

OFFSHORE WIND PROJECTS FACTS

(OCEAN WIND 1/ ATLANTIC SHORES)

Authority over Offshore Wind

Federal- At the federal level there is one main agency that handles offshore wind energy. [The Bureau of Ocean Energy Management \(BOEM\) is an agency in the U.S. Department of the Interior \(DOI\) responsible for managing development of the nation's offshore resources in an environmentally and economically responsible way, this agency works to decide Wind Energy Areas, or WEAs.](#) Similarly, this agency handles and manages any potential energy sources that can be derived offshore.

State- At the state level there are several agencies that are involved in bringing offshore wind energy online to the grid. Agencies such as New Jersey Department of Environmental Protection (NJDEP); New Jersey Board of Public Utilities (NJBPU); New Jersey Economic Development Authority (NJEDA), and others are responsible for almost every aspect of creating a strong offshore wind industry. [States also generally have jurisdiction over the permitting and siting of electric transmission, including interstate transmission passing through their territory.](#)

Multi-State- [Renewable energy projects also need to connect to the local electric grid, also called a "regional transmission network," in order to deliver their power to customers.](#) This requires much cross state collaboration between states that share a regional transmission network.

Local- [Typically, at the lowest level, a renewable project requires a land-use permit based on the zoning and planning ordinances of the city or county government in which it would be sited.](#) More broadly, renewable generation and transmission projects often require the consent of the communities in and around their area of operation.

Basic Knowledge on Offshore Wind

Lease Sites Location- The placement of Wind Energy Areas (WEAs), which are the envelopes that contain offshore wind farms, is highly regulated by the federal government Department of Interior's Bureau of Ocean Energy Management (BOEM). [Once BOEM has designated a WEA, it is an 8 to 10-year process for a developer to secure the 30-year lease of the site, go through an extensive federal and state permitting process and then finally build the turbines and connect them with power cables to the onshore grid.](#)

Decommissioning & Modernizing Process- Within two years of cancellation, expiration or other termination of the lease, the lessee would be required to remove all devices, works and structures from the site and restore the leased area to its original condition according to NJ standards. [Blades can be recycled, the process includes:](#)

Marine Traffic- BOEM does not have the authority to restrict vessel traffic in and around offshore wind facilities, and the United States Coast Guard (USCG) has stated that safety zones and buffers would be evaluated on a case-by-case basis. Recreational boat traffic will resume once construction has completed, however, larger vessels such as commercial fishing vessels may just need to bear in mind the perimeters on the windfarm to safely navigate through.

Lighting- [Lights shone at night will be visible only to airplanes and boats, but may be visible from the shoreline when activated.](#) The lighting on top of turbines will be obstruction lighting, or FAA L-864 aviation lights, which appear as red flashing, strobe, or pulsed obstruction lights to activate only with low passing aircraft flying at an altitude of 2,000 ft in and within 3 nautical miles of the wind farm during the evening hours after sunset.

Reliability- Offshore wind turbines are [built and programmed](#) to withstand severe weather conditions. Wind turbine blades are mostly made with fiberglass or carbon fiber heated together with resin to combine into a material that is light and yet still strong enough to withstand intense storms. Here in New Jersey, our strongest storm was SuperStorm Sandy that hit our coast as a Category 1 hurricane. Among the features of these wind turbines is a maximum wind speed at which point the blades cease spinning, this is the case of our harsher weather such as tropical storms in the summer and nor'easters in the winter.



Wildlife and Offshore Wind

Marine Mammals - Offshore wind projects undergo extensive environmental reviews from the state and federal government to protect existing marine populations, including whale populations that live off of our shores. Extensive measures are taken before, during and after the installation of offshore wind farms to ensure that the ocean environment is protected so that wildlife can thrive, including a joint NOAA and BOEM Federal protection program for the North Atlantic Right Whale (NARW). [NARW's are notoriously choosy eaters and their favorite food, C. finmarchicus is not present in large amounts off New Jersey's shores](#), so this means that the NARW isn't common to NJ. NARW are rarely found in NJ during the months of May-October, but the innovative [ECO-PAM project](#) is improving the detection of whales during the months that they are passing through our area. Further, Protected Species Observers, or PSOs, are required to halt any survey work if there is a marine mammal or other wildlife spotted within 1 mile.

