1. Introduction to New Jersey Offshore Wind Development Index

Introduction to New Jersey Offshore Wind Develpment

Federal and State Public Policy and Funding of Offshore Wind Energy

Federal Government

International policies related to setting goals for emissions reductions are driving our national policies. *E&E News CLIMATE WIRE* reporter, Sara Schonhardt in her article titled, *IPCC Report Will Likely Shake up UN Climate Talks*, reported on 3/24/23 that the latest assessment from the United Nations' Intergovernmental Panel of Climate Change, emissions need to be cut by 60% by 2035 compared to 2019 levels. This target exceeds the 43% reduction by 2030 that countries were shooting for.

Exclusive News | Thank you - E&E News (eenews.net)

These aggressive targets are forcing countries to jump into alternative green energy sources to cut their emissions. Wind Energy has become big business for the US Federal Government. On Feb. 25, 2022 the Biden-Harris administration drew in a record $4.37 billion in high bids for leases off the New Jersey and New York coast designated specifically for offshore wind development. The auctions—in addition to the projects currently in progress—align with the administration's goal of installing 30 gigawatts of offshore wind energy by 2030.

The Inflation Reduction Act of 2022, signed into law on August 16, 2022, contains multiple provisions for offshore wind, including offshore wind leasing expansion into mid- to -South Atlantic and Eastern Gulf of Mexico and US Territories, $100 million for transmission planning and tax credits. The biggest financial incentives driving offshore wind development are:

- a 30% credit for offshore wind projects that begin construction before January 1, 2026
- a "new clean electricity" investment tax credit of 30% for facilities that pay prevailing wages and meet registered apprenticeship requirements
- a 10% tax credit for the domestic production of wind components and related goods such as specialized offshore wind installation vessels, and
- a potential allocation of an advance energy project credit for taxpayers investing in establishing, reequipping or expanding offshore wind energy manufacturing facilities.

Offshore Wind Provisions in the Inflation Reduction Act (congress.gov)

Although the cost estimates total $400 billion (based on them ending in 2032), because the subsidies will end only if CO2 emissions of the electricity sector are below 25% of their 2022 levels, the amount of subsidies could go beyond the estimated amount if the CO2 target level is not achieved. For example, Energy Information Administration (EIA) indicates that the CO2 emissions of the electric sector will not go down to the targets before 2050 which is 26 years of subsidies instead of 10. The subsidies are not capped, but are actually open ended and could be as much as $1.2 trillion according to an analysis completed by Goldman Sachs.

https://alexepstein.substack.com/p/the-limitless-hidden-costs-of-the

On March 29, 2023, Biden announced plans to further expand offshore wind by another 15 gigawatts by 2035 by using floating wind turbines in the US Pacific Coast. Per the Biden- Harris Fact Sheet, the administration is supporting offshore wind through actions across the Department of Interior, Energy, Commerce, Transportation and other federal agencies in ten key ways: Wind Energy Areas off Every Coast, funding for wind energy job training, wind energy tax credits, "modernizing" the offshore wind development approval process, action plan for offshore wind transmission, port infrastructure upgrade grants, floating offshore wind targets, State partnerships, DOE research, responsible deployment of projects.

Biden energy officials release strategy to boost offshore wind and cut its cost by 30% (msn.com)

https://www.whitehouse.gov/briefing-room/statements-releases/2023/03/29/fact-sheet-biden-harris-administration-continues-to-advance-american-offshore-wind-opportunities/

NJ State Government

On August 19, 2010 the Offshore Wind Economic Development Act (OWEDA) was signed into New Jersey Law. OWEDA directed the NJ Board of Public Utilities to establish a program for Offshore Wind Renewable Energy Certificates (ORECS) to support at least 1100 MW of offshore wind (OSW) generation capacity from qualified OSW projects. OWEDA defines an OREC as representing the environmental attributes of one megawatt hour (MWh) of electric generation from an OSW project. For each MWh delivered to the transmission grid, an OSW project will be credited with one OREC.

Governor Phil Murphy's Executive Orders Related to Offshore Wind are in the table below:

DATE	EXECUTIVE ORDER #	EXECUTIVE ORDER DESCRIPTION
1/31/18	8	Directed Board to fully implement OWEDA and begin the process of moving the State toward a goal of 3500 MW by 2030 along with implement strategic plan to examine the critical components of OSW development
11/19/19	92	Directed Board to take "all necessary actions to implement OWEDA in order to promote and realize the development of wind energy off the coast of NJ to meet a goal of 7500 MW of offshore wind energy generation by the year 2035
9/21/22	307	Directed Board to expand State's OSW goal to 11,000 by 2040 and study the feasibility of increasing the target further
2/15/23	315	Adoption of an accelerated target of 100% clean energy by 2035, defined as 100% of the electricity sold in the State to come from clean sources of electricity by January 1, 2035 through clean energy market mechanisms, paired with support for a Clean Energy Standard in New Jersey.
2/15/23	316	Adoption of a target to install zero-carbon-emission space heating and cooling systems in 400,000 homes and 20,000 commercial properties and make 10% of all low-to-moderate income (LMI) properties electrification-ready by 2030
2/15/23	317	Initiation of a process in partnership with the state's hometown utilities, key stakeholders including organized labor, and the New Jersey Board of Public Utilities (BPU) to plan for the Future of the Natural Gas Utility in New Jersey

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/bpu/pdf/publicnotice/Notice%20-%20Request%20for%20Information%20-%20Third%20OREC%20Solicitation%20%20Performance%20Guarantees%202-24-23.pdf

Wind projects are supported by large amounts of government funding and increased rates from future rate payers. For example, NJ is investing $500 million of taxpayer money to develop the New Jersey Wind Port in Salem County for Offshore Wind Industries.

