

WILMINGTON EAST OFFSHORE WIND VISUALIZATIONS

PRESENTED BY OSW4NC

BACKGROUND

Offshore Wind for North Carolina (OSW4NC) presents visualizations of the Wilmington East Offshore Wind Plan on Friday, January 28th from 9:00 am to 1:00 pm in the Great Hall of the Southport Community Center. The format of this event is an "open house" to view the visualizations and speak to members of OSW4NC at your own pace.

This event is designed to provide stakeholder groups in Brunswick and New Hanover counties with an opportunity to view projected images of the Wilmington East Wind Energy Area in person and provide clarity on visual impacts in Southeastern North Carolina.

These visualizations were commissioned by the Southeastern Wind Coalition (SEWC) in order to provide resources and clarity for local stakeholder groups in proximity to the Wilmington East Wind Energy Area. Members of the OSW4NC Coalition will be present to facilitate this event, answer questions, and receive feedback.

High resolution imagery for this project was sourced from the Bureau of Ocean and Energy Management (BOEM) and includes three locations in Brunswick County, NC (Bald Head Island, Oak Island, and Holden Beach). The visualizations were produced by UNASYS, a UK based company that specializes in large scale energy transition processes, and funded by the UK government.

WILMINGTON EAST WIND ENERGY AREA

The Wilmington East Wind Energy Area (WE WEA), as defined by the US Department of Interior's Bureau of Ocean Energy Management (BOEM) as of January 2022, begins about 17 nautical miles from Bald Head Island at its closest point and extends approximately 18 nautical miles in the southeast direction to its furthest point from land.

The proposed lease area consists of approximately 127,865 acres and includes the majority of the Wilmington East Wind Energy Area, which has the potential to unlock over 1.5 GW of offshore wind energy and power more than 500,000 homes

VISUALIZATIONS

These visualizations represent a comprehensive visual impact assessment for the Wilmington East Wind Energy Area.

There are three viewing points for our visualizations, representing the three beaches closest to the wind energy area:

- VP1 Bald Head Island
- VP2 Oak Island
- VP3 Holden Beach

VP1 Bald Head Island has two day time visuals showing UV haze and clear, polarized conditions at a viewing angle of 41 degrees. VP2 Oak Island has two day time visuals showing UV haze and clear, polarized conditions at a viewing angle of 37 degrees. VP3 Holden Beach has two day

time visuals showing UV haze and polarized, clear conditions at 37 degrees and one night time visual under a clear night condition at 37 degrees.

Weather conditions, including haze, have a significant effect on visibility. Most days off the North Carolina coast have significant enough haze that one can only see 20 nautical miles for 75% of the day on 11% (40 days) of the year. Compared to other seasons, summer days have the highest amount of haze/humidity, making it more difficult to see further distances. It is more common to experience clear days/nights in the winter when humidity and air pollutants are at their lowest levels. To make the distinction between the more commonly experienced hazy conditions, and a perfectly clear condition, photographs with two different lenses were used – a polarized lens simulating a haze free sky, and a UV lens simulating a more common hazy/humid condition.

KEY SPECIFICATIONS

- Turbines simulated: GE Haliade -X 13MW
- Height of turbine at nacelle centre: 524 feet (150 metres)
- Number of wind turbines – 122
- Height at highest point (highest blade tip): 853 feet (260 metres)
- Rotor diameter: 722 feet (220 metres)
- Above-water support structure: Single pole that is 20 feet (6 metres) at the waterline, or as specified for turbine model
- Colour of wind turbines: Off-white (5% grey)

- Substations: None have been simulated, but space has been added for 2 units in the field. Those units would be of approximate height and dimensions: 114 feet by 82 feet by 50 feet (35 metres by 25 metres by 15 metres)
- Lighting: 2 aviation warning lights spec L864 Fixtures duty and standby on top of the Nacelle. Medium intensity flashing red. 3 L810 marine traffic obstruction fixtures at 120-degree spacings around the perimeter of the tower, halfway between the sea and the nacelle. This number would increase to 4 should the diameter of the tower be more than 20 feet (6 metres)

CAMERA SPECIFICATIONS

Nikon D7000 16.2 MP DSLRCamera
Nikkor AF-S DX 35mm fixed lens 4

- A +/-50mm lens on a 35mm camera is an industry standard for preparing single-frame photographic simulations
- The Nikkor 35mm fixed lens mounted on the Nikon D7000 produces an equivalent to a 52.5mm lens on a 35mm camera
- Nikkor DX 35mm lens captures a horizontal angle of 37.3° and vertical angle of 25.3°, or 2,238-by-1,518 arcminutes
- The Nikon D7000 highest resolution image is 4,928-by-3,264 pixels 16MP (This was upgraded to 70MP by Unasys utilizing Artificial Intelligence software)
- Each pixel subtends 0.45 arcminutes, which is less than the maximum of 0.5 arcminutes.