Birds & Bats - Offshore wind energy areas are sited in places where there is minimal bird activity. [Offshore wind project siting considers years of studies of migratory bird routes to minimize risk](#), for example, Ocean Wind 1 was planned for the last decade. New research suggests that experimenting with using bright colors and certain lighting can help dissuade oncoming birds from hitting the turbines. [Due to low exposure of bats to the Lease Area, the offshore components of the project are unlikely to have population-level impacts for any species of bats](#). In addition, individual federally and state-listed bat species are unlikely to be affected.

Benthic - Turbine structures and the associated [scour protection](#) act as an artificial reef which attracts fish and large crustaceans. [This high density and high biodiversity of organisms on offshore wind turbines, and the associated processes, account for a similar organism recycling process that occurs in a natural benthic environment](#).

The Cold Pool and Fisheries of the Mid Atlantic Bight (MAB)

Local fishermen have been worried that OSW on our own shores might disrupt the cold pool of the MAB; this cold pool is formed by stratification (a separation of hot and cold layers of water) which allows many commercially-important fish species to thrive in NJ waters during the summer months. [Rutgers research](#) shows that any cold-pool related concerns raised by [studies of European wind farms](#) are not relevant to the MAB, as these two contexts have very little in common during the summer months when the Cold Pool forms. The MAB exhibits some of the strongest stratification in the world; this, in combination with currents ~5x slower than those measured in Europe, lead researchers to conclude that the turbines will not create turbulence that is significant enough to disrupt the cold pool.

How Will Cables Tie into Offshore Wind?

EMF (Electric & Magnetic Fields)- [BOEM has completed several studies related to understanding the effects of EMFs on fish and invertebrates in other regions of the U.S. Current research suggests that](#), while some species (such as skates, sharks, and lobster) are sensitive to EMF, detrimental effects to populations are not expected. EMFs are physical fields produced by electrically charged objects. Operation of turbines does not generate EMF; however, once the cable becomes energized it will produce a magnetic field. Cables will be buried beneath the seafloor 6 ft and are wrapped in a sheath that eliminates direct electric fields and reduces magnetic and induced electric fields. The EMF decays quickly with distance from the cable and burial helps minimize potential exposure.

EXISTING CABLES- There are many cables that exist and come onshore in New Jersey. The existing cables that enter NJ waterways currently include cables for Facebook, Google, and Amazon, among many others that carry data or signals across waterways. Historically, [cable landing sites](#) have featured minimal infrastructure, perhaps a manhole near the beach where they come ashore and sometimes a small facility operated by the phone company or cable owner.



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Impacts on Property Value

Offshore wind farms situated greater than 6 miles offshore do not significantly impact property values. [One study shows](#) that there is no statistically significant evidence that housing prices are affected by the installation of offshore wind farms at this distance. In some cases, property values increased.

