The Offshore Wind Round-Up

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IN THIS ISSUE

QUESTIONS FROM READERS

Is the Atlantic Shores Offshore Wind project the largest offshore wind project anywhere in the world?

ANSWER: ***No, it is not***. The multi-phase Hornsea project, off the Yorkshire coast of England in the North Sea, will be the largest with **570 offshore wind turbines** installed after phase three of the project is complete in 2027. All three phases, when completed, will have a **total production capacity of 5.5 gigawatts** ("GW") of power.

At the present time, Hornsea One and Hornsea Two are **both operational with 339 offshore wind turbines** combined, **producing 1.2 GW and 1.4 GW** of power, respectively. Hornsea Three began construction last year and will have an **additional 231** offshore wind turbines when completed, producing **2.9 GW of power**. Hornsea Four is expected to be completed in 2030 and include an additional 180 offshore wind turbines, an estimate based on turbine sizes currently available.

The Atlantic Shores Offshore Wind Farm is being built in two phases. Atlantic Shores South, which includes the two projects called Project 1 and Project 2 in the southern portion of the 183,353-acre leased area, will have 200 offshore wind turbines and generate **1.5 GW of power**. The second and last phase of the build, Atlantic Shores North, will include an additional 157 offshore wind turbines. Calculating the power output of that northern area as 2.83 GW (157

turbines x 18 megawatts each = 2,826 megawatts divided by 1,000 = 2.83 gigawatts), the total in the entire Atlantic Shores Offshore Wind Farm when completed with 357 turbines would have a **combined output of 4.33 GW of power**.

Note that unlike Hornsea One and Hornsea Two, no portion of the Atlantic Shores project is operational at this time.

*Each phase of the Hornsea project has its own website and the fastest way to find those websites is to Google them. The article below, however, provides **a succinct overview of the entire Hornsea project** – all four phases -- which is not available as clearly elsewhere.*

Access the full article by clicking on the link below
https://en.wikipedia.org/wiki/Hornsea_Wind_Farm

Will the individual turbines used in the Atlantic Shores project be the largest in the world?

ANSWER: ***Difficult to say definitively*** because it's a moving target. So many projects all over the world are currently under development or being constructed. With the wind turbine industry constantly fine tuning its technology, it is impossible to predict options that projects under development at this time will have when they are ready to make decisions about the size of the wind turbines to be used in their offshore wind farms.

At this point, however, **Atlantic Shores South is committed to using the Vestas V236-15.0 MW** offshore wind turbine which is 1,049' tall with three blades, each 379' long.[1] Other projects have announced the use of wind turbines that come close to those dimensions, but do not exceed them. For example,

> **Dogger Bank Wind Farm,** also off the coast of Yorkshire England in the North Sea, has committed to the **GE Haliade-X**, which is 853' tall with blades each 351' long.[2]
>
> **Hornsea One**, fully operational five years ago, is using the **Siemens Gamesa SWT-7.0-154** offshore wind turbines, which are 597' tall with blades each 246' long.[3]
>
> **Hornsea Two**, fully operational two years in August this year, is using Siemens Gamesa 8.0-167 DD with a height of "more than 656 feet" and blades each 266' long.[4]

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[1] *Sources*: Atlantic Shores South's Construction and Operation Plan Page E-6 COP and the Vestas website https://us.vestas.com/en-us/products/offshore/V236-15MW

[2] *Sources*: Dogger Bank Wind Farm https://doggerbank.com/construction/offshore/ and GE Vernova website https://www.gevernova.com/wind-power/offshore-wind/haliade-x-offshore-turbine - :~:text=The Haliade-X offshore turbine,technology for customers seeking financing.

[3] *Sources*: Siemens Gamesa SWT-77.0-154 brochure https://pdf.archiexpo.com/pdf/siemens-gamesa/swt-70-154/88089-249551.html and Power Technology website https://www.power-technology.com/projects/hohe-see-offshore-wind-farm-north-sea/ - :~:text=The SWT-7.0-154 turbine,of 182m to blade tip.

[4] *Source*: Ørsted website https://orsted.co.uk/energy-solutions/offshore-wind/our-wind-farms/hornsea2

Hornsea Three, with construction in progress and expected through March 2026, is using the Siemens Gamesa 14-236 DD offshore wind turbine, with each blade 377' long. Height was noted as "site specific" on numerous websites and we are still searching for information about how tall it is.[5]

In the U.S., Dominion Energy announced its selection of the Siemens Gamesa 14-222 DD offshore wind turbines for its **Coastal Virginia Offshore Wind Farm**. That project is expected to be fully operational in 2026 with 176 offshore wind turbines, with each blade 354' long.[6] Like information available for Hornsea Three, the height is noted as "site specific."