MAPS: EXISTING LEASE AREAS

OSW4NC commissioned images of the Wilmington East Offshore Wind Area in order to address the public's questions and concerns regarding the visual impacts of the lease area on our coastal communities. In order to answer some of these questions, we have created several maps representing the distance between Active Renewable Energy Leases and US Historic Lighthouses on the coast of Delaware, New Jersey, and Rhode Island. The Active Renewable Energy Lease Areas represented include the Maryland Lease Area, the Delaware Lease Area, the New Jersey Lease Area- South, the New Jersey Lease Area- North, the New York Lease Area, and the RI/MA Lease Area.

The following maps were produced using MarineCadastre.gov, which was developed through a partnership between the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of the Interior's Bureau of Ocean Energy Management (BOEM). Both maps represent the distance in nautical miles (nm) between Active Renewable Energy Leases to US Historical Lighthouses in New Jersey, Delaware, and Rhode Island. On average, Active Renewable Energy Leases are approximately 11.58 nm from US Historical Lighthouses.

The Wilmington East Wind Energy Area will be approximately 17.5 nautical miles from the Old Baldy Lighthouse on Bald Head Island, which is 6 nm further than most lease areas in the North East.

Figure 1. Distance in nautical miles (nm) from Active Renewable Energy Leases for offshore wind to US Historic Lighthouses off the coast of Delaware and New Jersey. The average distance between lease areas and US Historic Lighthouses is 11.02 nm.

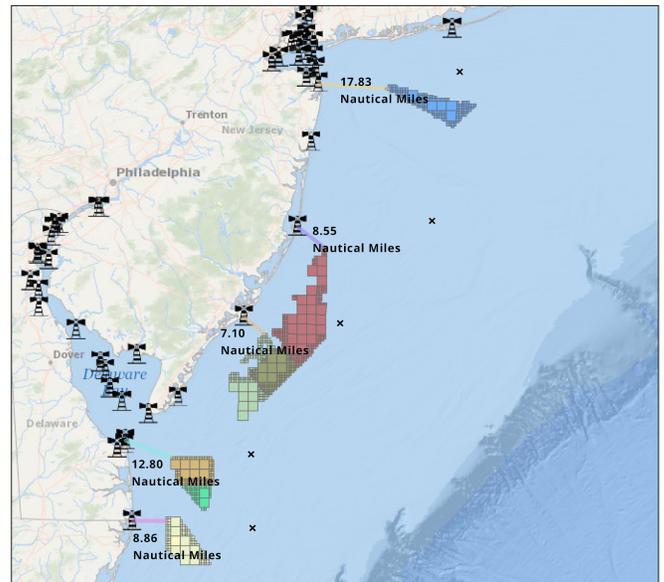
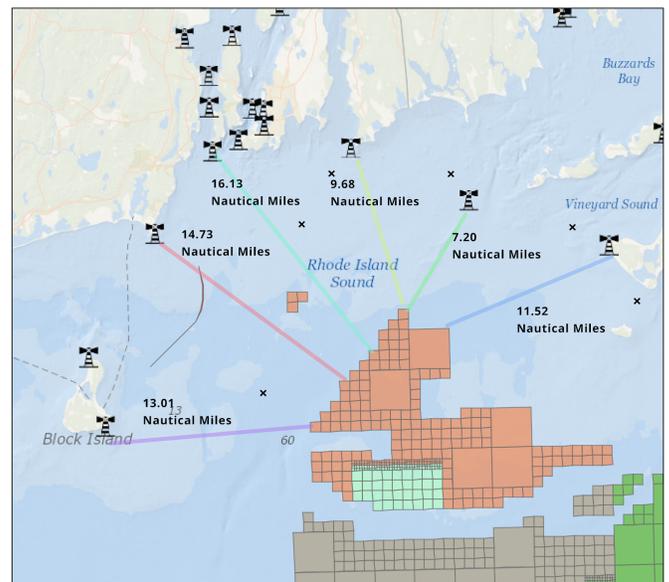


Figure 2. Distance in nautical miles (nm) from Active Renewable Energy Leases for offshore wind to US Historic Lighthouses off the coast of Rhode Island. The average distance between lease areas and US Historic Lighthouses is 12.04 nm.



CONTACT INFORMATION

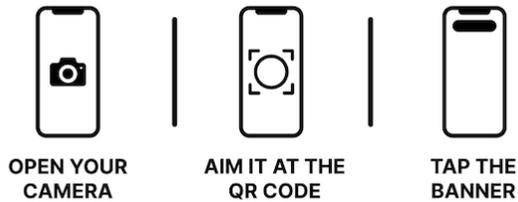
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Please scan the QR code with your smartphone camera in order to sign up for Offshore Wind for North Carolina newsletters.



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ABOUT OSW4NC

Offshore Wind for North Carolina is a coalition of organizations working together to ensure that North Carolina is positioned as a national leader for responsible offshore wind by advocating for policies and regulations necessary to achieve a just and equitable adoption of North Carolina's offshore wind energy targets of 2.8GW by 2030 and 8.0GW by 2040.

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OSW4NC SURVEY

Please scan the QR code with your smartphone camera in order to complete a short survey. We encourage you to leave feedback about today's event and ask questions for OSW4NC representatives. If you would like to fill out the survey in-person or anonymously, please ask an OSW4NC representative for a hard copy.



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CAMERA



AIM IT AT THE
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