES USING VISUAL SIMULATIONS BASED ON ACTUAL WIND TURBINE SIZE, DISTANCE AND NUMBERS FOR ATLANTIC SHORES SOUTH PROJECT WHICH WAS AVAILABLE ON BOEM WEBSITE IN 2022 (ATLANTIC SHORES SOUTH).

DUE TO THE LACK OF ANY STUDIES THAT INCLUDE SURVEYS USING VISUALIZATIONS OF THE ATLANTIC SHORES PROJECTS, ANALYSES WERE PREPARED USING THE EXISTING STUDIES BY EXTRAPOLATING THE DATA FROM EACH STUDY BASED ON THE SIZE, NUMBER AND DISTANCE OF THE WIND TURBINE PROJECT COMPARED TO THE ATLANTIC SHORES WIND TURBINE PROJECT.

V1. North Carolina State University, the Amenity Costs of Offshore Wind Farms- Evidence from a Choice Experiment, Lutzeyer et. al., August 2017. <https://cenrep.ncsu.edu/cenrep/wp-content/uploads/2016/03/WP-2017-017.pdf>

This study included visualization of 64, 100 and 144 total wind turbines, 5 Mw (around 500 ft tall compared to 1040 ft tall for 15 Mw Atlantic Shores turbines) sized wind turbines with daytime and nighttime views. Wind turbine visualizations were located at various distances from shore including 5, 8, 12 and 18 miles. Based on an extrapolation of the size difference, the comparable distance used in the study would be 5 miles.

The nighttime views increased the visual disamenities and avoidance of rental properties with views of the wind turbines. Participants were divided into categories: 55% never wanted a view from a rental property no matter how much rent was discounted, 23% would tolerate some view along with various discounts, and 21% would rent with a view all the time. No participants would pay more rent to see the wind turbines. This may impact Jersey Shore significantly if increased electric costs based on offshore wind rates increases rental rates. Lastly, the study notes that choices will depend on whether vacationers have an alternative location for their vacation, and this factor will impact the results. Along the eastern seaboard, vacationers have a significantly large number of options for vacation locations within driving distance that will not have 1040 ft high wind turbines starting 9 miles off the beach along with 722 (Brigantine Hotel) turbines in ocean viewshed from the beach. The results from the study used in the calculations on Economic Impact have a 95% confidence level.

V2. Based on Atlantic County Rental Income

The model lists a wide range of income losses because of unknown rental market supply and demand elasticity factors. For example, other tourists may be willing to rent properties at discounted rental rates. The mix of renters who would not return in combination with new renters who may rent properties at various discounts are examined by Lutzeyer et. al., in North Carolina State University Study (V1). The table below has two calculations: one with Atlantic City and one excluding Atlantic City. The percentage of vacation versus full time resident renters is known for Brigantine. Based on Brigantine City Records, in 2022, 2000 properties were listed as “summer” (vacation) rentals. It is not known what portion of the monthly rental income is attributed to these properties in Brigantine in the table.

Vacation Rental Income Losses in Atlantic County									
Coastal City	Rental Properties (1)	Monthly Rental \$ (1)	Annual Rental \$Millions	NPV 20 YR Loss	Coastal City	Rental Properties (1)	Monthly Rental \$ (1)	Annual Rental \$Millions	NPV 20 YR Loss
Atlantic City	11,793	\$900	\$127.4						
Brigantine	1,096	\$1,208	\$15.9		Brigantine	1,096	\$1,208	\$15.9	
Long Port	40	\$1,677	\$0.8		Long Port	40	\$1,677	\$0.8	
Margate	579	\$1,310	\$9.1		Margate	579	\$1,310	\$9.1	
Ventnor	1,579	\$1,006	\$19.1		Ventnor	1,579	\$1,006	\$19.1	
Total Atlantic County	15,087		\$172.2		Total Atlantic County	3,294		\$44.9	
Economic Loss 10%			(\$17.2)		(\$250.8)	Economic Loss 10%			(\$4.5)
Economic Loss 20%			(\$34.4)	(\$501.6)	Economic Loss 20%			(\$9.0)	(\$130.1)
Economic Loss 30%			(\$51.7)	(\$752.3)	Economic Loss 30%			(\$13.5)	(\$195.9)
Economic Loss 40%			(\$68.9)	(\$1,003.1)	Economic Loss 40%			(\$17.9)	(\$261.2)

Assumed Vacation Rental Inflation Rate is 3% and NPV Discount Rate is 6%

(1) City Data.com

V3. Global Insight, Inc. an Assessment of the Potential Costs and Benefits of Offshore Wind Turbines, prepared for the State of New Jersey, September. 2008

<https://www.state.nj.us/bpu/pdf/announcements/njoswt.pdf>

Survey visual information in the report for Atlantic County was based on 3.6MW (model first used in Ireland in 2004) wind turbines, hub height of 73.5M vs. 175M (ASOWNJ) and rotor diameter of 104M vs. 280M (ASOWNJ) or 250 Ft. above sea level compared to 1040 Ft. above sea level for Atlantic Shores Project, 3 and 6 miles off the coast of Atlantic City. The number of wind turbines in the study was 80, compared to 200 turbines for ASOWNJ project with a total cumulative impact of 730 visible turbines. Two pictures, clear and hazy days, were shown to participants. Assumption is that the turbines will not be seen from other shore towns outside of Atlantic County. For wind turbines located 3 miles Offshore, 16.5 % of Atlantic County Visitors are more likely not to visit.

Actual ASOWNJ wind turbines dimensions are 2.7 times (rotor diameter) and 2.4 (hub height), An extrapolation of the hub and rotor heights translates the 3.0 miles to 8.1 miles. This is very close to the 8.7-mile distance from Brigantine, NJ. Factoring in the distance equivalency and more than double the visible wind turbines for the ASOWNJ project and 9 times more visible wind turbines for future planned

offshore wind projects, number of participants’ negative responses are conservative and should be even higher.

V4. University of Delaware, Atlantic Offshore Wind Energy Development: Values and Implications for Recreation and Tourism, sponsored by the Bureau of Ocean Energy Management (BOEM), Parsons & Firestone, March, 2018 (using the data for smaller, closer turbines with the same line of sight as those proposed for Brigantine) <https://epis.boem.gov/final%20reports/5662.pdf>

Survey used visual impact pictures of 100 turbines each with a height of 547 ft. The Atlantic Shores turbine height is 1040 ft. or 1.9 times the height of turbines used in the study. Adjusting the distance through simple extrapolation, equivalent distance of 5 miles would be 9.5 miles, given the difference in turbine size. Atlantic Shores turbine distance is 9 miles. In addition, there will be 750-850 turbines in the view of the Atlantic County beaches (cumulative impact), thus, results in this study are conservative estimates. According to the survey results, there is a 24% trip loss at 5 mile (equivalent 9.5 miles for 1040 height turbine) distance. At 5 miles, positive response is negligible.

V5. Tourism Economics, An Oxford Economics Company, The New Jersey Visitor Economy 2022, March 2023 Visit New Jersey.com, [Economic Impact \(visitnj.org\)](http://economicimpact.visitnj.org)

V6.

Atlantic County: Reduction in Tourism						
Atlantic County	2022 Annual Tourism \$	Tourism Jobs	Fiscal Tax Impacts	NPV of Tourism \$ over 20 Yrs	FTE Job Years over 20 Years	NPV of Fiscal Tax Impacts over 20 Yrs
Current	\$ 7.8 billion	53,021	\$860 million	\$104.7 billion	1 1 million	\$11.5 billion
\$ Impact (16.5%)	(\$1.3) billion	(8,748)	\$142 million	\$17.4 billion	(175,000)	(\$1.9) million
\$ Impact (24%)	(\$1.9) billion	(12,725)	\$206 million	\$25.5 billion	(255,000)	(\$2.7) billion

Assume 2% Growth Rate and 6% Discount Factor

16.5% reduction based on Global Insight Study(see V3) and 24% reduction based on Parsons & Firestone Study (V4)

V7. [Atlantic Shores Offshore Wind South Draft Environmental Impact Statement: Chapters 1-4 \(boem.gov\)](http://atlanticshoresoffshorewind.com)

Table 3.6.1-31. For-hire recreational fishing revenue in New Jersey in comparison to the combined Project 1 and Project 2 WTAs, 2010–2018¹

Year	Revenue in New Jersey (thousands of dollars) ¹	Revenue from WTAs (thousands of dollars) ²	Percentage of Revenue from WTAs
2010	\$55,509	\$13	0.02
2011	\$62,526	\$34	0.05
2012	\$61,825	\$23	0.04
2013	\$102,472	\$15	0.01
2014	\$97,175	\$16	0.02
2015	\$88,203	\$28	0.03
2016	\$33,359	\$10	0.03
2017	\$36,089	\$9	0.02
2018	\$49,439	--	--
Average	\$65,177	\$19	0.03

Sources: (1) NMFS 2022d, (2) NMFS 2022b.

Notes:

Available for-hire recreational revenue data for New Jersey were limited to the period of 2010–2018.

Years with no revenue from the WTAs are indicated by “--”

Atlantic Shores offshore wind developer claims that the project will attract recreational fishing as a result of a “reef affect” as mentioned in a Block Island study, (*Analysis of the Effects of the Block Island Wind Farm on Rhode Island Recreation and Tourism Activities*, BOEM, Smythe, et al. University of Rhode Island, Dec 2018). This is a total misrepresentation of the study in that Block Island project consists of jacket foundations and Atlantic Shores project foundations will be monopiles unless the developer makes a change to its decision. See information comparing Jacket and Monopile Foundations below from WindPowerEngineering.com.

Advantages of jackets (Block Island)

- Can be installed using piles or suction caissons in stiff clays or medium-to-dense sands. Soft-soil installations are possible with longer pile lengths that significantly increase friction resistance.
- **The larger surface area of the lattice configuration may provide an artificial reef location, providing a new habitat for local species.**
- Economical choice using straightforward manufacturing methods.
- Can be moved by barge.

Disadvantages of jackets

- May allow invasive species to establish and spread.
- North Sea installations of jacket foundations have reported ongoing grout joint issues, causing long periods of maintenance downtime to sustain structural integrity.
- Changes to local water patterns may be detrimental to native marine ecosystems.
- Installations using pile drivers can create underwater noise that may injure or kill some marine life.

Advantages of monopiles (New Jersey Coast)

- Work well in sand and gravel soils.
- Have a simple design that installs quickly.
- Adaptable for shallow and deeper installations of various sizes.
- Cost-effective for installations to 40 m.

Disadvantages of monopiles

- Cost and risks associated with fabrication, installation and transport increase for larger monopiles required at deeper installations where hydrodynamic loads are an issue.
- Installation noise can disorient, injure or kill marine life sensitive to pressure waves. This includes humpback whales, loggerhead turtles and manatees.
- Wind, wave and seismic loading can **negatively affect monopile foundations**. This can cause early fatigue damage to the structure if it is not accounted for during installation.