New Jersey offshore wind project costs questioned - Garden State Initiative

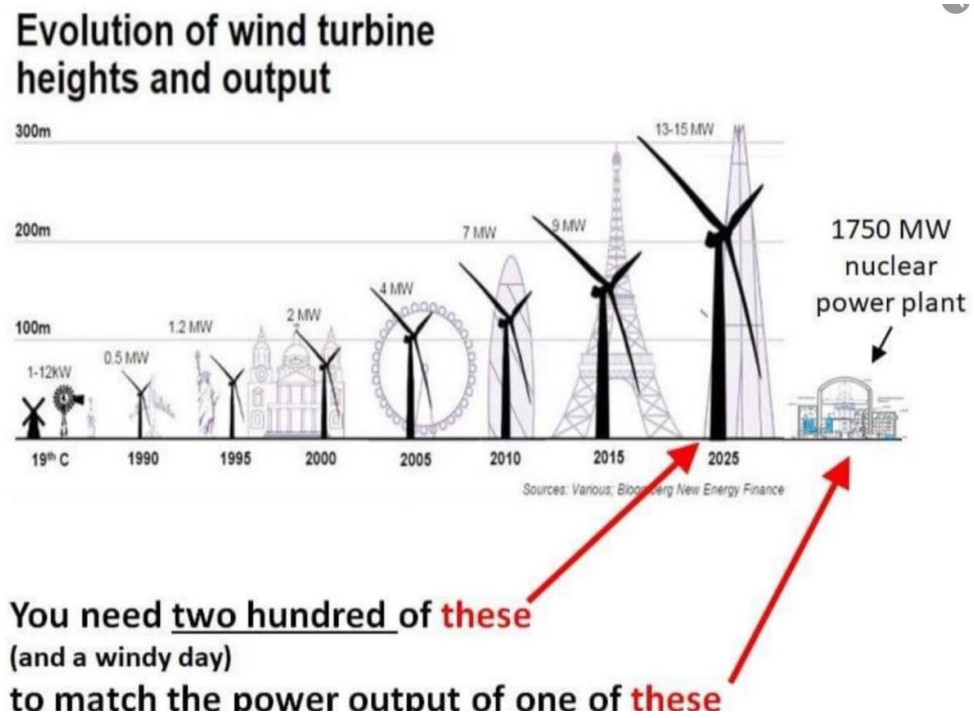
Read Gov. Murphy's 12/8/22 Press Release which is more government funding to support Wind Energy Industry. Office of the Governor | Murphy Administration Announces More Than $8 Million to Build a Diverse, Inclusive Green Jobs Sector

Office of the Governor | Governor Murphy Announces Comprehensive Set of Initiatives to Combat Climate Change and Power the "Next New Jersey" (nj.gov)

Benefits and Negative Impacts of Offshore Wind (Summary)

BENEFITS: The benefits cited for Wind Energy by its supporters are reduced dependence on oil and gas, providing jobs and other economic benefits to local communities and, cleaner energy. More specifically, advocates figure that wind turbines average just 11 grams of CO2 emission per kilowatt hour of electricity generated. That compares with 44 g/kwh for solar, 450 g for natural gas, and a whopping 1,000 g for coal. But beating them all is the original large-scale zero-carbon power source, nuclear power, at 9 g/kwh. (Please note that the data in the article in the link below is from Wind Industry)

https://www.forbes.com/sites/christopherhelman/2021/04/28/how-green-is-wind-power-really-a-new-report-tallies-up-the-carbon-cost-of-renewables/?sh=df0dfc073cd9



NEGATIVE IMPACTS: The drawbacks and pitfalls of Offshore Wind Energy argued by its critics are its inefficiency and the high cost to tax payers and rate payers; visible impact and its negative effect on tourism, real estate values and local economies if turbines are visible; impact on marine mammals, endangered species and migration patterns; impact on fishing industries; impact on department of defense exclusion zone; noise and vibrations from construction and operation of wind turbines (both in ocean and on the coast); lack of public input and rigorous approval process, and lack of oversight plan and guaranteed decommissioning (removal of wind turbines) process.

Opponents also argue that the power density for wind energy is very low which means the amount of land, steel, cooper and other things like polysilicon and neodymium, is huge compared to other sources of energy – the lower the density of the power source, the higher the resource intensity. For example, the amount of land required to accommodate the roughly 800 gigawatts of wind/solar capacity that will be built due to the passage of the Inflation Reduction Act will require 37,000 square miles or roughly the size of Tennessee. As we are witnessing with the vast amount of ocean the federal government has designated for Wind Turbine Areas, wind turbines are an ocean-devouring low power density source. Siemens Power CEO Confirms the Iron Law of Power Density | RealClearEnergy

Agencies involved in the New Jersey Offshore Wind Development Approval Process

The Federal Government "owns" the waters starting three miles off the coast therefore has the ultimate approval for the projects and has the authority to lease the ocean to the Wind Development Companies. The initial lease is for 1 year (with extensions) until permits are issued and then it could be for 20/30 years.

PRIMARY AGENCIES APPROVING OCEAN WIND PROJECTS

1. BOEM (Bureau of Energy Management) under the Federal Department of the Interior is responsible for approving Wind Energy Projects BOEM Homepage | Bureau of Ocean Energy Management

   UPDATE As of 1.17.23 – Interior Department reorganizes BOEM, BSEE Renewable Energy Responsibilities
   Interior Department Finalizes Offshore Wind Safety and Environmental Responsibilities | U.S. Department of the Interior (doi.gov)

2. NJDEP (New Jersey Department of Environmental Projection) NJDEP| Offshore Wind | About Offshore Wind
3. New Jersey Board of Public Utilities NJ Board of Public Utilities
4. New Jersey Economic Development Authority Offshore Wind - NJEDA

ALL REVIEW AGENCIES per BOEM Website (Listed under Atlantic Shores Project but not for the Ocean Wind Project)
Atlantic Shores South | Permitting Dashboard (performance.gov)

Federal Regulations and Approval Process

The construction of an offshore wind farm involves a multi-phase permitting process. The steps are as follows:

1. **Identification of Lease Areas:** Bureau of Ocean Energy Management (BOEM), under the US Department of the Interior, is the Agency that designates Wind Energy Areas (WEAs) which will become lease areas to facilitate the build-out of offshore wind.

   Government has Changed the Process to Fast Track Approvals –

   - ***Smart for the Start Process***- Elimination of programmatic environmental impact statement done to secure public input before selecting offshore wind areas for development: In January 2012, a "Smart for the Start" regulatory approach was introduced, designed to expedite the siting process for WEAs. Specifically, the Department of Interior approved "wind energy areas" off the coast where projects can move through the regulatory approval process more quickly.