Will there be blinking lights on the offshore wind turbines?

ANSWER: ***Yes, they will have blinking lights like all cell phone towers, water towers and airplanes, but it is unclear at this point what kind of lighting system will be used on the Atlantic Shores project.***

If the installation of lights follows current Federal Aviation Administration ("FAA") regulations, **red flashing lights** would be installed on the nacelle, which sits on top of the tower and houses the mechanical parts that turn the blades, which are attached to it.

Read the full description in section 5.3 Lighting and Marking in Atlantic Shore South's Construction and Operation Plan ("COP") by clicking on this link
https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/AtlanticShoresCOPVolume I_Project Description.pdf

Ideally, however, both Atlantic Shores South and Atlantic Shores North would apply for and receive approval from the FAA to install an **aircraft detection lighting system ("ADLS")**. Lights would only activate when planes are flying at night closer than three nautical miles from the wind turbines and at least 1,000' above them. In its COP, it was noted that Atlantic Shores South was considering using this system.

A report commissioned by Atlantic Shores and prepared by the Capitol Airspace Group, updated March 2024, analyzed **how often the ADLS would have been activate**d, based on actual flight data, in the Atlantic Shores North area.

[5] *Sources*: Siemens Gamesa website https://www.siemensgamesa.com/-/media/siemensgamesa/downloads/en/products-and-services/offshore/brochures/siemens-gamesa-offshore-wind-turbine-brochure-sg-14-236-dd.pdf and Power Technology website https://www.power-technology.com/projects/hornsea-3-offshore-wind-farm-north-sea/?cf-view

[6] *Source*: OffshoreWIND.biz website https://www.offshorewind.biz/2021/12/21/siemens-gamesa-dominion-energy-solidify-massive-offshore-wind-deal-in-us/ and Siegmens Gamesa website https://www.siemensgamesa.com/products-and-services/offshore/wind-turbine-sg-14-222-dd

From the report: "Historical air traffic data for lights passing through the light activation volume indicates that ADLS-controlled obstruction lights would have been **activated for a total of 20 hours 25 minutes and 15 second in a one-year period**."

Access the full report by clicking on this link
https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/new-jersey/2024-03-01_App II-M2_ADLS Efficacy Analysis.pdf

I read that when considering where to put the offshore wind farm that has become Atlantic Shores, BOEM [Bureau of Ocean Energy Management] looked at vessel traffic and other factors in 2010. The comment was presented as a negative. Why? *The data were too old? The patterns of vessel traffic since 2010 have changed and therefore the site of the offshore wind farm should be re-evaluated?*

ANSWER: ***Only the writer of that statement can answer your question about its intent.*** A couple of readers offered the guesses about the writer's meaning, which are included above, and we turned those conjectures into questions we could research.

- ***How old were the data used by the BOEM*** *when it began to consider the area that is now Atlantic Shores as a possible location of an offshore wind farm**?***

  ANSWER: ***Not able to say exactly because It is unclear how long BOEM's analysis process lasted*****,** but the evidence supports the conclusion that the data used were the **most current data available** at the time. Lease OCS-A 0499 -- which is Atlantic Shores South[7] -- was auctioned in September 2015 through the competitive lease sale process conducted by BOEM.

  Two-way shipping traffic safety fairways (routes) off the coast of New Jersey and elsewhere in the entire region covered by the Coast Guard Sector Delaware Bay were **established in 1995** when the final Coast Guard's Port Access Route Study was published. Those same fairways were still being used in 2021 when the Coast Guard began to examine the possibility of developing navigation safety corridors that would perpendicularly bisect these existing shipping safety fairways.

  Coast Guard Sector Delaware Bay is responsible for some parts of the seacoast of New Jersey and the offshore approaches to the Delaware Bay

Access BOEM's description of the commercial leasing process by clicking on this link
https://www.boem.gov/sites/default/files/documents/about-boem/Wind-Energy-Comm-Leasing-Process-FS-01242017Text-052121Branding.pdf

[7] The area of 102,124 acres in the southern portion of the entire leased area

- ***Have the configurations of the shipping lanes off the coast of NJ changed since 2010?***

  ANSWER: ***They have not.*** A subsequent Coast Guard study **published in 2017**, the Atlantic Coast Port Access Route Study ("Coast Study"), analyzed the Atlantic Coast waters seaward of existing port approaches within the U.S. and identified navigation safety corridors along the Atlantic Coast necessary to ensure safe navigation, but **did not alter the shipping safety fairways.**

  In 2019, the Coast Guard announced **a new study of routes** used by ships to access ports on the Atlantic Coast of the United States. This new study of routes supplements and builds on the previous Coast Study by concentrating on the navigation routes to and from U.S. ports, and their interconnectedness to the Atlantic Coast.