[Comparing offshore wind turbine foundations \(windpowerengineering.com\)](http://windpowerengineering.com)

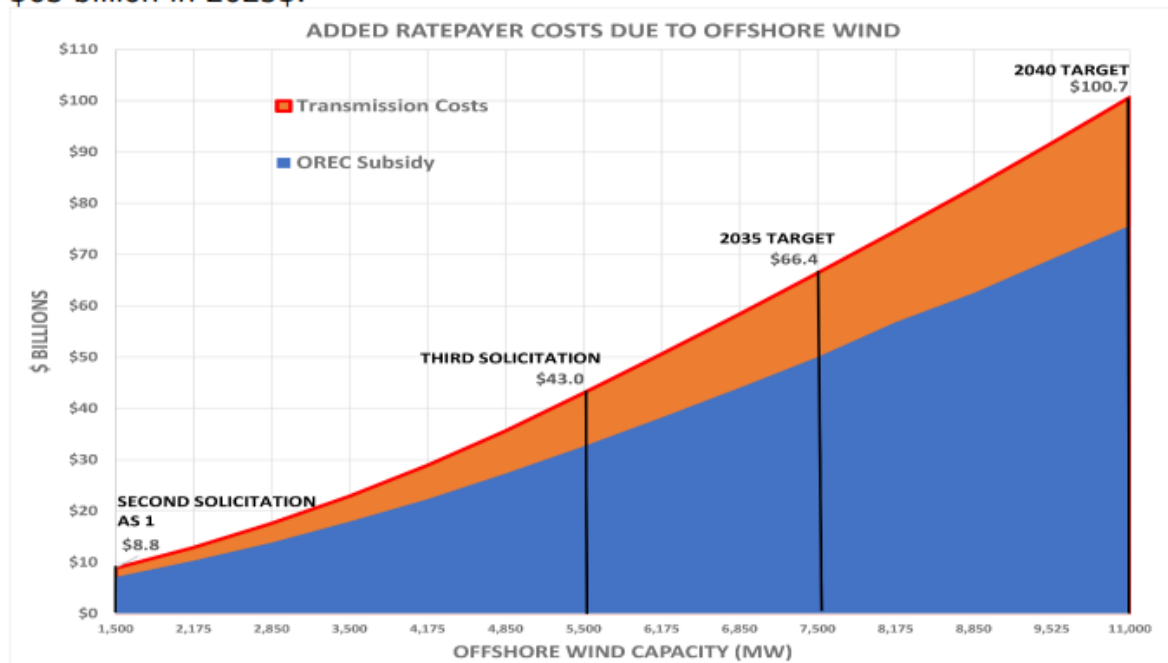
V8. In November 2023, Whitestrand Consulting LLC prepared an analysis of the New Jersey Offshore Wind Program on State Electric Rates for the LBT10 Taxpayers Association. [Impact-of-Offshore-Wind-on-NJ-Electric-Rates-Whitestrand-Consulting-LLC-Nov-2023.pdf](https://defendbrigantinebeach.org/Impact-of-Offshore-Wind-on-NJ-Electric-Rates-Whitestrand-Consulting-LLC-Nov-2023.pdf) (defendbrigantinebeach.org)

The report included an analysis of baseline electric power usage and rates, generation costs, transmission costs and rate impacts for the States goal of installing 11GW of offshore wind energy by 2040. The NJBPU along with wind developers and other government agencies ignore the costs of building out the grid for offshore wind energy. These transmission costs will be billions of dollars passed onto rate payers. **According to the analysis, the extra costs for offshore wind generation and transmission will increase retail rates for all customer classes, by over 55% for residential, 70% for commercial and over 80% for industrial users by 2047.**

Residential customers who currently pay about 16 cents/kwhr will see that price double to over 32 cents/kwh, increasing their annual bill by \$1000 in 2047. For commercial ratepayers, including most small business, offshore wind related costs will add almost \$8400/yr. Industrial electric users will see their bills go up by \$70,000/yr. more by 2047. These rate increases will also impact county and local governments, schools, churches, hospitals etc... As a result, the taxing bodies will be forced to increase their assessments on businesses and residents to pay for their increased utility costs.

Total Cost

As shown on the chart below, the aggregate cost to all ratepayers if the NJ offshore wind program is implemented as planned will be \$101 billion over the period 2028-2047. The total \$101 billion represents a present value cost of over \$63 billion in 2023\$.



The Whitestrand Consulting Group’s November 2023 analysis proved to be accurate based on the NJBPU’s most recent (third) solicitation. In December of 2022 the NJPBU ignored the Division of Rate Counsel’s advice to scale back how much new offshore wind capacity is approved because of economic and financial uncertainties. During a stakeholder meeting, Rate Counsel Director Brian Lipman stated that “ratepayers simply cannot afford drastically higher electric bills.” Instead, the NJPBU went ahead with its solicitation, and in January 2024, awarded contracts to Attentive Energy LLC and Leading Light Wind LLC, entitling them to receive payments averaging more the 15 cents/kwh for 3742 MW of power over 20 years, compared with the 6 cents/kwh wholesale price of power available to state utilities. As a result of this award for 3742 MW of offshore wind power, the residents throughout the state could pay up to \$20 billion extra for power and see their already high bills increase by up to 20% or more. Besides the cost to residents, the rate impacts to commercial and industrial users will be severe, up to 20% and 30% respectively. The award not only approved automatic 2.5%- 3% annual rate increases, but also a 15% inflation rate adjustment. [Economic-Analysis-of-Attentive-and-Invenergy-Offshore-Wind-Projects-Whitestrand-Consulting-LLC-Feb-2024.pdf \(defendbrigantinebeach.org\)](#)

The NJBPU just issued guidance for the fourth solicitation for offshore wind energy. In this guidance they are also allowing a 15% inflation rate adjustment which will be passed onto rate payers. This inflation adjustment was previously opposed by the NJ Rate Council in the third solicitation as documented in their public comments submitted to the NJPBU. More importantly, the NJPBU is allowing Atlantic Shores Project 1 and Ocean Wind 1, 2 to somehow cancel their contracts already approved for the first and second solicitations in

2019 and 2021 for 3758 MW of energy and resubmit higher cost bids in the fourth solicitation. [Economic-Analysis-of-Rebid-of-Atlantic-Shores1-Project-Whitstrand-Consulting-LLC-3.23.24.pdf \(defendbrigantinebeach.org\)](#)

A highly respected annual report on average energy costs is the Lazard's Levelized Cost of Energy (LCOE). According to Lazard's cost of energy (found on Defend Brigantine Beach website [PowerPoint Presentation \(defendbrigantinebeach.org\)](#)), unsubsidized offshore wind is at least double the cost of onshore wind and natural gas. This does not even account for the high cost of industrial battery storage which is required for intermittent energy because its supply does not follow the cycle of demand. This storage, according to the report, will add another 52% to the cost. This is referred to the "cost of firming intermittency."

Other sources questioning the affordability of offshore wind are:

[For Release: Revised Cost Estimates Show Energy Master Plan Will Cost \\$1.4 Trillion, Sending the State Back to the Drawing Board | Affordable Energy For NJ \(njaffordableenergy.com\)](#)

[AENJ Email 2/20/23: Governing By Press Release | Affordable Energy For NJ \(njaffordableenergy.com\)](#)

[AENJ Email 6/5/23: Back Door Gas Stove Ban | Affordable Energy For NJ \(njaffordableenergy.com\)](#)

V9. [Visit Atlantic City Airshow A Success - Brings Nearly A Half Of A Million People to Atlantic City Atlantic City Airshow to return Aug. 24 \(pressofatlanticcity.com\)](#)

V10. The beaches and ocean view are an attraction and provide a competitive advantage for Atlantic City casinos. Atlantic City is known as a waterfront destination city for casino tourists as a result. Atlantic City remains the 2nd largest casino industry behind Las Vegas. ASOWNJ project and other planned offshore wind projects will have a major adverse impact on the view from the casino ocean front rooms, restaurants, beach bars and other ocean front activities which will be dominated by a large and highly visible array of wind turbine generators. The state of the "bricks and mortar" casino industry in Atlantic City is fragile.

State of Casinos in Atlantic City

- **2006 Peak Revenue at \$5.2 B**
- **Interstate Competition and AC Casino Retrenchment 2014-16: Reduction to 7 from 12 Casinos = Revenue of \$2.6B**
- **2021 Bricks and Mortar = \$2.6B**
- **2021 Internet and Gaming = \$2.1B (45%), Cannibalizing Brick and Mortar Revenue**
- **2023: NY State Casino Market Expansion and Proposed Solution to Invest in AC**

Ocean Front Experience [Atlantic City investments a must as New York casinos loom, gaming panel says \(pressofatlanticcity.com\)](#)

First, the onslaught of online gaming has cannibalized the bricks and mortar casino tourists in Atlantic City. Second, there are 14 licensed casinos in Pennsylvania. Several are in scenic areas such as ski resorts. Others are adjacent to large urban and suburban areas such as Philadelphia. A new, 510,000 square foot casino with 200 hotel rooms was built next to the sports stadiums in Philadelphia. Pennsylvania casinos offer the same

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entertainment and fine dining as Atlantic City casinos. Lastly, the NY State casino market is expanding which will bring more competition to the industry. Local industry experts proposed a solution to invest in Atlantic City’s ocean front experience. The ASOWNJ project is in direct conflict with this solution. [Atlantic City investments a must as New York casinos loom, gaming panel says \(pressofatlanticcity.com\)](https://www.pressofatlanticcity.com).

- The casinos are the major employer of union labor in Atlantic County.

The casino-hotel employment in the County by number of employees as is as follows:

<u>Casino Name</u>	<u>Dated Opened</u>	<u>Total Employees (as of 12/31/21)</u>	<u>Total Employees (as of 12/31/22)</u>
Resorts Casino Hotel ⁽¹⁾	May 1978	1,593	1,643
Caesars Atlantic City Hotel Casino ⁽²⁾	June 1979	2,300	2,561
Bally's Atlantic City Casino Resort	December 1979	1,514	1,462
Harrah's Resort Atlantic City	November 1980	2,497	2,441
Tropicana Atlantic City Resort & Casino	November 1981	2,155	2,094
Golden Nugget Atlantic City ⁽³⁾	June 1985	1,517	1,358
Borgata Hotel, Casino & Spa	July 2003	4,004	4,504
Hard Rock Hotel & Casino	June 2018	3,442	3,448
Ocean Casino Resort	June 2018	<u>2,777</u>	<u>3,285</u>
Total:		21,799	22,796

Source: New Jersey Division of Gaming Enforcement and New Jersey Casino Control Commission

⁽¹⁾ Total Employees for Resorts Casino Hotel include people employed by Resorts Digital Gaming, NJ.

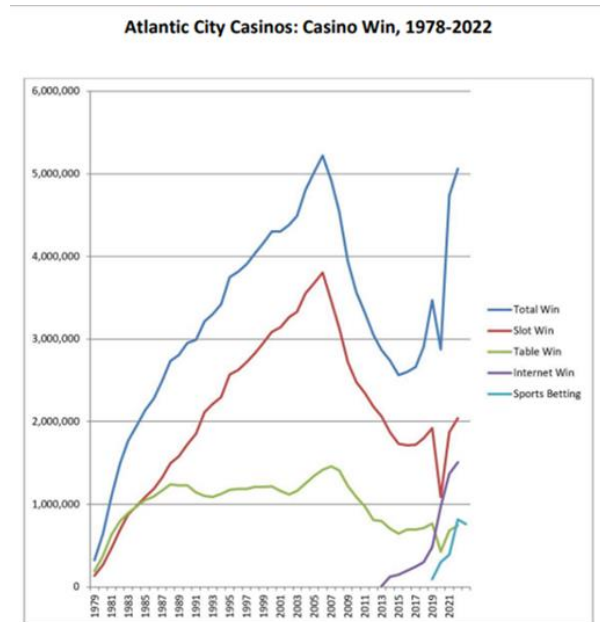
⁽²⁾ Total Employees for Caesars Atlantic City include people employed by Caesars Enterprise Service and Caesars Interactive Entertainment, NJ.

⁽³⁾ The figures for Golden Nugget Atlantic City include people employed by Golden Nugget Online Gaming, NJ.