   - **IN JUNE 2021 RULING FROM DC CIRCUIT COURT OF APPEALS SAYS OSW PROJECTS (Initial Lease) ARE NOT SUBJECT TO National Environmental Policy Act (NEPA) REVIEWS.**

     https://www.klgates.com/DC-Circuit-Affirms-That-Offshore-Wind-Lease-Does-Not-Trigger-NEPA-Review-6-3-2021

   - **IN JUNE 2022, BOEM RELEASED NEW GUIDELINES ON LIMITING THE NUMBER OF ALTERNATIVES STUDIES FOR ENVIRONMENTAL REVIEWS.**
     Process for Identifying Alternatives for Environmental Reviews of Offshore Wind Construction and Operations Plans pursuant to the National Environmental Policy Act (NEPA) (boem.gov)
     BOEM's NEPA Screening Criteria for Offshore Wind Projects Are a Big Step Toward Permitting Certainty | ACP (cleanpower.org)

2. **Auction of Lease Areas:** The rights to develop those lease areas are auctioned off to the highest bidders (Ocean Wind Farm Developers) under an ascending clock auction under the Outer Continental Shelf Lands Act . Once awarded, the lease areas can be further assigned and subdivided into separate projects.

   Critics of the leasing process argue that:

   - The current bidding process extracts the maximum possible lease price and cost from qualified bidders. This maximizes the cost to developers (which are passed onto rate payers).
   - BOEM should identify the party that can get the power onshore at the most economical price. In contrast, the current process supports the buyer with the most money and greatest eagerness for risk.
   - BOEM should facilitate a separate process for the development of an offshore wind transmission system to ensure that redundant transmission systems for each lease area are not separately constructed, but rather, consolidated and optimized. Fixing

the Offshore Wind Lease Auction Process Is Imperative to the Industry's Success | Utility Dive Article | Guidehouse

3. **Site Assessment Plan (SAP)**: Each project Wind Farm Developer, after winning an auction and making its initial lease payment, must file a Site Assessment Plan (SAP), which details the work required to evaluate the environmental conditions in the lease area, including both surface and seafloor conditions. After the SAP is approved, the proponent will install weather buoys and engage survey vessels to develop sufficiently detailed information to complete the design of the wind farm — this will include identifying protected species habitats, unexploded ordinance, shipwrecks, and geological formations that could interfere with either the foundations for wind turbines or the electrical cabling.

4. **Construction and Operations Plan:** After completing the survey, the proponent might choose to abandon the lease area if it appears development will be uneconomical, or else continue to final design and permitting, which culminates in the filing of a **Construction and Operations Plan (COP) with BOEM**.

    a. Like other major permitting actions, approval of the construction and operations plan is subject to the National Environmental Policy Act (NEPA) and requires preparation of an environmental impact statement (EIS). The BOEM is the lead federal agency in the EIS process, coordinating input from other federal agencies including
        i. the Coast Guard,
        ii. the Fish and Wildlife Service,
        iii. the Maritime Administration,
        iv. the National Park Service,
        v. the Army Corps of Engineers.

    b. The full COP review considers impacts to protected marine ecosystems, commercial and recreational fishing, as well as historic and cultural resources. The Coast Guard and Federal Aviation Administration evaluate each wind farm's COP for hazards to navigation and interference with coastal surveillance radars.[

    c. In addition to approving each individual project's COP, the BOEM also performs an environmental review prior to opening an area of seafloor to leasing, although this review is not as stringent as a full EIS. The initial review largely serves to identify areas which are not developable and thus should be excluded from leasing.

5. **Environmental Impact Statement (EIS)** This is the final phase of the COP submitted by the Wind Developer but it is a separate document. What Is The Environmental Impact Statement (EIS) Process? | Bureau of Ocean Energy Management (boem.gov)

Federal Department of the Interior Wind Area Lease Approval

Initial mention of specific offshore wind initiatives was in 2011 by a notice in the Federal Register by the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE). The purpose of the notice was "to involve Federal agencies, States, Tribes, local government, wind power developers, and the public in the Department of the Interior's (DOI) ''Smart from the Start'' wind energy initiative, to identify areas for wind energy leasing proposals,

and to provide public notice of the Department's commitment to analyze the initiative's siting, leasing and site assessment decisions in accordance with the DOI regulations implementing the provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4321 et seq.)."

According to the notice, on November 23, 2010, Secretary of Interior Ken Salazar announced that "Smart from the Start" renewable energy initiative to accelerate responsible renewable wind energy development on the Atlantic Outer Continental Shelf (OCS) by using appropriate identified areas, coordinated environmental studies, large-scale planning and expedited approval processes. BOEM's notice identified Wind Energy Areas offshore NJ DE, Md, and VA that the BOEM Regulation and Enforcement has found, in consultation with other Federal Agencies and State Renewable Energy Task Forces, to be suitable for consideration for wind energy development.

Federal Register of Feb 9 2011, page 139/391.

According to the notice, regarding public input:

"By this notice, BOEMRE is soliciting comment on the environmental effects of reasonably foreseeable site characterization surveys that may be undertaken if BOEMRE issues a lease or leases in any or all of the identified WEAs. Consistent with the provisions of 43 CFR 46.305 (public involvement in the environmental assessment process), the Department ''must, to the extent practicable, provide for public notification and public involvement when an Environmental Assessment is being prepared.''…….

"Federal, State, and local government agencies, Tribal governments, and other interested parties may assist BOEMRE in determining the important issues and any additional alternatives to be analyzed in the regional EA. Input is also requested on measures (e.g., limitations on activities based on technology, distance from shore, or timing) that would mitigate impacts to environmental resources and socioeconomic conditions that could result from leasing, site characterization, and site assessment in and around the WEAs described below. It may become appropriate to analyze one or more WEAs in separate EAs. Consultation with other Federal agencies, Tribal governments, and affected States will be carried out during the EA process and will be completed before a final decision is made on whether any particular lease will be issued or site assessment activities on those leases approved."

In the notice, Wind Energy Areas were already identified,

"BOEMRE, in consultation with other Federal agencies and State Renewable Energy Task Forces, has identified the following WEAs in which BOEMRE is proposing to begin the commercial lease issuance process and subsequent SAP approval process: **New Jersey: 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**."