  The draft report, which included the study's conclusions, was **published in 2021**. The draft report **did not recommend altering the shipping safety fairways**, but it included a recommendation that an additional fairway in the space between the Ocean Wind and Atlantic Shores projects would increase "the safety of vessel navigation."

Access the full draft of the Coast Guard's 2021 report titled USCG-2020-0172 Port Access Route Study: Seacoast of New Jersey including offshore approaches to the Delaware Bay*, by copying and pasting the following into your browser (or by typing in what you see below):*

USCG-2020-0172-0044_content.pdf

Will New York State receive any of the power generated by the Atlantic Shores offshore wind farm?

ANSWER: ***No, it will not***. All the power generated by the Atlantic Shores project – at this point 1,510 megawatts of power has been approved – will be delivered to the state of New Jersey.

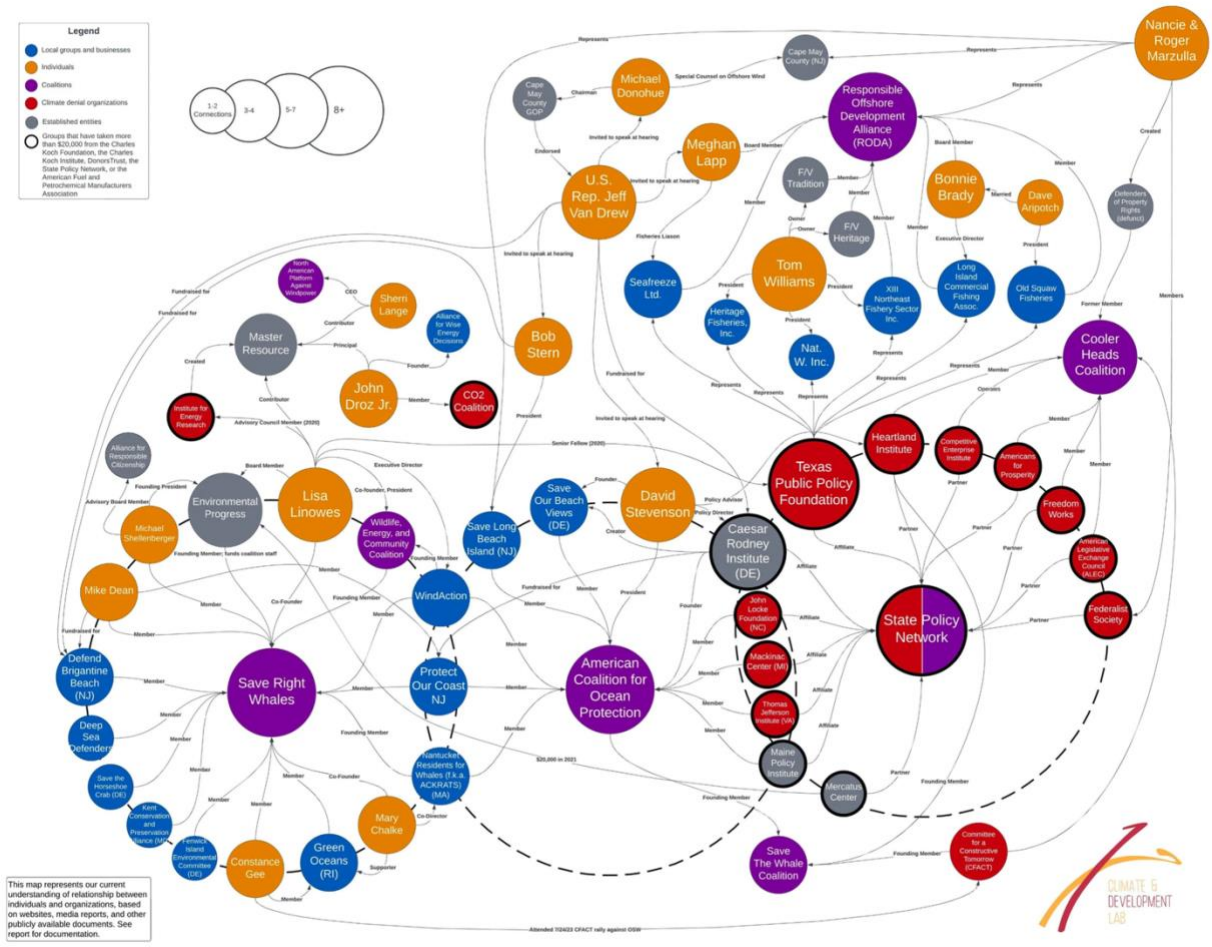
Access a statement that confirms the NJ Bureau of Public Utilities decision to that effect by clicking on this link
https://atlanticshoreswind.com/our-projects/

RECENT REPORT FROM BROWN UNIVERSITY

We received comments about a report mentioned in a recent **article in *The Sandpaper*** and questions about how to get access to it. The article appeared on page 22 of the April 10 issue **under the headline** "Offshore Wind Fight Focuses on Funding of Local Opponents."