<https://emma.msrb.org/P11717276.pdf>

- Not only do the Casinos add billions to the tourist economy, but they have also supported billions of dollars in other related industries including construction and manufacturing. Just in the last several years, Casinos have invested \$1 billion in hotel room renovations, constructing new restaurants and updated amenities. If the Casino management and leadership continue to believe that the Atlantic City casino market is sustainable, they will continue to invest in and expand their facilities. The construction created thousands of jobs over the years. Business losses resulting from external factors beyond the casinos’ control - such as the visual impact of wind turbine ocean industrialization - will end further investments in casino facilities. The wind developers and government agencies ignore the potential loss of business development related to casino renovation and construction projects and loss of union construction jobs. [Atlantic City Casino Owners Still Spending Millions On World Class Resort \(playnj.com\)](https://www.playnj.com)
- The casinos are owned by national/international brand casino industry corporations. If the bottom line of the bricks and mortar activities no longer makes business sense, the casino investors will cut their losses in Atlantic City, concentrate on their other casino locations, and there will be further contraction in Atlantic City.

- Fragile state of Atlantic City Casinos and impact on Atlantic County: Casino contraction in 2014-16 resulted in a reduction of casino revenues from \$5.2 billion to \$2.6 billion. This had a significant impact on the local economies. As a result of this contraction, Atlantic City was on the verge of bankruptcy and taken over by the State in 2016. The takeover was renewed by the Governor in 2021. The Atlantic County government debt rose from \$132 million to \$203 million and the equalized value of property fell from \$56 billion to \$35 billion. Atlantic County tax rate is now double the Cape May County rate. The residents now have the burden of filling the gap in taxes caused by the casino contraction. In 2016 the Casino Property Tax Stabilization Act replaced casino property taxes payments in lieu of taxes (PILOT). Currently Casinos are involved in a lawsuit to get the online gaming and sports betting revenues excluded from the PILOT program therefore there is a possibility that future taxes would only apply to bricks and mortar gambling revenues. The final decision will increase the importance of closely examining the impact ASOWNJ projects will have on gambling tourism bricks and mortar operations in Atlantic City. [AC History \(unlv.edu\)](http://unlv.edu)



- This is information from the Atlantic City Bond Rating, which indicates the risk of contraction in the casino industry.

https://www.moody.com/research/Moodys-upgrades-Atlantic-City-NJs-issuer-rating-to-Ba2-outlook-Rating-Action--PR_907843127

FACTORS THAT COULD LEAD TO A DOWNGRADE OF THE RATING

- Contraction in the casino industry
- Material deterioration in reserves and liquidity
- Withdrawal of state oversight and inability to independently manage operations

V11. Offshore Wind Developments' Impact on Residential Property Values

Government Agencies and Wind Developers cite this study to conclude that offshore wind development will have no impact to property values: *Do Views of Offshore Wind Energy Detract? A Hedonic Price Analysis of the Block Island Wind Farm in Rhode Island* (Dong & Lang, Dept of Environmental And Natural Resource

Economics, University of Rhode Island, April 2022). This study is misleading and not relevant to the wind projects off the coast of New Jersey for the following reasons:

- Block Island only has 5 Wind Turbines, Total Height 659 Ft. 3.8 miles from shore Vs. 200 Wind Turbines, Total Height, 1049 starting 8.7 miles from NJ shore.
- Wind turbines area located at Southern End of Island off Rocky Coasts and Cliffs, small strip of beach in area that is residential with homes on very large lots (3-4 acres).
- Wind turbines are located much further and less visibility from popular beaches and large harbor on the other side of the Island.
- Residential housing significantly less dense compared to Jersey Shore: Example, Block Island: 1400 residences in 9.73 sq miles vs. Brigantine: 5328 SFH residences and 3353 multifamily residences in 6.5 sq miles. Block Island view shed of ocean and natural surroundings is much more expansive with only 5 turbines with a significantly smaller area of the ocean landscape.
- Atlantic County Shore towns and Block Island homeowner experiences are not the same.

It is more prudent to use the Lutzeyer et. al., August 2017 study (see **V1.**) to draw conclusions about consumer behavior in the real estate market, given that the Lutzeyer study examined choices that renters made with properties that had views of wind turbines. This study included nighttime views which increased the visual disamenities and avoidance of rental properties with views of the wind turbines. Participants were divided into categories: 55% never wanted a view from a rental property no matter how much rent was discounted, 23% would tolerate some view along with various rent discounts, and 21% would rent with a view all the time. No participants would pay more rent to see the wind turbines. The results from the study used in the calculations on Economic Impact have a 95% confidence level. ([North Carolina State University, the Amenity Costs of Offshore Wind Farms- Evidence from a Choice Experiment](https://cenrep.ncsu.edu/cenrep/wp-content/uploads/2016/03/WP-2017-017.pdf), Lutzeyer et. al., August 2017.

<https://cenrep.ncsu.edu/cenrep/wp-content/uploads/2016/03/WP-2017-017.pdf>) The results of this study are a great cause of concern to those who own real estate at the Jersey Shore, especially owners of beach view properties.

Another report supporting the theory that visible wind turbines would impact real estate values was prepared by Global Insight for the State of New Jersey in 2008 based on a survey completed by the Lieberman Research Group, [New Jersey Shore Opinions About Off-Shore Wind Turbines](https://www.state.nj.us/bpu/pdf/announcements/njoswt.pdf). (*Global Insight, Inc. an Assessment of the Potential Costs and Benefits of Offshore Wind Turbines, prepared for the State of New Jersey, September, 2008* <https://www.state.nj.us/bpu/pdf/announcements/njoswt.pdf>)

Survey visual information in the report for Atlantic County was based on 3.6MW (model first used in Ireland in 2004) wind turbines, hub height of 73.5M vs. 175M (ASOWNJ) and rotor diameter of 104M vs. 280M (ASOWNJ) or 250 Ft. above sea level compared to 1040 Ft. above sea level for Atlantic Shores Project, 3 and 6 miles off the coast of Atlantic City. The number of wind turbines in the study was 80, compared to 200 turbines for ASOWNJ project with a total cumulative impact of 730 visible turbines. Two pictures, clear and hazy days, were shown to participants. Assumption is that the turbines will not be seen from other shore towns outside of Atlantic County. For wind turbines located 3 miles Offshore, 16.5 % of Atlantic County Visitors are more likely not to visit.

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Actual Atlantic Shores wind turbines dimensions are 2.7 times (rotor diameter) and 2.4 (hub height), An extrapolation of the hub and rotor heights translates the 3.0 miles to 8.1 miles. This is very close to the 8.7-mile distance from Brigantine, NJ. Factoring in the distance equivalency and more than double the visible wind turbines for the Atlantic Shores project and 9 times more visible wind turbines for future planned offshore wind projects, number of participants' negative responses are conservative and should be even higher.

The report states that real estate impacts analyzed in the 2003 Renewable Energy Policy Project did not consider the view of premiums which come into play, especially the value of an ocean-view or ocean front house. It is those premiums that Global Insight examined. Global Insight group provides the following analysis:

"The oceanfront premium is examined as, in many surveys and environmental impact statements; it is the impact of wind farms on the view that is considered one of the biggest drawbacks of wind farms. In addition, there exists significant literature stating that an ocean view/oceanfront house adds to the value of that property."

According to the Lieberman Research Group Survey, "of all the disadvantages mentioned, esthetic issues (a wind farm would be "ugly" or an "eye sore" and it would obstruct the ocean view) were mentioned most often. In FACT, OF THE 66% of respondents that mentioned a disadvantage to the wind turbine project, 32% of the total mentioned the impact of the wind farm on the ocean view."

The percentage of respondents who were shown views comparable to 1040 ft high wind turbines, 8.7 miles from the beach, 45% mentioned view issues.

"On Barrier islands, we well as other beachfront communities, the distance from one's residence to the beach is strongly connected to the property price. Although scenic views are desirable, the single most important attribute for vacationing families is: how close is the beach? In a recreation- oriented beach community, this question is answered in blocks or even better, in the number of houses from the beach."

In the 2004 study, buyers were willing to pay 46% premium on a beach block home and 156% premium for a beach front home in Stone Harbor and Avalon. A similar study in Washington State found that oceanfront view added 147% to value, ocean views added 32% and partial ocean views added 10%. A 2000 study for Long Beach Island homes also confirmed that after controlling for all other aspects that add value to an island house, a variable for distance to the beach is included to ascertain the willingness to pay for one additional house closer. ([Value of Ocean Proximity on Barrier Island Houses](#), Appraisal Journal (April 2000); [The Beach Study: An Empirical Analysis of Distribution of Coastal Property Values](#), <http://forms.gradsch.psu.edu/equity/mcnair/2003/major.pdf> ; [Influence of Canadian Investment on U.S. Residential Property Values](#), Journal of Real Estate Research, 2003)

The views of the offshore turbines impact on real estate values are examined using the Brigantine NJ community as an example. Brigantine tax office property files were used as the basis of the analysis. Records were eliminated that were not single family and multifamily residences. Vacant land, exempt

properties, and properties with zero value were eliminated. Through Google Earth and physical inspection, properties were identified that were beach front and beach view, and records were coded according to their category. Single-family homes and multifamily homes were examined in separate files. The multifamily homes could be a unit in a duplex or part of a multistory, multibuilding resort like community. The value of the properties was based on the assessed value of land and property improvements and adjusted for the Equalized Value published by Atlantic County each year. A further adjustment to the values was made to account for the price listed on Zillow website based on the average price difference of a sample of 270 properties. The results of the final base line data are in the table below:

Brigantine Residential Property Analysis				
	Properties	(\$ Billions)	Avg \$	Zillow \$
Single Family Residences	5,328	\$3.4	638,138	797,673
Multifamily Residences	3,353	\$1.2	357,888	447,361
	8,681	\$4.6	529,893	662,366
Properties with Beach View				
Beach Front Single Family	116	\$0.2	1,724,138	2,155,172
Beach Block Single Family	649	\$0.6	924,499	1,155,624
Subtotal	765	\$0.8	1,045,752	1,307,190
Beach Front Multifamily	777	\$0.3	386,100	482,625
Total	1,542	\$1.1	713,359	891,699
Properties without Beach View				
Single Family Residence	4,435	\$2.9	653,890	817,362
Multifamily Residence	2,704	\$0.9	332,840	416,050
Excludes 187 vacant land properties, \$58 million				
Avg\$: Property Values = Assessment/.7357 (Eq Value Factor)				
Zillow Property Values are 25% higher on average based on sample of 270 homes				

An analysis was prepared using the method used in the 2008 Global Insight Report (Footnote V3). The methodology was based on the calculation of percentage increases in real estate based on premiums paid for beach view properties. The premium percentages were based on the 2004 Penn State study of homes in Avalon, New Jersey. Brigantine The Avalon ocean views and beaches are very similar. Brigantine housing density is somewhat less than Avalon's but overall ocean views are the same. Therefore, the premium percentages can be applied to the Brigantine real estate values to calculate the impact of the 180-degree view of 1040 Ft. high wind turbines, starting 8.7 Miles off the Brigantine beaches.

Using an oceanfront premium of 156% makes the value of a Brigantine single family home residential property worth \$2 million (based on Zillow values). A residential ocean view property would be worth \$1.2 million and a property in proximity to the ocean would be worth \$877,000. Our own data and calculations of average home values for single family homes are very similar to the "premiums" calculated in the Avalon study. The table also lists the calculation for the multifamily premiums.