New Jersey State Approval Process

In addition to the federal permitting process, all wind farms require state permits for their connections to the on-shore electric grid; even if an offshore project is constructed entirely in

federal waters its "export cables" will need to transit state waters to reach the shore. Other permits maybe required to connect to the grid, such as certificate of public necessity, as well as private consents from an integrated electric utility or a regional transmission organization.

NEW JERSEY Removes Local Control: In July 2021 NJ Governor Murphy signed a measure that removes most local control from where and how offshore wind energy projects come ashore. Aside from granting local communities a public hearing on an offshore project that comes ashore in their town, the measure strips those communities and their elected officials of most, if not all control over the project's power lines and the installation of associated infrastructure.

NJ Board of Public Utilities (NJ BPU)

The NJ BPU manages the power purchase agreement process and selects solicitations from wind developers.

NJ State Executive Order Mandates for offshore generation and renewable energy credits require the NJBPU to sign long-term power purchase agreements with offshore wind developers. The schedule of past and future solicitations necessary to achieve the States renewable energy goal of 11,000 MW of offshore wind energy is below.

Table 1. Offshore Wind Solicitation Schedule for New Jersey through 2040

Solicitation	Minimum Capacity Target (MW)*	Capacity Awarded (MW)	Issue Date	Submittal Date	Award Date	Estimated COD
1	1,100	1,100	Q3 2018	Q4 2018	Q2 2019	2024-25
2	1,200 – 2,400	2,658	Q3 2020	Q4 2020	Q2 2021	2027-29
3	1,200 - 4,000		Q1 2023	Q2 2023	Q4 2023	2030
4	1,200**		Q3 2024	Q4 2024	Q2 2025	2032
5	1,200**		Q3 2026	Q4 2026	Q2 2027	2034
6	1,200**		Q3 2028	Q4 2028	Q2 2029	2036
7	1,200**		Q3 2030	Q4 2030	Q2 2031	2038
Total Awarded + Target	**11,000**					

*The Board may award projects above or below the target
**To be adjusted based on previous solicitation awards

(COD is Commercial Operations Date)

New Jersey's power purchase agreements (PPAs) involve the sale of electricity and offshore renewable energy credits (ORECs). ORECs are a specific type of renewable energy credit (REC) that can be used by utilities in lieu of actually owning renewable energy generating resources or contracting for their output. An OREC represents the environmental attributes of one megawatt hour (MWh) of electric generation from an OSW project. For each MWh delivered to the transmission grid, an OSW project will be credited with one OREC.

Successful bidders sign contracts called power purchase agreements (PPAs), which include annual pricing, performance guarantees, and numerous other factors for a fixed amount of MW of power. The Board evaluates a project as a qualified offshore wind facility and deems it eligible to receive payments for Offshore Renewable Energy (ORECs) if "the wind project will not impose unreasonable costs on NJ ratepayers and that a **cost/benefit analysis demonstrates a net positive economic and environmental outcome to the State of New Jersey**."

This process is called a “solicitation.” Two have already been completed and NJBPU has opened the application window for the third offshore wind solicitation. Many of the contract terms are kept confidential under the rubric of “competitive market information.” As such, the actual costs to build and operate these wind facilities are unknown.

To address the potential volatility of future OREC prices, long-term PPAs fix their price (price can also include a fixed annual increase), regardless of market conditions. This provides developers with a guaranteed income stream that they can use to secure financing for their projects. On the other hand, PPAs could be signed years before a project is constructed which can also create volatility for the developer. Most proposed offshore wind projects in the U.S. are structured as limited-liability, single-purpose entities. This means that the only assets of the company will be the turbines and related equipment. If a project becomes uneconomic to build or operate under the terms of its PPA, the company could walk away, declare bankruptcy or try to renegotiate the OREC price in the PPA.

If the PJBPU and offshore wind developer renegotiate the PPA, the rate payers’ costs will increase over the life of the PPA. If a project is already built and decommissioned prematurely, the moneys set aside for decommissioning may not cover the actual decommissioning costs. These costs will have to be shouldered by electricity consumers and, possibly, the state’s taxpayers. Assumptions used by the developer in its price proposal such as building costs, maintenance costs, financing costs, inflation, and other factors are important for the viability of the project.

To position the State to reach Governor Murphy’s OSW goals, The Board formally requested inclusion of its OSW policy into PJM Interconnection LLC’s (PJM) regional transmission expansion analysis through the State Agreement Approach (SSA). PJM Interconnection (grid operator) is the regional transmission organization (RTO)that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. In October 2022, the Board approved a series of transmission projects under the SSA that provides a coordinated transmission solution for 6400 MW of OSW generation.

https://www.pjm.com/about-pjm/who-we-are#:~:text=PJM%20Interconnection%20is%20a%20regional,and%20the%20District%20of%20Columbia.

For the payment of transmission system upgrade costs, financial arrangements could be included in the proposal from the wind developer, for example, the Ocean Wind I developer will include some of the upgrades in an Upgraded True-up OREC price according to their solicitation.

Unlike fossil-fuel and nuclear plants, wind is inherently intermittent, generating electricity only when the wind blows. The output cannot be controlled and can change from moment to moment. This inherent intermittency must be compensated for by relying more on natural gas-fired generators that can be brought online quickly, or pumped-storage hydroelectric plants, or, on battery storage. Grid-support costs will not be paid by offshore wind developers. Instead, they will be socialized across all electricity consumers through electric transmission rates that are charged by grid operators that coordinate the bulk power system.

The Dismal Economics of Offshore Wind | Manhattan Institute (manhattan-institute.org)

The NJPBU orders and reports for the **First PPA Solicitation** (Ocean Wind 1) are as follows:

6-21-19-8D.PDF (njcleanenergy.com)

6-21-19-8D - Public Version - Levitan NJ OREC Final Report.pdf (state.nj.us)

The NJBPU orders and reports for the **Second PPA Solicitation** Atlantic Shores and Ocean Wind 2 are as follows:

https://nj.gov/bpu/bpu/pdf/boardorders/2021/20210630/ORDER%20Solicitation%202%20Board%20Order%20ASOW%20Revised.pdf

https://nj.gov/bpu/bpu/pdf/boardorders/2021/20210630/ORDER%20Solicitation%202%20Board%20Order%20-%20OW2%20B.pdf

https://nj.gov/bpu/bpu/pdf/boardorders/2021/20210630/Offshore%20Wind%20Solicitation%202%20-%20Levitan%20Evaluation%20Report.PDF

BPU's **Third PPA Solicitation** includes an **inflation adjustment**. According to the Energy Rate Counsel, inflation could increase prices by up to 15% and the provision could potentially thrust billions in extra costs for clean energy onto consumers.