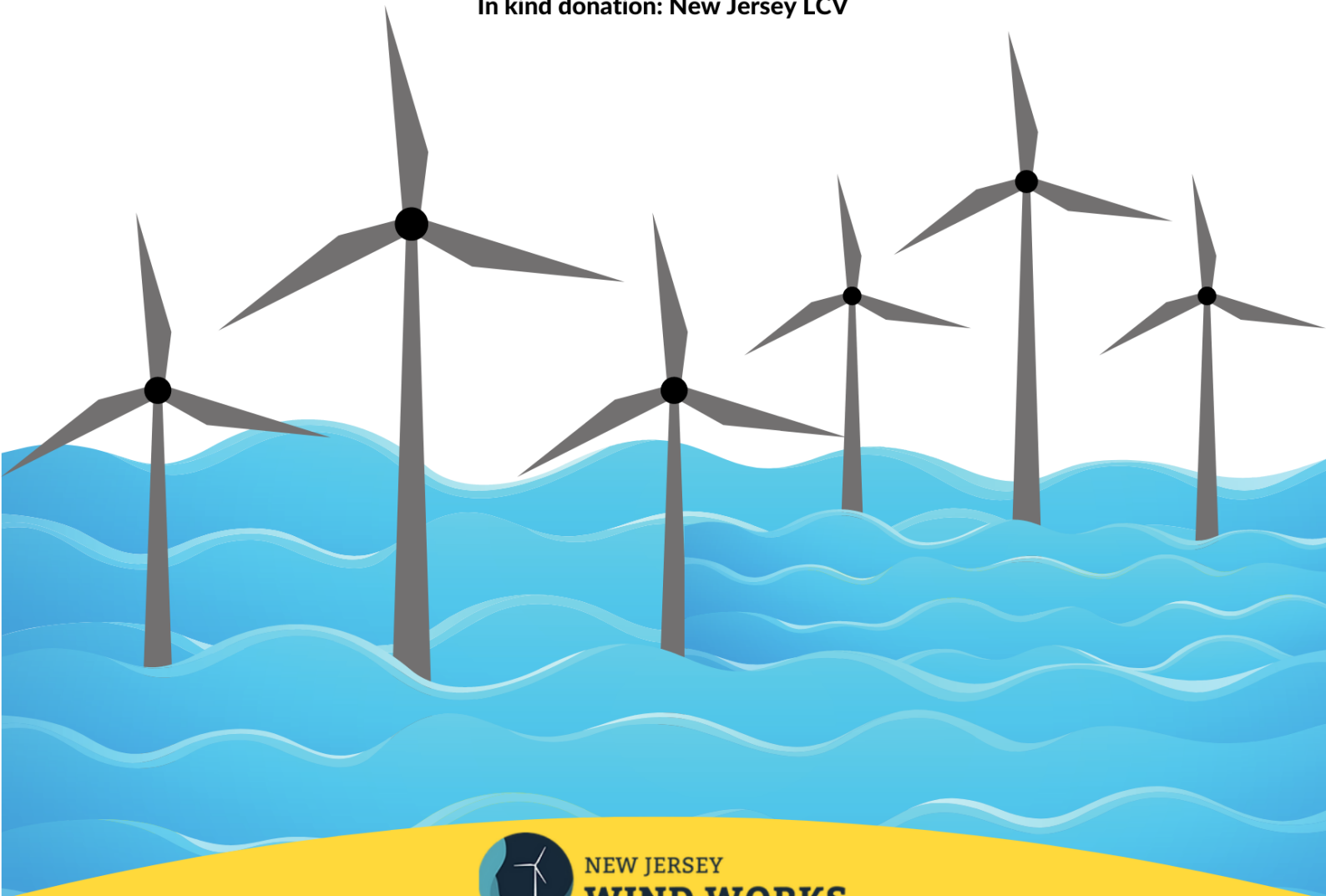
Effects on the Local Economy

Offshore wind projects do not harm tourism, they can actually create an entirely new kind of “eco-tourist”. These are travelers that seek to visit specific sites like national parks, wind farms, and others. Some individuals have expressed concerns over potential negative effects to tourism, however, places that have offshore wind have actually seen growth in tourism. [New Jersey could benefit by combining ecotourism with some of our existing options such as fishing and water sports, which would grow the local economy and create opportunities for local businesses.](#)

Prepared by a coalition of the following organizations:

Anglers for Offshore Wind, Greenfaith Alliance, Association of NJ Environmental (ANJEC), New Jersey Sustainable Business Council, Offshore Power LLC, Great Egg Harbor River Council Association, Waterspirit, New Jersey Environmental Lobby, Pinelands Preservation Alliance, New Jersey Audubon, Working Families Alliance (NJWW coalition members)

In kind donation: New Jersey LCV



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