The assumption used by Global Insight's analysis was that "a property can only 'fall' one category as the result of wind turbines being placed offshore. Said differently, the value of an oceanfront property can drop no lower than the value of an ocean-view property. Similarly, an ocean-view property whose value is affected by the

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wind farm will drop no lower than a house in proximity to the ocean. Logically this makes sense as the homeowner will still be in proximity to the ocean with its breezes and the easy walk back even if the homeowner’s total view is affected by the wind turbines.” Since we do not have a count on multifamily homes within proximity to the ocean, the calculation is prepared with both premium amounts to provide an upper and lower range of losses.

Brigantine Residential Property Analysis 2023			
		Equalized Assessed Value	Zillow Value
Residential Parcels Single Family Homes 2023		5328	5328
Value of Residential Home 2023		\$3,400,000,000	\$4,250,001,744
Average Value of Residential Home 2023		\$638,138	\$797,673
Average Value of Ocean Front Property	156% View Premium	\$1,633,633.63	\$2,042,042.88
Average Value of Ocean View Property	46% View Premium	\$931,681.68	\$1,164,602.58
Average Value of Ocean Proximity property	10% Premium	\$701,951.95	\$877,440.30
Ocean Front Housing			116
Ocean View Housing			649
Premium Loss Ocean Front Per Home		-\$701,952	-\$877,440
Premium Loss Ocean View Per Home		-\$229,730	-\$287,162
Total Premium Loss		-\$230,521,021	-\$288,151,395
Residential Parcels Multifamily Homes 2023		3353	3353
Value of Residential Home 2023		\$1,199,998,464	\$1,500,001,433
Average Value of Residential Home 2023		\$357,888	\$447,361
Average Value of Ocean Front Property	156% View Premium	\$916,193.28	\$1,145,244.16
Average Value of Ocean View Property	46% View Premium	\$522,516.48	\$653,147.06
Average Value of Ocean Proximity property	10% Premium	\$393,676.80	\$492,097.10
Ocean Front Housing			777
Premium Loss Ocean Front to Ocean View		-\$393,677	-\$492,097
Premium Loss Ocean Front to Ocean Proximity		-\$522,516	-\$653,147
Total Premium Loss Ocean Front to Ocean View	Scenario 1	-\$305,886,874	-\$382,359,447
Total Premium Loss Ocean Front to Ocean Proximity	Scenario 2	-\$405,995,305	-\$507,495,266
Possibly Value Loss Maximum	Scenario 1	-\$536,407,895	-\$670,510,841
Possibly Value Loss Maximum	Scenario 2	-\$636,516,326	-\$795,646,660

Based on Zillow values, the impact to real estate could be a reduction of \$670 - \$795 million for Brigantine. For single family homes alone, real estate value reduction is \$288 million (Zillow value). The Global Insight analysis includes an additional step assuming that the reduction would be less if a property did not have a 180-degree view of the wind turbines. The calculation assumed that an oceanfront property has a view that covers about 180 degrees. According to Global Insight, “If a wind farm was built directly off the shore only three miles away, it would impact about 45 degrees of that view, or about a quarter of its view. The property would lose 25% of the premium due to the wind farm. To adjust for the “degrees of impact”, the total loss maximum was multiplied by 25% to arrive at the reduced loss amount.”

In Brigantine, there will be 730 wind turbines in view, starting 8.7 miles off the coast in Brigantine in all directions. BOEM has not measured “the degrees of impact” for the cumulative effect of the ASOWNJ project and future proposed offshore wind turbines. Therefore, no adjustment was made for the degrees of impact.

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The results of the calculations have a major impact on the financial wellbeing of the residents of Brigantine and can be applied to every ocean front community with visible offshore wind turbines in Atlantic County, Cape May County, and Ocean County. The loss of property values will also impact the County and City/Municipal tax revenues as owners appeal the assessed value of their properties, and there will be less incentive to renovate, build and rebuild properties with ocean views. Lastly this study assumes that there will be no impact to properties that do not have a view of the Ocean. In Brigantine, the beach is walkable from at least one half of its homes. The width of the island is on ½ mile. If the homeowners' reason for purchasing a home is to enjoy the beach's pristine views, this incentive will be eliminated because of the view of 730 wind turbines starting 8.7 miles off the beach in all directions. The impact on the housing market in Brigantine could be much greater than a reduction in value of \$670- \$795 million based on Zillow market values in 2023.

Below is a table of the calculation of the reduction in residential property values for all coastal communities in Atlantic County based on the percentage reductions of property values in Brigantine. These numbers are based on the equalized value of property which is lower than the Zillow market values. The assessed and equalized values are used in this table since the county tax assessments are based on the equalized values and local and schools use the assessed values. Please note that the impact to the financial well-being is even greater since the true market value is typically higher than the assessed and equalized values based on the sample comparison of homes on Zillow.com.

Based on the Brigantine loss analysis, residential property values will be reduced anywhere from 12-14% or an average of 13%. Using the 13% reduction for all the coastal communities, this results in a loss of \$2.2 billion in the equalized value of real estate in the Atlantic County coastal towns of Brigantine, Atlantic City, Long Port, Margate and Ventnor. Atlantic County will lose \$9.4 million in taxes for their general budget and \$800,000 in taxes to support their libraries, health services and open space. As the coastal town property values drop, the in-land communities will be forced to absorb more of the county tax assessment. Total tax loss across the county coastal community school districts will be \$10 million and coastal community local budgets will lose \$15.6 million. Total tax loss is estimated to be \$36 million for the County, school districts and local governments because of lower residential property values in the coastal communities. The governments will be faced with a decision to further increase taxes, reduce services or a combination of both alternatives. What source of revenue will the offshore wind industry provide to these government bodies to offset the loss in taxes from reduced residential property values?

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Impact of Offshore Wind Projects to Residential Property Values and Local Taxes						
	Brigantine *	AC	LP	MARG	VENTNOR	TOTAL
residential assessed value**	3,311,289,600	1,318,649,953	1,856,802,200	3,807,540,500	2,019,296,700	12,313,578,953
residential value equal rate	4,502,669,283	1,773,599,513	2,364,220,888	5,578,174,100	2,441,402,884	16,660,066,668
number of properties	8,680	10,759	1,584	6,703	6,388	34,114
average value (eq)	518,741	164,848	1,492,564	832,191	382,186	488,365
Asssed Value Loss						
loss low	(394,477,536)	(157,092,205)	(221,202,868)	(453,596,446)	(240,561,015)	(1,466,930,069)
loss high	(636,516,326)	(250,723,510)	(334,216,239)	(788,554,224)	(345,127,012)	(2,355,137,311)
Average loss	(515,496,931)	(203,907,857)	(277,709,554)	(621,075,335)	(292,844,013)	(1,911,033,690)
Equalized Value Loss						
loss low	(536,407,895)	(211,290,841)	(281,652,209)	(664,533,955)	(290,846,984)	(1,984,731,883)
loss high	(636,516,326)	(250,723,510)	(334,216,239)	(788,554,224)	(345,127,012)	(2,355,137,311)
Average loss	(586,462,110)	(231,007,175)	(307,934,224)	(726,544,089)	(317,986,998)	(2,169,934,597)
high% property loss	-12%	-12%	-12%	-12%	-12%	-12%
low% property loss	-14%	-14%	-14%	-14%	-14%	-14%
County Tax Rate	4.39	3.76	4.38	4.38	4.39	
County loss taxes	(2,572,192.14)	(869,681.28)	(1,349,558.74)	(3,185,627.05)	(1,394,730.03)	(9,371,789)
						-5%
Libraries, Health Svcs, Open Space Tax Rate	0.57	0.05	0.25	0.25	0.57	
Tax Loss	(331,358.93)	(10,842.60)	(78,296.56)	(184,811.35)	(179,674.43)	(784,984)
						-4%
School District Tax Rate	4.91	14.57	0.77	3.05	8.39	
Tax Loss	(2,531,985.17)	(2,971,742.86)	(212,828.14)	(1,891,921.33)	(2,456,155.60)	(10,064,633)
	-15%	-8%	-14%	-16%	-14%	
Municipal Budget Tax Rate	6.83	15.93	3.99	6.65	12.23	
Tax Loss	(3,520,934.46)	(3,248,834.79)	(1,106,896.31)	(4,128,715.62)	(3,581,236.68)	(15,586,618)
	-15%	-8%	-14%	-16%	-14%	
Total County and Local Tax Loss	(8,956,470.70)	(7,101,101.54)	(2,747,579.75)	(9,391,075.34)	(7,611,796.74)	(35,808,024.07)
2023 ASSESSMENT, ATLANTIC COUNTY						
* BRIGANTINE BASED ON DETAILED PROPERTY LOSS ANALYSIS						
** Excludes vacant land and apartments greater than 4 units						

The analysis reveals that residential property values are adversely and measurably impacted by the proximity of the industrial- scale of planned wind energy turbine projects. There will also be a serious impact on the use and enjoyment of many homes in our communities. The approval of wind energy projects within such a proximity to occupied homes is tantamount to an inverse condemnation, or regulatory taking of private property rights, as the views and noise are in some respects a physical invasion resulting in a forced reduction in property values.

Conflicts of Interest, and Inadequate Studies, Disregard of NJ Blue Ribbon Panel Report, and Misinformation on the Visual Impact and Tourism Impact in the 2012 EA During the Determining the Location of the New Jersey Lease Areas, and the Determination of the Impacts in the ASOWNJ Project COP.

1. 2004 New Jersey Offshore Wind Energy: Feasibility Study

[New Jersey Offshore Wind Energy: Feasibility Study, Final Version \(With NJ DEP Comments\) \(rutgers.edu\)](#)

- Report prepared by Atlantic Renewable Energy Corporation, a developer of wind powered generation projects and AWS Scientific Inc, a renewable energy engineering and advisory services firm for NJ Bureau of Public Utilities.
- The wind energy area deemed **viable for offshore wind development** was 1223 nm² in water up depths of 100 ft which extended 20 miles from the shore.
- Minimal changes were made to the wind energy area recommended in this report up to and including the time the wind energy areas were finalized and leased in 2015.

2. New Jersey’s 2006 Blue Ribbon Panel Report

- Included Guiding Principles for Tourism/Economic Impact/Aesthetics and Recommendation
- By Executive Order, in 2004, the Governor of New Jersey authorized a ***State of New Jersey Blue Ribbon Panel on Development of Offshore Wind Turbine Facilities***
- Per the Executive Order, “The State of New Jersey has Federal Consistency review authority pursuant to Section 307 of the Coastal Zone Management Act, 16 U.S.C. 1451 et seq., for activities occurring in its coastal zone and in Federal waters where there is a reasonably foreseeable effect on the uses and resources of New Jersey's coastal zone.”

Guiding Principles for Development of Renewable Technologies in New Jersey

Tourism/Commercial Ocean Uses	Development of renewable technologies, including offshore wind turbine facilities, must not cause unacceptable economic impact, including unacceptable impact to tourism and related industries, or to the commercial and recreational fisheries.
	Development of renewable technologies, including offshore wind turbine facilities, must not create unacceptable aesthetic impact, particularly in the viewsheds of state or federal parks and natural areas.

[Blue Ribbon Panel on Development of Wind Turbine Facilities in Coastal Waters Final Report.pdf \(nj.gov\)](#)

3. 2008-09, 2010 Ocean/Wind Power Ecological Baseline Studies (OWPEBS) offshore New Jersey.