NJBPU

NJ offshore wind could get pricier due to inflation, Rate Counsel says (app.com)

New Jersey Offshore Wind Development Projects in the Approval Pipeline:

Images of the two projects in the BOEM permitting process are :

Ocean Wind 1 (Image 1), this wind energy area is located approximately 15 miles off the coastline starting in Atlantic City and ending in Ocean City. On shore interconnection points will be in Ocean City, Cape May County and Oyster Creek, Ocean County.

Atlantic Shores South (Image 2) this wind energy area is located approximately 9 miles off the coastline starting in the northern part of Atlantic City up to the northern end of Brigantine. On shore interconnection points will be in Atlantic City, Atlantic County and Sea Girt, Monmouth County.

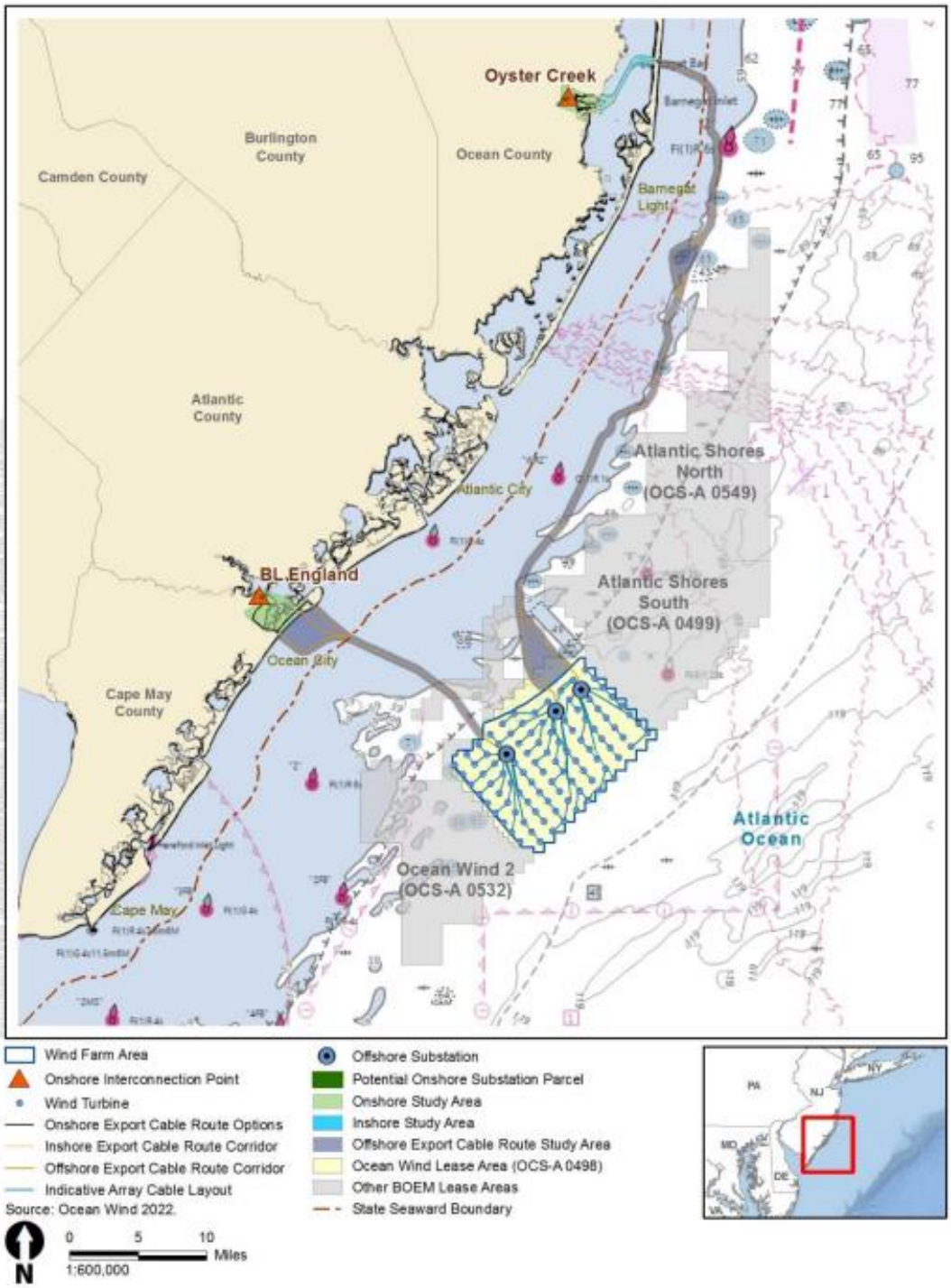


Figure S-1 Ocean Wind 1 Project

Image 1: Page 9 [Ocean Wind 1 Offshore Wind Farm Environmental Impact Statement (boem.gov)]