“Study Area” Defined in the 2007 Solicitation for Consultant RFP

Study Area

The contractor shall perform work within the confines of the Study Area. The Study Area (Figure 1) is defined as the waters offshore of the coast of New Jersey starting from the shoreline and continuing out to 20 nautical miles offshore (approximate 100-foot depth contour). This zone will be surveyed from the area adjacent to Seaside Park (approximate latitude/longitude 39° 55' 56" N, 74° 04' 10" W) south to Stone Harbor (approximate latitude/longitude 39° 01' 58" N, 74° 46' 11" W) and extending 20 nautical miles perpendicular to the shoreline. This area is approximately 1,360 square nautical miles (i.e., 68 x 20 nautical miles) in size and excludes Delaware Bay and areas off the New Jersey coast with known major constraints for offshore wind power (e.g., air-restricted zones, significant water habitat, shipping lanes).

- **Call Study Exclusions: Areas of the OWPEBS study area excluded from the Call Area:** (see 76 FR 22130): • “no build areas” such as shipping lanes, traffic separation schemes, pipelines and cables, artificial reefs, and shipwrecks; • areas of high avian density (particularly in shoals and within 7 nm of the New Jersey coast); • areas of high marine mammal and sea turtle density; and • fishing hotspots for recreational and commercial fishermen.

4. New Jersey Renewable Energy Task Force

[Renewable Energy Task Force Meetings | Bureau of Ocean Energy Management \(boem.gov\)](#)

The NJ task force was called the Minerals Management Service (MMS) New Jersey Task Force. The New Jersey Project Coordinator of the Office of Offshore Alternative Energy Programs headed the task force. Task Force Meeting Dates: 11/24/09, 5/12/10, 11/19/10, 12/18/12, 1/28/14, 4/22/14, 5/19/16, 12/4/17

Roster of the New Jersey Renewable Energy Task Force [Task Force Membership List \(boem.gov\)](#)

Roster: 33 Federal Elected and Agency Officials, 26 State Elected and Agency Officials, 52 Mayors

Typical Meeting attendance: lists available for Meeting 1 and Meeting 3 – 29 Federal & State Agency Officials, 2 Indian Tribe Officials, 1 local Commissioner of Economic Development, 3 Offshore Wind Development Company Observers

Task Force Parameters

“The Task Force membership cannot alter the Regulatory Framework or the established leasing processes, but it can provide input on how these processes are implemented. MMS will consider Task Force member input as it makes its renewable energy leasing decision.” [Microsoft PowerPoint - NJ Task Force Meeting 111809 \(boem.gov\)](#)

Studies (in addition to OWPEBS) Presented at Task Force Meetings

National Renewable Energy Laboratory (NREL) prepared 2 studies for the Task Force:

Hired by BOEM for studies, NREL is a national laboratory of the US Dept of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC, co-managed and governed by Battelle and MRIGlobal.

Studies by NREL Previous to Task Force (Slide 9, see link below for Study 1.):

Assessment of Offshore Wind Energy Resources for the United States, June 2010

<https://www.nrel.gov/docs/fy10osti/45889.pdf> AND **Large-Scale Offshore Wind Power in the United States**, Sept 2010 <https://www.nrel.gov/docs/fy10osti/45889.pdf>

NREL Studies Presented at Task Force Meetings

1. **Proposed Methodology for New Jersey Offshore Leasing Zone Delineation 12/18/12** [Slide 1 \(boem.gov\)](#)

- a. The focus was to help delineate leasing zones within the WEAs by focusing on balance wind resource, assessing buffer zones and maximizing energy potential. (slide 4)

- b. **Objective:** Create 3-5 development zones within the BOEM specified New Jersey Wind Energy Area (WEA) (slide 11)

2. *Final Presentation to New Jersey Renewable Energy Task Force on Leasing Area Delineation Studies*

1/28/13 [PowerPoint Presentation \(boem.gov\)](#)

- a. Topics included “NJ “Call” summary, physical description of NJ WEA, NJ WEA analysis of wake loss and energy analysis.” (Slide 2)
- b. “Focus was on wind resource, energy potential, bathymetry, and wake effects and capacity factor after wake losses with a goal to produce development zones with similar value.” (Slide 1, 8)
- c. **All calculations assume a 10D X 12D (10D = 1260 meters) spacing and a 5 MW wind turbine with a 126m diameter rotor.** (Actual turbine generator specifications as of 2022: Ocean Wind I project is using 12 MW WTG and Atlantic Shores project is using 15 MW WTG)

5. 2012 Environmental Assessment and Finding of No Significant Impact

[OCS EIS/EA BOEM 2012-003](#) Actual Information included in Final EA regarding tourism and recreation: (PG 132 and tables on PG 134, 135)

*Final Environment Impact Study (EIS) was completed before studies on Economy and Tourism were completed and included **this misinformation** which was never revised until the visual impact study was released by Atlantic Shores Wind Developer in 2022:*

“Wind Turbines will be virtually invisible.”

“Most of the meteorological towers would not be visible from the shore.”

“Detrimental impact to tourism and recreation is unlikely.”

“Recreational fishing activities will not be measurably impacted over any substantial period of time.”

“Impact would be of short duration, limited area, and temporary, and result in negligible, if detectable, impact to fishing.”

4.1.3.2.2 Impact Analysis of Alternative A

Routine Activities

“Impacts on recreational resources are not anticipated in connection with Alternative A. As discussed in Section 4.1.3.5, existing ports or industrial areas are expected to be used by vessels associated with Alternative A. Expansion of these existing facilities is not anticipated. **Due to the distance to shore of the WEAs, it is estimated that most of the anticipated meteorological towers would not be visible from shore (see Section 3.1.3, Visual Aesthetics – note, this is missing from the EA Report). The few meteorological towers located nearer to shore would be virtually invisible from shore due to the anticipated widths of these structures, and to the nominal atmospheric conditions offshore of the Atlantic coast.** It is most likely that vessel traffic associated with Alternative A would use established nearshore traffic lanes. Chapter 5.2.22 of the Programmatic EIS concluded that, as tourism and recreation exists in its current state in the context of existing military, commercial, and recreational water and air vessels that currently traverse these coastal areas, **it is unlikely that there would be any detrimental impact on tourism and recreation from the**

additional vessels associated with Alternative A. No information has been presented that would tend to invalidate the analysis in the Programmatic EIS.”

4.1.3.6 Commercial and Recreational Fishing Activities (see report for description of activities)

Conclusion

“The increase in vessel traffic, and activities related to the installation/operation of the meteorological towers and buoys **would not measurably impact commercial or recreational fishing activities, total catch of fish and shellfish, or navigation over any substantial period of time.** Any impacts, such as localized fishing displacement and/or target species availability within the immediate area of activities associated with Alternative A, would be of **short duration, limited area, and temporary, and result in negligible, if detectible, impact to fishing.**”

The Federal Register announcement states that the WEAs were identified by BOEMRE with input from State Renewable Energy Task Forces and other Federal Agencies.. WEAs may have been adjusted based on input during **THE 2010 CALL.** **For New Jersey, the WEA is identified as:**

“The proposed area offshore New Jersey begins 7 nautical miles from the shore and extends roughly 23 nautical miles seaward **(or the approximate 100 ft depth contour)** and extends 72 nautical miles along the Federal/state boundary from Seaside Park south to Hereford Inlet. The entire area is approximately 418 square nautical miles and contains approximately 43 whole OCS blocks and 34 partial blocks.”

In December 2012

Result Revised: As a result of subsequent discussions with the U.S. Coast Guard (USCG), the **New Jersey Renewable Energy Task Force, and maritime stakeholders** in, **BOEM decided to remove certain OCS Lease Blocks from the area offshore New Jersey studied in the EA to alleviate navigational safety concerns resulting from vessel transits out of New York Harbor (see 79 FR 42361).**

This revised area constitutes the NJWEA. **The NJWEA was divided into two leasing areas: Lease Area OCS-A 0498 and Lease Areas OCS-A 0499.**

“As a result of its analysis in the final EA, BOEM issued a **Finding of No Significant Impact (FONSI).** The FONSI concluded that the environmental impacts associated with the preferred alternative **would not significantly impact the environment;** therefore, the preparation of an environmental impact statement (EIS) is not required.”, but in May 2023 **BOEM issues a Finding of Adverse Effect for the Atlantic Shores Offshore Wind South Project Construction and Operations Plan**

6. **BOEMRE published its Commercial Leasing for Wind Power on the Outer Continental Shelf Offshore New Jersey – Call for Information and Nominations. 4/20/11 76 FR 22130 [2011-9545.pdf \(govinfo.gov\)](#) Reference to Wind Energy Area in the “Call”:**

A detailed description, including block numbers, of the Wind Energy Area is on page 22134-22317 of 76 FR 22130 Excerpts include:

“The area under consideration for commercial leasing is located off the coast of New Jersey, beginning approximately 7 nautical miles (nmi) from the shore, extending roughly 23 nmi seaward **to the approximate 100 ft depth contour,** and extending 45 nmi parallel to the Federal/State boundary between Avalon and Barnegat Light.

This area is approximately 418 square nmi and contains approximately 43 whole OCS blocks and 34 partial OCS blocks. This area was delineated in consultation with the BOEMRE/[New Jersey Renewable Energy Task Force](#)" (given misinformation)

In the ASOWNJ COP, Atlantic Shores, LLC made impact determinations using studies with little to no external validity to the Jersey Shore as follows:

1. Atlantic Region Wind Energy Development Recreation and Tourism Economic Baseline Development Impacts of Offshore Wind on Tourism and Recreation Economics, BOEM, 2012

Study drew its conclusion of "no negative impact" from referencing (25 times) the Horns Rev 2 Project in the North Sea off the coast of Denmark with of a scope of 91 Siemens SWT 2.3-93 wind turbines that were much smaller than the size of NJ wind energy turbines and project location was greater distance from coastline. [atlantic-region-wind-energy.pdf \(noaa.gov\)](#)

Project	Distance form Coast	Size (Blade Diameter)
Horns Rev 2	18 Miles	93 Meters
Ocean Wind 1,2	9 Miles	220 Meters
Atlantic Shores N, S	9 Miles	280 Meters

2. Atlantic Offshore Wind Energy Development: Values and Implications for Recreation and Tourism, Parsons & Firestone, University of Delaware for BOEM, March 2018 [5662.pdf \(boem.gov\)](#)

- The wind turbines shown in the survey were only 579 feet tall compared to the actual size that will be used in future projects which is 851 - 1046 feet tall.
- 35% of survey respondents were not beachgoers.
- Survey respondents, who said the view would be worse, were asked: "How certain they were?" Their responses were adjusted downward for any uncertainty.
- Survey respondents who said the view would be better were NOT asked any follow-up questions.
- The study showed nighttime views to respondents but did not report the results. Other studies (<https://cenrep.ncsu.edu/cenrep/wp-content/uploads/2016/03/WP-2017-017.pdf>) have shown nighttime visualizations and the opposition increased dramatically compared to daytime views.
- The University of Delaware Study says property values would fall, but no details were provided.

In March 2021, one of the two study's authors, George R. Parsons, stated publicly that the Study was no longer useful because of the increased height of the planned turbines.

<https://delawaretoday.com/life-style/skipjack-windfarm/>) Energy Updates | Caesar Rodney

3. Analysis of the Effects of the Block Island Wind Farm on Rhode Island Recreation and Tourism Activities (BOEM, Smythe Et. Al., University of Rhode Island, Dec 2018)

- 5 Wind Turbines, Total Height 659 Ft. 3.8 miles from shore Vs. 200 Wind Turbines, Total Height, 1049 starting 8.7 miles from NJ shore.
- Wind turbines area located at Southern End of Island off Rocky Coasts and Cliffs, small strip of beach in area that is residential with homes on very large lots (3-4 acres).
- Wind turbines are located much further and less visibility from popular beaches and large harbor on the other side of the Island.
- Residential housing significantly less dense compared to Jersey Shore: Example, Block Island: 1400 residences in 9.73 sq miles vs. Brigantine: 5328 SFH residences and 3353 multifamily residences in 6.5 sq miles. Block Island view shed of ocean and natural surroundings is much more expansive with only 5 turbines with a significantly smaller area of the ocean landscape.
- Atlantic County Shore towns and Block Island homeowner experiences are not the same.

4. The University of New Hampshire Department of Recreation Management and Policy, 2020 Study

Ferguson Ph.D., Michael D., Lauren A. Ferguson, Ph.D., Clayton R. Mitchell, Ph.D., and Tasha L. Dooley, M.S. 2020. Assessing Recreationists' Perceptions of Offshore Wind Energy Development in New Hampshire: Final Report. Department of Recreation Management and Policy, The University of New Hampshire. February 5, 2020.

- Wind developers and government agencies use this 2019 survey to argue that 77% of recreational activity participants in the New Hampshire study (N= 553) support offshore wind and 43% said it would not impact their outdoor activities.
- The survey method section in the report, did not include any statements that the participants were shown any visual simulations of the wind turbines off the shore.
- Other peer reviewed studies conclude that visual simulations have a statistically significant negative impact on participants' support for offshore wind turbines and to participants' beach activity experience and choices. Therefore, the New Hampshire study excludes a critical step in measuring support for offshore wind and it invalid to the examination of impacts on tourism.
- This same survey was also published in *Energy Research Social Science Journal* but in the study methods section, a statement was made that 50% of participants were shown the visual impact (100 turbines, height of 579 ft. and 10 miles off shore) which was the visualization used in the Parsons & Ferguson Study, 2018. The statement regarding the use of the visual in the methods section of this study is highly suspect and is inconsistent with the same exact survey in the 2020 study. Because of this inconsistency, this study is not credible. Michael D. Ferguson, Darrick Evensen, Lauren A. Ferguson, David Bidwell, Jeremy Firestone, Tasha L. Dooley, Clayton R. Mitchell. Uncharted waters: Exploring coastal recreation impacts, coping behaviors, and attitudes towards offshore wind energy development in the United States, Energy Research & Social Science, 75 (2021)

LACK OF SOLUTION FOR RADAR INTERFERENCE AND OTHER NATIONAL SECURITY IMPACTS

Since 2010, BOEM has known the impact of the lease areas will have on the Department of Defense and national security. There has been no evidence, 13 years later, in the COP for ASOWNJ that a viable solution has been found.

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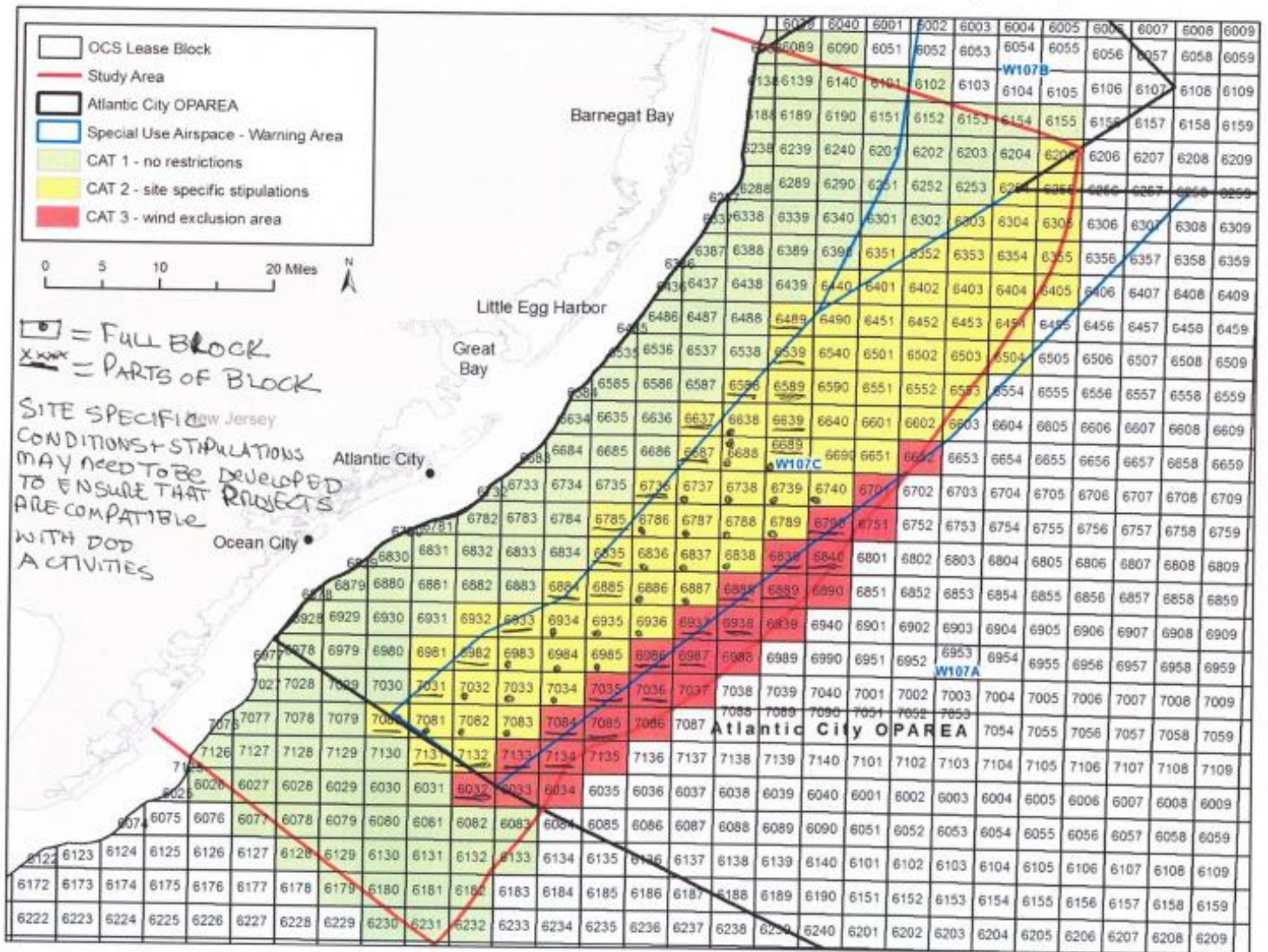
On November 19, 2010 the third BOEM New Jersey Task force meeting was held in Trenton, New Jersey to discuss potential areas of interest for renewable energy development on the OCS offshore New Jersey. The Department of Defense presented the areas of concern to the Task Force.

[Third Task Force Meeting | Bureau of Ocean Energy Management \(boem.gov\)](#)
[Microsoft PowerPoint - DoD offshore activities NJ TF mtg 19NOV2010.ppt \(boem.gov\)](#)

On 4/20/2011 BOEM released the Federal Register Call Area Vol. 76, pg 22130-22139.
[2011-9545.pdf \(govinfo.gov\)](#)

According to the information in the FR, Designation of Full Blocks and Partial Blocks where "site specific conditions and stipulations may need to be developed to ensure that projects are compatible with DOD activities" per page 22136 of above link and marked by hand by a member of the Defend Brigantine Beach Community group on DOD map below.

Department of Defense Draft Assessment – New Jersey Proposed RFI



In February 2012, **BOEM** published an **Environmental Assessment (EA)**. In the EA, BOEM provided a statement about the impact to DOD activities but could be mitigated based on nothing but a “personal conversation” with a Mr. or Ms. Engle of the DOD.

Final Report : Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore New Jersey, Delaware, Maryland, and Virginia Final Environmental Assessment, January 2012

[OCS EIS/EA BOEM 2012-003](#)

4.1.3.7 Other Uses of the OCS 4.1.3.7.1

Description of the Affected Environment

Military Activities (Related to New Jersey)

“The Atlantic City OPAREA is an area used for surface, sub-surface and air warfare training exercises located off the coast of New Jersey (Global Security, 2011). Approximately 40 OCS blocks in the New Jersey WEA are located in Warning Area 107A (W-107A) and roughly 1 ½ OCS blocks are located in Warning Area 107C (W-107C). The W-107A and W-107C areas are designated special use airspace over the Atlantic City OPAREA and are used for surface-to-air gunnery exercises using conventional ordnance and exercises (Global Security, 2011).”

4.1.3.7.2 Impact Analysis of Alternative A (related to New Jersey)

“BOEM consulted with the DOD on Alternative A of this EA. On May 2, 2011, the DOD responded that the impact to the Navy's training areas and other DOD activities from site characterization surveys and installation, operation and decommissioning of meteorological towers/buoys offshore Delaware, New Jersey, Maryland, and Virginia could be mitigated given site specific stipulations in consultation with the DOD (Engle, personal communication, 2011).”

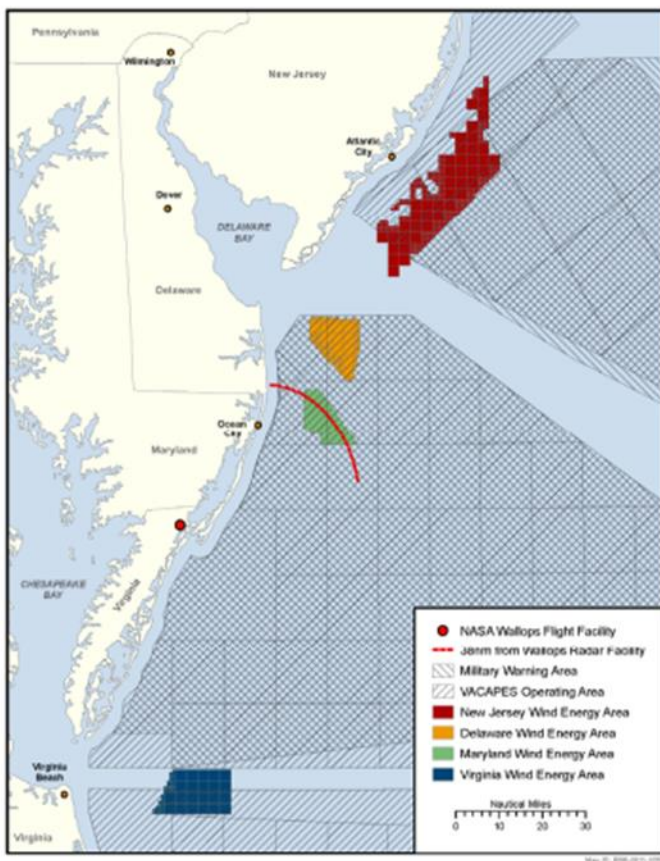
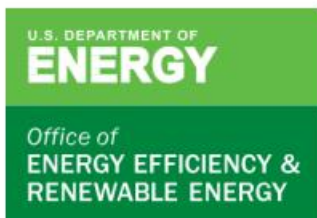


Figure 4.5. Military Activity Areas and Uses.

In 2019 US Department of Energy released this information, seeking to resolve the radar issue by 2025.

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For more information, visit:
energy.gov/eere/wind

DOE/EE-1961 • March 2019

“Under a Memorandum of Understanding signed in 2014 and building off the successful Interagency Field Test & Evaluation radar mitigation testing campaigns, a consortium of federal agencies composed of the U.S. Department of Defense (DOD), the U.S. Department of Energy (DOE), the Federal Aviation Administration (FAA), and the National Oceanic and Atmospheric Administration (NOAA) established the Wind Turbine Radar Interference Mitigation (WTRIM) Working Group (WG) to address these conflicts. The Department of Homeland Security (DHS) and the Bureau of Ocean Energy Management (BOEM) are observers of the WTRIM Working Group. Through collaborative activities and coordinated investments, **the WTRIM Working Group seeks, by 2025, to fully address wind turbine radar interference as an impact to critical radar missions**, ensure the long-term resilience of radar operations in the presence of wind turbines, and remove radar interference as an impediment to future wind energy development. DOE partners with multiple laboratories (Sandia National Laboratories, Lawrence Berkeley National Laboratory, and MIT Lincoln Laboratory) who assist in these efforts.”