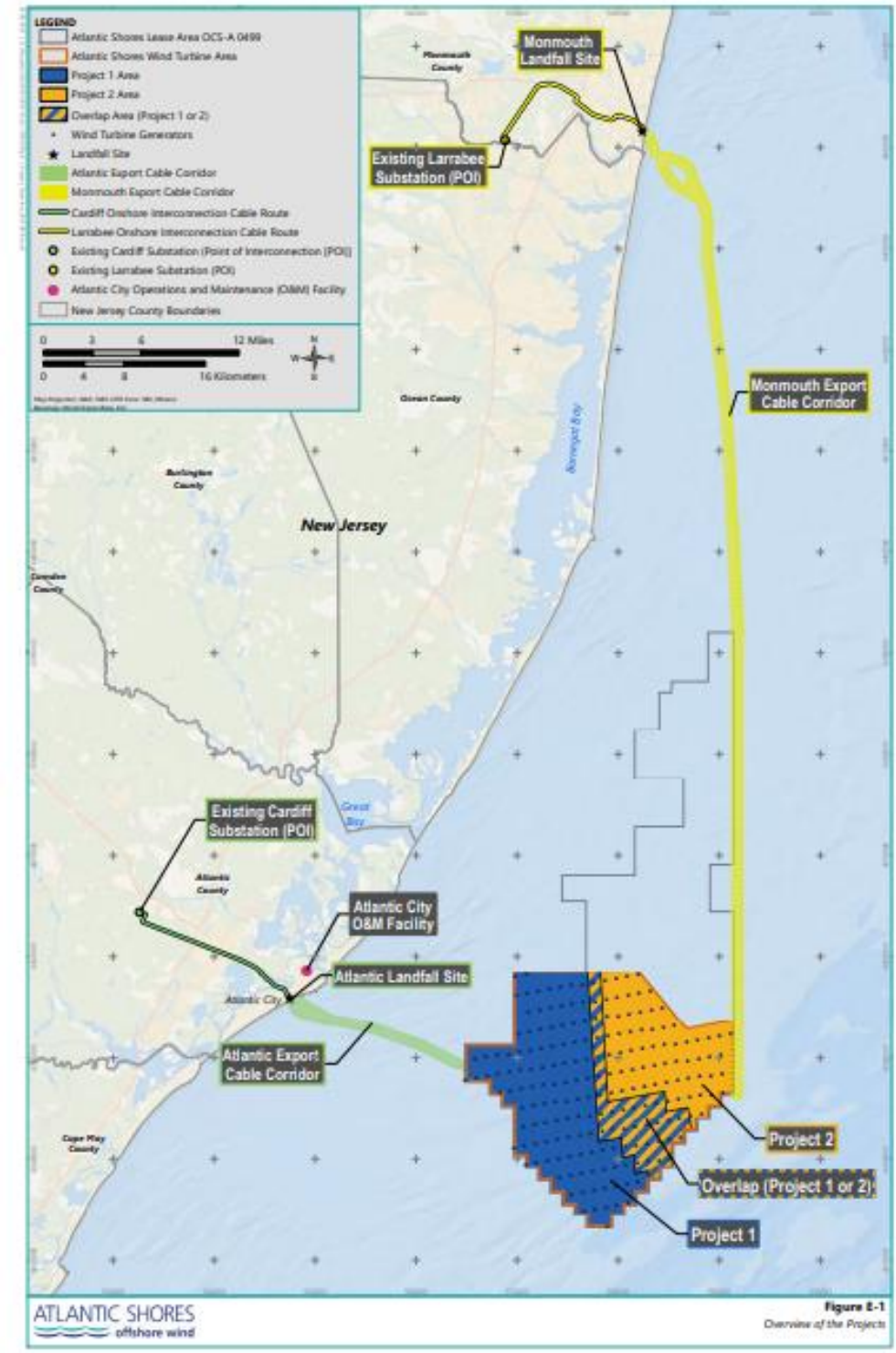


Image 2: Page 5 [Atlantic Shores COP Volume 1 Update 9.232021 (boem.gov)]

1. Ocean Wind 1 Project

Ocean Wind 1 LLC, an Ørsted subsidiary

Orstead's Ocean Wind 1 Project will be 98 wind turbines starting in Ocean City and ending in south end of Brigantine, starting 14-16 miles off the coast. The Turbines will be 800 to 1000 feet above sea level. The link to the main page on BOEM's website is below. The link to the project page is below

Ocean Wind 1 | Bureau of Ocean Energy Management (boem.gov)

The Construction and Operations Plan (COP) is a document describing the construction, maintenance, visual impact, and decommissioning process (Link below).

Ocean Wind 1 Construction and Operations Plan for Commercial Lease (OCS-A 0498) | Bureau of Ocean Energy Management (boem.gov)

The **visualizations of the wind turbines from the shorelines** are in this link OCW01_COP_Volume III_Appendix L_D_20220614.pdf (boem.gov)

Locations of interest start on PDF page 37 and end on page 84. There is no visualization for Ventnor Beach. Specific visualizations are: Brigantine North Beach Nature Area (page 36), Brigantine Beach at 16th St. (page 42), AC Beachfront (page 52) and AC Playground Pier (page 64) and Margate Lucy the Elephant (page 74) The visualizations include an "existing condition" and a "visualization" showing the wind turbines.

(Draft) Environmental Impact Statement (DEIS)

Ocean Wind 1 Draft Environmental Impact Statement (DEIS) for Commercial Wind Lease OCS-A 0498 | Bureau of Ocean Energy Management (boem.gov)

2. Atlantic Shores South - Project I and II

Atlantic Shores Offshore Wind LLC, a partnership of Shell New Energies US and EDF Renewables North America

Atlantic Shores Project I and II will be 200 wind turbines starting in Atlantic City and ending in on the North End of Brigantine located 9 miles off the coast. Turbine sizes 800 to 1000 feet above sea level.

Atlantic Shores South | Bureau of Ocean Energy Management (boem.gov)

The Construction and Operations Plan (COP) is a document describing the construction, maintenance, visual impact, and decommissioning process (Link below).

Atlantic Shores Offshore Wind Construction and Operations Plan for Commercial Lease OCS (OCS-A 0499) | Bureau of Ocean Energy Management (boem.gov)
The Visualization Impact Assessment is in this link Visual Impact Assessment - Atlantic Shores Offshore Wind (boem.gov)

The **visualizations of the wind turbines from the shorelines** are in these links:
North Brigantine BC02 North Brigantine Natural Area (boem.gov)