A 2022 study from the National Academy of Sciences concluded wind development would create "interference with marine vessel radar, which is a critical instrument for navigation, collision avoidance, and use in search and rescue missions." Finnish and Taiwanese military brass have also expressed concerns about the effects offshore wind farms could have on their defense capabilities.

In April of 2023 the Pentagon stated that Offshore Wind projects are highly problematic.

<https://www.bloomberg.com/news/articles/2023-04-17/pentagon-calls-biden-wind-farm-plans-problematic-for-us-military>

Lack of Rigorous Examination of Impact on Avian Population

Piping Plover and Red Knot

The COP presents no assessment of the turbine collision risk to the local endangered piping plover and red knot population that nests on the Island and must now cross the wind complexes to get there and back to its offshore migration routes. It discusses the existence of a preliminary biological assessment (BA) prepared for 112 consultation under the Endangered Species Act but presents no results of that analysis in the COP. It says that the final biological assessment will be available in the final EIS but that prevents the public from reviewing and commenting on this important impact. This is another example of lack of full disclosure and lack of coordination with other environmental reviews to the fullest extent practicable. This is another impact that must be presented.

As of 2015, the region comprised of North Brigantine Natural Area and the Holgate and Little Beach Units of the Edwin B. Forsythe National Wildlife Refuge accounted for the other significant concentration of breeding pairs in the state (43 pairs or 40% of the statewide total).

The Holgate and Little Beach units of E.B. Forsythe National Wildlife Refuge continued as the stronghold of the state's population with the largest percentage of pairs (54 pairs or 46%). Combined with the state's North Brigantine Natural Area, these three sites connect a large portion of New Jersey's undeveloped coastline and play a critical role in the recovery of this species in the state (55 pairs or 47%).

One hundred and eighteen (118) pairs of piping plovers nested in New Jersey in 2022, a 14% decrease in population size compared to 2021 (137 pairs). The population was slightly above the statewide long-term average (117 pairs) and was the second highest recorded pair number over the last decade. Statewide productivity in 2022 (0.85 fledglings/pair) was below the long-term average (1.04 fledglings/pair) and below the federal recovery goal (1.50 fledglings/pair). This was the second consecutive year statewide productivity dipped below 1.00 fledglings/pair since 2013. Little Beach and North Brigantine Natural Area pair numbers both declined over 50% in 2022. [2022 Piping Plover Nesting Results in New Jersey \(nj.gov\)](#)

Red knots travel 9,000 miles each year from South America to breed in the Arctic. The shorebirds are now stopping in Brigantine to rest and refuel on horseshoe crab eggs. However, populations of the federally threatened species have declined dramatically. In 2021, the U.S. Fish & Wildlife Service proposed to protect habitats used by red knots across coastal areas of the United States. Designating these "critical habitats" would mean federal agencies could not destroy or adversely modify the sites. In April 2023, the agency announced it's expanding its proposed habitats to include 233 acres of shallow water off the shoreline of the Edwin B. Forsythe National Wildlife Refuge in Brigantine.

BOEM has a responsibility under the Endangered Species Act (ESA) to assess the risks of offshore wind energy development to listed species. The red knot, piping plover, and roseate tern are listed species that can migrate through areas developed for offshore wind. BOEM's study program costs \$273,374 specifically for the development of a

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transparent modeling of collision risk for three federally listed bird species to offshore wind development. The final report was due on January 2023. The objective is to develop a user-friendly Collision Risk Model that can inform risk assessments of offshore wind development to three federally listed species (Roseate Tern, Piping Plover, and Red Knot) on the Atlantic OCS. The problem was stated as estimating the number of fatalities of federally-listed birds migrating through offshore wind energy facilities. BOEM states that this information is essential for understanding the potential for rare or uncommon species to encounter conflicts with renewable energy development in these areas for NEPA assessments and ESA consultations. Obviously BOEM does not believe that it has information necessary to determine the impact of offshore wind development on the red knot and piping plover is they are spending \$273,374 to develop a new tool to determine the impact. [BOEM ESP Ongoing Studies Template](#)

The piping plover migrates offshore, north-south **(1)** and must cross the project area in and out from their nests. If heading toward turbines, it would difficult for a 7-inch bird to first perceive and then avoid rotating blades with a 774-foot diameter and blade tip speeds approaching 200 miles per hour creating highly turbulent conditions. Assuming little avoidance of the entire wind complex to get to its historical nesting location as discussed below, there is the potential for a high number of fatalities (PP2) estimated here at up to 31 percent per year. That is based on reference **(2)**, Figure 2.25, the average of the Chapin, Dead Neck, Avalon, Stone Harbor results. It is also consistent with the percent of transit area blocked by rotating blades and 2 flights per bird, in and out.

The COP presents no assessment of the turbine collision risk to the local endangered piping plover population that nests on the Island and must now cross the wind complexes to get there and back to its offshore migration routes. It discusses the existence of a preliminary biological assessment (BA) prepared for consultation under the Endangered Species Act but presents no results of that analysis in the COP. It says that the final biological assessment will be available in the final EIS but that prevents the public from reviewing and commenting on this important impact. This is another example of lack of full disclosure and lack of coordination with other environmental reviews to the fullest extent practicable. This is another impact that must be presented.

Regarding turbine collision, the COP purports to minimize the collision risk by pointing to a study by Madsen et.al. in 2012 that showed a 99% avoidance when turbines were spaced greater than 0.6 miles. The avoidance rate used in the COP is not well defined but it appears to be the probability that the bird will avoid the entire wind complex, this needs to be clarified. But that study was for a particular bird species (the common elder) and a much smaller wind complex that it was able to fly around, which the modeling then depicted. In the case here, the piping plover, considering both the Ocean Wind and the Atlantic Shores projects, faces a 32-mile long barrier to making landfall. In addition, the ASOWNJ turbines are much more powerful and carry greater pressure changes and turbulence, one cannot just take results from small turbines and assume they hold for large ones. In addition, that study did not show the collision risk to those birds that entered the wind complex which is the critical issue here facing the piping plover as well as the red knot. Further, that study was for much smaller turbines with much different pressure and turbulence characteristics than the larger turbines proposed here. Finally, it is unclear whether the piping plover has similar avoidance traits as the elder bird. Therefore, the relevance of that study to the situation facing the piping plover is highly questionable. There are other studies as shown below that present a much different and much greater risk to the plover which should have been presented in the COP.

In either case, the BOEM cannot assume a 99 percent turbine avoidance by simply referencing studies which reference other studies, which in turn are based on much smaller turbines (e.g., 216-foot diameters), other bird species, and different circumstances. On its face it does not seem at all realistic to expect a small bird to easily and often escape multiple rows of rotating turbine blades with diameters more than two football fields long, a rotor swept area 13 times that used in previous studies, and wind tip speeds approaching 200 miles an hour causing significant disruptions in air currents. Prior studies **(2)** acknowledge that the avoidance rate for the piping plover is simply not known. If the BOEM uses an avoidance percentage number it needs to provide a plausible explanation for it. Otherwise, it should be conservative in its analysis. If the avoidance percentage is of the entire complex, then the assumption of 99 percent avoidance is especially unfounded when we know historically that the piping plover's instincts are driving it towards its nesting ground on the Island and the direct path from its migratory routes to it is through the wind complex. There seems no basis to assume it will go tens of miles out of its way from that direct 113 path to get there. So, the avoidance rate is likely to be closer to zero than it is to 99 percent. Rather, for a bird approaching these large turbines and their aerodynamics suggest otherwise. First, it is not clear that the bird can even detect the rotating blades especially the outer part which are now moving at very high speeds. This causes vision blur and paradoxically is now greater with a larger turbine, again because of their outward tip speeds approaching 200 miles an hour. If the bird does detect an obstacle and tries to change course there are additional difficulties. If it is approaching the turning blades against the wind, it will experience a very significant pressure drop in front of the blades which will suck it in to the blade swept area. If it is approaching the turning blades with the wind behind it and seeks to change course it has the counter that wind speed which is likely to be significant during operation of the turbine. If it passes through the swept area, it will experience that same pressure drop behind the blades. All of this suggests that a 99 percent avoidance through multiple rows of such situations is completely arbitrary and the BOEM needs to go back and present something realistic.

It is not known if the BOEM is using the "BAND" model in its Biological Assessment (BA) to analyze collision risk as the bird goes through the wind complex. The description of the BAND model in other literature, as a "static" model indicates that it scores a collision only when a bird actually hits a blade. The blades are relatively thin and the area occupied by the blades compared to the entire area swept by the rotation is very small, so obviously using only that, the risk of collision will be small. This does not account for the risk of injury or fatality from the extreme turbulence and pressure changes that the bird would experience as it passes through the rotor swept area and beyond it, especially just downwind of the turbine. It ignores all the turbulence, pressure changes, and wind shear effects occurring in between and downwind of the blades which could also maim or kill a bird. Any use of the model, without modification, would seem especially inappropriate considering the huge 110-meter blade length and blade tip tangential speeds approaching 200 miles per hour. The BOEM needs to do a current, realistic assessment of the risk of injury and fatalities here in its BA. It cannot rely on the BAND model as it did for the Vineyard Wind 1 Biological Assessment, based on the model's limitations described above, and other major drawbacks expressed by the U.S. Fish and Wildlife Service. **(3)**

It is expected that BOEM will apply CRMs to evaluate avian impacts in its BA. While limited, CRMs are one of the only tools available to hypothesize potential impacts to birds from collision in the offshore environment. As such, CRMs provide a mechanism for testing outcomes (e.g., observed collision rates) against the model predictions (e.g., expected collision rates), and BOEM must address the need to collect the data necessary to test these hypotheses. 114 The COP should include a CRM-driven collision risk analysis for all species of

conservation obligation which may occur within 20 km of the Atlantic Shores footprint and for which a current CRM would be appropriate, even if the species has not been documented within the footprint. This should include a recent stochastic derivation of the Band model, such as the McGregor (2018) version **(1A)**. BOEM must be transparent in its CRM application. These models are extremely sensitive to the input parameters. A study by Cook et al. (2014) found that estimations of avoidance and collision risk from Band models were highly sensitive to the flux rate (total number of birds passing through the wind farm), corpse detection rate, rotor speed, and bird speed. Factors such as weather (i.e., wind speed and visibility) and habitat use would also affect the accuracy of these estimates, as such factors would greatly influence avian flight patterns and behavior **(2A)**.

Therefore, the Draft EIS must provide the inputs used in its analysis for public comment and transparency. Providing CRM results without transparency to the inputs and analytical process would never be acceptable from a scientific perspective and, therefore, should not be acceptable from BOEM. Providing inputs would show whether BOEM followed the guidance provided by Band in assessing collision risk. These details regarding inputs should include, but not be limited to, avoidance behavior, flight height, flight activity, flux rate, corpse detection rate, rotor speed, bird speed, and collision risk.

(1A) McGregor RM, King S, Donovan CR, Caneco B, Webb A. 2018. A Stochastic Collision Risk Model for Seabirds in Flight:61. <https://tethys.pnnl.gov/sites/default/files/publications/McGregor-2018-Stochastic.pdf>.

(2A) Cook ASCP, Humphreys EM, Masden EA, Burton NHK. 2014. The Avoidance Rates of Collision Between Birds and Offshore Turbines. *Scottish Marine and Freshwater Science* 5:263. 62

Additionally, CRMs should consider differences in daytime and nighttime flight patterns. As Band himself stipulates: For some species typical flight heights are dependent on the season, and in such a case it will be best to use seasonally dependent typical flight heights in assessing collision risk for each month, rather than average flight heights across the year...Flight activity estimates should allow both for daytime and night-time activity. Daytime activity should be based on field surveys. Night-time flight activity should be based, if possible, on nighttime survey; if not on expert assessment of likely levels of nocturnal activity...collision model[s] should take both day and night flights into account. Where there is no night-time survey data available, or other records of nocturnal activity, for the species in question, (or for other sites if not at this site), it should be assumed that the Garthe and Hüppop/ King et al. 1-5 rankings apply. These rankings should then be translated to levels of activity at night which are respectively 0%, 25%, 50%, 75% and 100% of daytime activity. These percentages are a simple way of quantifying the rankings for use in collision modelling, and they may to some extent be precautionary **(3A)**. 115 There are new derivations of the Band model under development, namely the 3-D CRM for seabirds by the Shatz Energy Research Center **(4A)** and stochastic CRM specific to ESA-listed species in southern New England from the University of Rhode Island **(5A)**.

(3A) Band, B. 2012. Using a collision risk model to assess bird collision risks for offshore windfarms. SOSS report for The Crown Estate, Norway.

https://www.bto.org/sites/default/files/u28/downloads/Projects/Final_Report_SOSS02_Band1ModelGuidance.pdf.

(4A) Seabird Distribution in 3D: Assessing Risk from Offshore Wind Energy Generation, Shatz Energy Research Center (2020), <https://schatzcenter.org/2020/04/seabird3dstudy/>.

(5A) Transparent Modeling of Collision Risk for Three Federally-Listed Bird Species to Offshore Wind Development, US Fish and Wildlife Service with University of Rhode Island (Oct. 29, 2020)

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https://www.boem.gov/sites/default/files/documents/environment/environmentalstudies/Transparentmodeling-of-collisionrisk-for-three-federally-listed-bird-species-to-offshore-winddevelopment_1.pdf.

BOEM Cannot Assume that Larger Turbines, Further Apart, Reduces Risks to Birds There is no substantial evidence to suggest that larger turbines, spaced farther apart, reduces risks to birds, and it should be a goal of BOEM to understand the effects of displacement and mortality relative to turbine size and spacing. The size of turbines has grown substantially over the past decade, and this trend is expected to continue. In its Vineyard Wind 1 project, Vineyard Wind plans to use GE's 12 MW Haliade-X turbine, which has a 220-meter rotor swept zone and is estimated to reach a maximum height of 260 meters above sea level. University of Virginia is currently developing 200-meter-long blades to power a 50-mw turbine, with a potential rotor swept zone of approximately 400 meters. Given that the tower height would need to be more than 200 meters in height to accommodate rotor blades of this size, turbines could soon reach heights greater than 400 meters above sea level. Studies, Karas (2009),**(6A)** and Johnston et al. (2014),**(7A)** which suggest that fewer, larger turbines reduce avian collision risk, are based on turbines less than 5 mw. As turbines increase in size, they are more likely to encroach on airspace occupied by nocturnal migrants **(8A)** while not necessarily avoiding airspace occupied by relatively lower flying foraging marine

(6) Smallwood KS, Karas B. 2009. Avian and Bat Fatality Rates at Old-Generation and Repowered Wind Turbines in California. *The Journal of Wildlife Management* 73:1062–1071.

(7) Johnston, A., A.S.C.P. Cook, L.J. Wright, E.M. Humphreys, and N.H.K. Burton. 2014. Modeling Flight Heights of Marine Birds to More Accurately Assess Collision Risk with Offshore Wind Turbines. *Journal of Applied Ecology* 51, 31-41. (8) Id. 64 bird species.

Conversely, studies by Loss et al. (2013) Choi et al. (2020) and Huso et al. (2020), find that bird deaths not only increase with turbine size, but also suggest that the number of bird deaths from collision with wind turbines is proportional to the number of mw produced in a wind farm. Turbulence above and below the rotor swept zone can affect flight performance. If this should make birds more susceptible to physical interactions with turbines, then larger turbines would only increase that risk.

Additionally, limiting risk evaluations to the rotor swept zone 116 neglects the risk of collision from the tower itself and turbulence around the rotor swept zone. Suggestions that increased spacing (1 nm) between turbines would reduce risks to birds from both collision and displacement is unfounded, as offshore wind farms in Europe do not provide this level of spacing, and therefore, there is no operational comparison to be made. Instead, increased spacing means fewer turbines and less energy production within the footprint of the project, so more projects (and more space) will be necessary to meet state and national energy goals.

Furthermore, greater space between turbines may increase collision risk if species vulnerable to collision end up using the wind farm more frequently. Unfortunately, these are all unknowns, and BOEM will need to fund studies to answer these questions. The Draft EIS should have included a risk assessment, considering the full range of the potential rotor swept zone provided in the COP, to assess 1) impacts from collision and barrier effects to migrating birds, including the piping plover, and 2) potential increased habitat loss that may need to occur. Similarly, the federally threatened and State endangered red knot is likely crossing the lease area as well, and a similar analysis should be done for it. It has a critical habitat in the Holgate and North Brigantine areas during its fall migration (PP4). The results of all Atlantic Shore's Phase 1 and subsequent studies of its migration

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routes should have been included in the COP. The list of project authorizations should also include compliance with the Migratory Bird Protection Act, and the criteria used to determine that.

Other References

James D. McLaren, Holly F. Goyert, 3 and Peter W. C. Paton , Supportive wind conditions influence offshore movements of Atlantic Coast Piping Plovers during fall migration Pamela H. Loring, American Ornithology.org, Supportive wind conditions influence offshore movements of Atlantic Coast Piping Plovers during fall migration | Ornithological Applications | Oxford Academic (oup.com) Volume 122, 2020, pp. 1–16 DOI: 10.1093/condor/duaa028, 184

Michelle L. Stantial, Flight Behavior of Breeding Piping Plovers: Implications for Risk of Collision with Wind Turbines, New York College of Environmental Science and Forestry Syracuse, New York, Flight Behavior of Breeding Piping Plovers: implications for risk of collision with wind turbines(nj.gov) December 2014.

US Fish and Wildlife Service, New England Office, Letter to the BOEM, Vineyard Wind Offshore Wind Energy Project, Massachusetts TAILS:2019-I-0479, October 16, 2020.

Status of the Red Knot in the Western Hemisphere. Map 20, Prepared for the USFWS, NJDEP, May 2007.

Impacts on Fish, Invertebrates, and Their Habitat

COP fails to adequately consider the latest research published on offshore wind project’s impacts on “Finfish, Invertebrates, and Essential Fish Habitat.”

A recent study published in the peer-reviewed journal Nature Communications found offshore wind industrial facilities do previously unrecognized harm to marine ecosystems. A team of scientists from various German research institutes and universities examined industrial wind projects in the North Sea, where the world’s largest offshore wind project is found. Quantitative modeling conducted for the study indicates that the “wind wake” effect of offshore wind farms could dampen annual primary production in the area encompassed and beyond by the wind farms by more than 10 percent. Less food for fish or endangered whales is not a “moderate” or “beneficial” impact. The same modeling indicates offshore industrial wind projects slow ocean currents, resulting in decreased cycling of dissolved oxygen in and around wind projects, which produces low oxygen concentrations. Lower oxygen levels are also detrimental to marine life. The authors ultimately conclude that “off shore wind farm developments can have a substantial impact on the structuring of coastal marine ecosystems on basin scales.” Separately, these negative effects on the marine ecosystem in offshore wind farm areas indicate the ASOWNJ project will harm many species and disrupt ecosystem interconnections. Cumulatively, the harm will probably be much greater, wreaking great harm on all marine life.

The developer is installing 49-foot diameter monopiles and installing 296 foot diameter stone 8 feet deep = 1.3 acres of stone per turbine. This is catastrophic devastating change to the sandy sea floor which the Quahog, surf clam and scallops rely on and live in.

- The foundation structure max. foundation footprint is (1,902 sf = 0.4 acres).

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- The permanent seabed disturbance outer diameter /size of scour protection = 269 ft (by 8.2 feet thick!!).
- 269 feet diameter is a 135 ft radius squared time 3.14 = 57,226 SF / 43,560 sf/acre = 1.3 acres of scour (stone) protection per monopile.
- Planned turbine installation= Atlantic Shores South 200 turbines, Atlantic Shores North 150 turbines, Orsted (Ocean Wind 1,2) 200 turbines
- 550 turbines x 1.3 acres of stone in just the first 3 lease areas = 715 acres of stone 8.2 feet thick.

*This information and calculations have been confirmed by Rutgers University professors.

This is a mountain of stone and is clearly a complete change of the current environment consisting of a sandy bottom supporting a \$2 Billion dollar NJ industry / jobs and sustainable, renewable seafood in just the Quahog, Surf Clam and Scallop.

This will destroy their habitat and create new a habitat for non-native species. The Quahog, surf clam and scallops are a \$2 billion dollar NJ industry with NJ jobs and a renewable seafood industry.

The surrounding projects including, Ocean Wind I and II and Atlantic Shores North consisting of 550 wind turbines along with hard surfaces over the cables in the ocean will only increase the impact of the change in the ocean's sandy bottom at the Jersey Shore.

Information regarding the severity of this impact is found in Lloret et al., *Unravelling the ecological impacts of Large-Scale Offshore Wind Farms in the Mediterranean Sea*, Science of Total Environment. 824 (2022).

Sincerely,

Board Of Trustees Defend Brigantine Beach

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April 22, 2024

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Defend Brigantine Beach and Downbeach, Inc
Public Comment: BOEM for Atlantic Shores North Project COP/DEIS

Date: Fri, May 3, 2024 at 12:32 AM

Subject: Your Comment Submitted on Regulations.gov (ID: BOEM-2024-0008-0001)

Comment Tracking Number: lvp-vs4q-0uv3

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Agency: BUREAU OF OCEAN ENERGY MANAGEMENT (BOEM)

Document Type: Notice

Title: Environmental Impact Statements; Availability, etc.: Proposed Atlantic Shores North Project on the United States Outer Continental Shelf Offshore New Jersey

Document ID: BOEM-2024-0008-0001

Comment:

In 2004, the Governor, by Executive Order, authorized the NJ STATE BLUE RIBBON PANEL on offshore wind based on the Coastal Zone Management Act because the projects were in NJ's coastal zone and "there is a reasonably foreseeable effect on uses and resources of NJ's coastal zone" The Blue Ribbon Panel report was released in 2006 and guiding principles based on the Coastal Zone Management Act were presented. The wind developers who purchased the leases, including Atlantic Shores North (Shell Oil and EDF Renewables), were well aware of the CZMA, the fact that the lease areas were selected based on the Blue Ribbon Panel report and that the project's viability would be based on its adherence to the CZMA regulations. In fact, the information on the Blue Ribbon Panel is included in the Atlantic Shores South COP Document in section 1.3.1., BOEM's New Jersey Offshore Wind Leasing Program. Projects in the lease areas which were determined by the process starting with the Blue Ribbon Panel Report must continue to be examined and evaluated using the same criteria. Changing or ignoring the criteria would clearly demonstrate at best the wind developer's dishonesty, lack of integrity and manipulation of the process and at worst fraudulent and illegal actions.

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