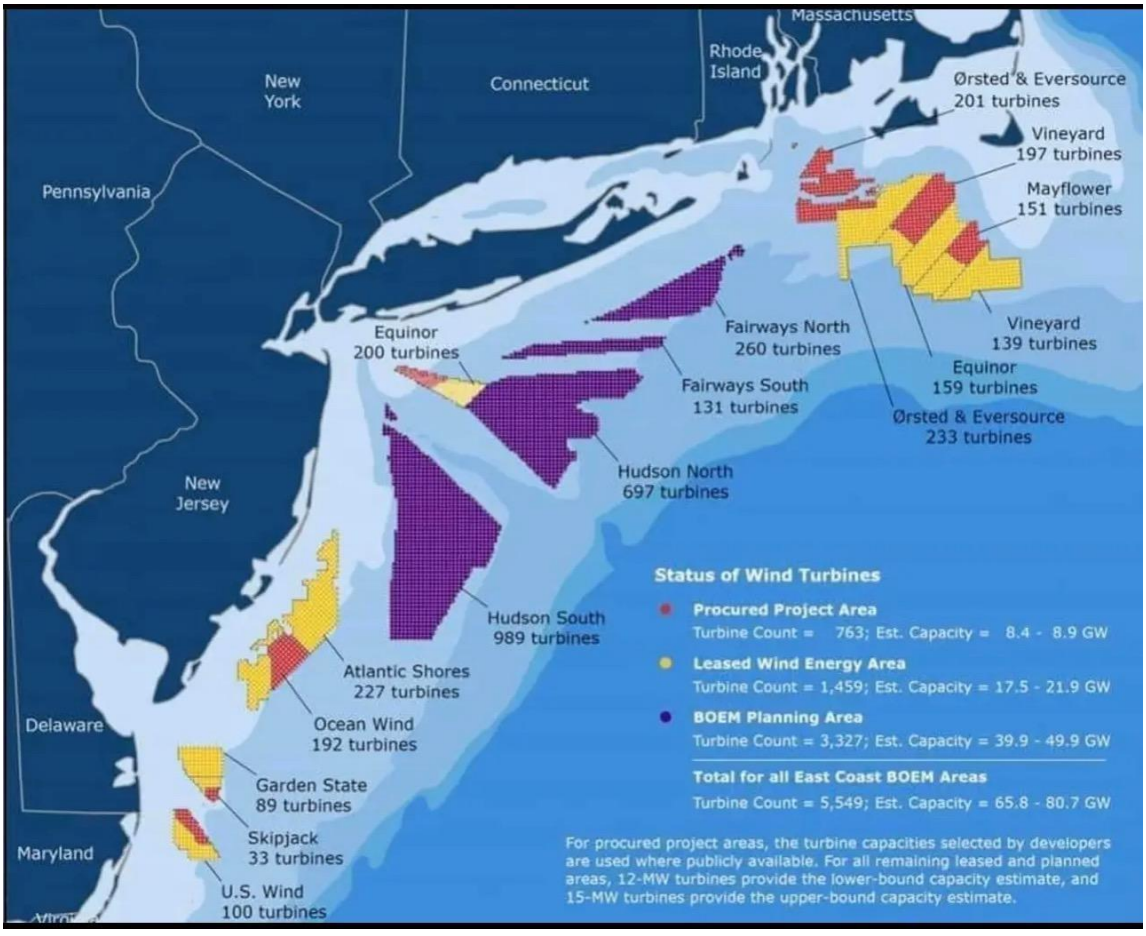
Boardwalk Hall AC02 Jim Whelan Boardwalk Hall (Atlantic City Convention Center NHL) (boem.gov)
Lucy the Elephant MC02 Lucy the Margate Elephant National Historic Landmark (boem.gov)
Visualizations include a picture for Current Conditions and a picture for Photo Simulation with wind turbines. No Visualizations in the report for Ventnor.
Draft Environmental Impact Statement (DEIS) Atlantic Shores Offshore Wind South Draft Environmental Impact Statement (DEIS) for Commercial Wind Lease OCS-A 0499 | Bureau of Ocean Energy Management (boem.gov)

3. Other Offshore Wind Development Projects

Other projects are proposed and in the beginning of the approval process, but there are no details listed on BOEM's website. For example, Atlantic Shores has a Project North which is another 100 wind turbines 9 miles off the coast of LBI. There is an Ocean Wind 2 Project which will be adjacent to Ocean Wind I, starting 9 miles off of coastline and construction is expected to start in 2028. There was no information on Ocean Wind's Website on number of WTGs but capacity is 1148MW. Locations (lease areas) for Atlantic Shores North and Ocean Wind 2 projects are on Image 1 above.

Other East Coast Projects

Based on this map, a total of 5,549 wind turbines are planned off the East Coast.



Organizations Opposing the Offshore Wind Turbine Projects

There are plenty of organizations and local governments opposing the wind development (onshore and offshore), but these are several that post information from all the others who may have a specific area of opposition. Their websites also have presentations, studies, and information on timelines, public input sessions, approvals, etc.. for the projects.

See link below for list of 188 Groups in the US opposing Wind Energy Projects

https://docs.google.com/spreadsheets/d/e/2PACX-1vRyHXrs7prsqmTf5uJN8DiWUtj9g38cyBIZKa98kvK1sxUYkPKAVl_Ivz0RRSqyKgoUUQqMkqSENH3X/pubhtml?gid=0&single=true&fbclid=IwAR0e-JDWDTOE3rdelGnX1p3ZEz53g-EPdnduRP9pdt-Pl-p0CyQZFApf-Iw

Home | SaveLBI.org - LBI Coalition for Wind Without Impact

SaveLBI, Inc, a 501(C)3 organization, was founded by Dr. Robert Stern who is a resident of LBI. His focus is on the Atlantic Shores Project. The goal of the organization is to move the windfarms 35 miles off the coast to another lease area called Hudson South off the coast of New Jersey. His organization has filed a law suit against BOEM stating that BOEM violated its own regulatory procedures because it didn't take public input when establishing the wind energy areas. During the Site Approval Plan (SAP) process, LBI, Atlantic City and Brigantine were under one lease area 0499. In March of 2022, BOEM approved Atlantic Shores to separate LBI lease area (now lease 0549) from Brigantine and Atlantic City Project are lease area 0499, coincidentally a few months after SaveLBI.org's lawsuit was filed. Now called Atlantic Shores South project, lease area 0499 is the first phase of the wind development project and lease area 0549 (known as Atlantic Shores North project) is supposedly going to be completed later. Information regarding Atlantic Shores North project does not exist on BOEM website.

Protect Our Coast NJ - Stop NJ Offshore Wind Development

Suzanne Leary Hornick is the president of Protect our Coast NJ and its focus is on the Orstead Developer's Ocean Wind I and II Projects. Ocean Wind 1 project will extend from Ocean City to Atlantic City. Ocean Wind II project – which will be completed at a later date - will extend from the edge of Ocean City down to Cape May. The goal of the organization is to oppose ocean wind farms. This organization has partnered with many environmental organizations who oppose the ocean wind farms. This organization does not have its own 501c3 status but is part of the Caesar Rodney Institute. Per their website donation page, donations go to the Ocean Environment Legal Defense Fund (RE: Protect Our Coast NJ). The organization has not taken legal action at this point.

Wind Energy and Wind Power News: New Jersey [Wind Watch] (wind-watch.org)

National Wind Watch® (NWW) supports groups and individuals working to save rural and wild places from heedless industrial wind energy development. Through its web site, NWW promotes awareness of and documents the negative impacts of industrial-scale wind turbines on the environment, economy, and quality of life. National Wind Watch is a U.S. 501(c)(3) charitable corporation.

Energy security and the need to reduce pollutants and excess greenhouse gas emissions are serious issues. Therefore, people should not be distracted by symbolic or “feel-good“ gestures that fail to meaningfully address these issues and in fact do substantial harm. NWW advocates an intellectually honest assessment of the benefits and costs of industrial wind development. The objective is to be a resource of information and assistance for individuals and local groups seeking the facts about industrial wind power that are not provided by the industry and its promoters.

NWW maintains nonpartisanship regarding both politics and other sources of energy. Its policy has been to resist advocating for other sources to focus on the impacts of industrial-scale wind, and NWW recognizes that both opposition to and support for wind energy span the political and cultural spectra. Board members are bound by a conflict-of-interest policy.

Most of the material on their web site does not originate from NWW itself; it is presented without commentary, and the sources are provided. They do not necessarily reflect the views of NWW. News items and documents are chosen to provide a central reference library of material that is not usually publicized by the industry and its supporters.

National Wind Watch provides a means for diverse groups fighting inappropriate wind energy projects to share information and strengthen each other. All of the work for NWW is by unpaid volunteers with many other demands on their time and resources but who consider this effort an important contribution to protecting our world.

NWW receives no support from any industry or political interests. Funding comes only from concerned individuals, representing a broad range of perspectives but united in recognizing industrial wind as destructive and a false solution.

Wind Watch is an international organization. Link above is for New Jersey information on their website.

https://cleanoceanaction.org/be-the-solution-to-ocean-pollution

Clean Ocean Action is a leading national and regional voice working to protect waterways using science, law, research, education, and citizen action.

Clean Ocean Action (COA) is a broad-based coalition of 125 active boating, business, community, conservation, diving, environmental, fishing, religious, service, student, surfing, and women's groups. These "Ocean Wavemakers" work to clean up and protect the waters of the New York Bight. The groups came together in 1984 to investigate sources, effects, and solutions of ocean pollution. What follows is a description of the network.

Under the guidance of COA's Board of Trustees, COA's staff researches pollution issues affecting the marine environment, then formulates policy and campaigns to eliminate each pollution source. The staff then coordinates and organizes the Ocean Wavemakers (Participating Organizations, Concerned Businesses, Educators for a Clean Ocean, and Concerned Citizens) to use their individual experience and expertise to help. Press events, rallies, writing letters, making phone calls, testifying at public hearings, and distributing literature are just some of the ways members of the coalition become involved.

WindAction

The Industrial Wind Action Group Corp ("The WindAction Group"), a volunteer group with no paid staff, was formed in 2006 in response to growing demand for information on the potential harmful impacts of large-scale wind energy facilities on wildlife and the natural environment and expanded into other forms of large-scale renewable energy; impacts on neighboring properties including human health, property values and the methods for assessing, mitigating and eliminating these impacts. Support for this effort comes from a large and diverse group of environmentalists, energy experts, and ordinary citizens.

“While it might appear that our library carries a bias against large-scale renewable energy development this is not our intention. Rather our intent is entirely on balancing the discussion on this important topic where we provide both positive and negative information. This is in contrast to many of the mainstream media stories which often do not capture the risks and costs of these energy sources.”

WindAction is not funded in any way by others in the energy industry including coal, natural gas, nuclear power, or other renewable energy resources, nor are we affiliated with large political activists’ groups. Support for efforts is entirely grass roots, coming from a diverse group of environmentalists, energy experts, and everyday citizens who share our concerns about industrial renewable energy development. Any donations received go directly to defraying WindAction expenses including maintenance of website and extensive database.

Save Right Whales Save Right Whales

They are an alliance of grassroots environmental and community organizations, scientists, and conservationists working to protect the critically endangered North Atlantic right whale and other marine life from the industrialization of our ocean habitat through large-scale offshore wind energy development.

Save Right Whales Coalition is committed to educating the public and political leaders on the harms of offshore wind on ocean life and for those who live, work, and visit our coastal communities.

RODA Fisheries Home — Responsible Offshore Development Alliance - Responsible Offshore Development Alliance (rodafisheries.org)

This nonprofit represents the fishing industry and its approach is to directly collaborate with relevant regulatory agencies (e.g., National Marine Fisheries Service, Bureau of Ocean Energy management, U.S. Coast Guard, fishery management councils, and state agencies), offshore developers, science experts, and others to coordinate science and policy approaches to managing development of the Outer Continental Shelf in a way that minimizes conflicts with existing traditional and historical fishing.

Bonnie Brady, on the Board of RODA, is active on social media and offers much advice and guidance to the other Offshore Wind nonprofits. She is an expert in her field, beginning as the Executive Director of the Long Island Commercial Fishing Association (LICFA) in 2000, after working as a reporter, paramedic, DC Hill staffer, and Peace Corps volunteer in Cameroun. She lives in Montauk, New York’s largest commercial fishing port and her husband is a commercial.

Green Oceans - Home (green-oceans.org)

Lisa Quattrocki , MD, PhD of Little Compton and Bill Thompson of Tiverton are lead members of Green Oceans organization who are opposing offshore wind on the east coast.

Offshore Wind Projects | Northeast Ocean Data Portal

This is a data base source for research on Wind Energy

Organizations Advocating Offshore Wind Turbine Projects

Atlantic Marine Conservation Society (amseas.org)

Home | SEWC (sewind.org) Southeastern Wind Coalition

National Wildlife Federation (nwf.org)

International Brotherhood of Electrical Workers (IBEW)

Ocean Conservancy About Us - Ocean Conservancy

League of Conservation Voters Home - League of Conservation Voters - Our Earth is Worth Fighting For (lcv.org)

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