The **title of the report** mentioned in that article is "Against the Wind: A Map of Anti-Offshore Wind Network in the Eastern United States." The report was published in December 2023 and authored by professors at the Climate and Development Lab at Brown University.

The relationship map included in this report and reproduced on the next page shows the network and its overlaps and connections.



Blue circles show local groups; **orange** circles are individuals; **purple** circles are coalitions, although not all groups who are members of these coalitions are included on the map because of space constraints; **red** are climate denial groups; **grey** circles are groups that do not fall into any of these previous categories and a black border around a circle means that the group accepted at least $20,000 from one or more of five noted anti-wind organizations, e.g., Charles Koch Foundation and the American Fuel and Petrochemical Manufacturers Association.

Access the full report by clicking on the link below. Scroll down on the screen that appears when you click. At the bottom of that screen, click on Access the Full Report Here
https://www.climatedevlab.brown.edu/post/against-the-wind-a-map-of-the-anti-offshore-wind-network-in-the-eastern-united-states

NJBPU OPENS FOURTH SOLICITATION

From the April 30 press release from the NJ Board of Public Utilities ("NJBPU"):

"Governor Phil Murphy and New Jersey Board of Public Utilities (NJBPU) President Christine Guhl-Sadovy today announced the approval of the fourth offshore wind solicitation guidance document (SGD) and the opening of the fourth offshore wind

solicitation. The application window for the fourth solicitation opens today, April 30, until 5:00 p.m. ET on July 10, 2024.

The fourth solicitation seeks to award between 1.2 gigawatts and approximately 4 gigawatts of offshore wind generation capacity. In the process of meeting New Jersey's procurement goals, the fourth solicitation aims to encourage competition, promote economic development, and combat climate impacts, all at the lowest reasonable cost and lowest risk to New Jersey ratepayers."

Access the full press release from NJBPU by clicking on this link
https://www.nj.gov/bpu/newsroom/2024/approved/202404302.html

In addition, the NJBPU made public the full solicitation guidance document. Access the full document by clicking on the link below.

https://bpuoffshorewind.nj.gov/fourth-solicitation/solicitation-documents/Final-Solicitation-Guidance-Document-with-attachments.pdf

RELEASE OF THE FINAL ENVIRONMENT IMPACT STATEMENT FOR ATLANTIC SHORES SOUTH STILL ON TARGET

May 31, 2024 is still the current target date for the publication of the official notice of availability for the final Environmental Impact Statement ("EIS") in the Federal Register for Atlantic Shores South.[8] That date would also be the beginning of the public review period, which extends for a minimum of 30 days.

The Permitting Dashboard, an official website of the U.S. government, is the source for all updates regarding this project and the dates. Note that the target dates mentioned in this section were accurate as of May 10, 2024.

From its website: "Federal agencies, project developers and interested members of the public use this website to track the federal government's environmental review and authorization processes for large or complex infrastructure projects."

Access The Permitting Dashboard by clicking on this link
https://www.permits.performance.gov/permitting-project/atlantic-shores-south

July 1, 2024 is still the target date currently listed for the issuance of the final EIS for Atlantic Shores South, presuming a May 31, 2024 release date.

[8] Atlantic Shores South covers approximately 102,000 acres in the southern portion of the total 183,000+ acres leased to Atlantic Shores Offshore Wind. It has been designated Lease Area OCS-A 0499 by the Bureau of Ocean Energy Management (BOEM).

Access details about the full EIS review process from the website of the U.S. Environmental Protection Agency by clicking on this link
https://www.epa.gov/nepa/national-environmental-policy-act-review-process - :~:text=Summary of the EIS Process&text=A draft EIS is published,if necessary, conduct further analyses.

CAUSE OF DEATH FOR THE HUMPBACK WHALE FOUND IN APRIL IN BRANT BEACH

On April 11, *The Sandpaper* and several other news sources reported that a **dead juvenile humpback whale** had washed up on the beach at 51st Street in Brant Beach on Long Beach Island.

Access the full article in The Sandpaper by clicking on this link
https://www.thesandpaper.net/articles/third-whale-in-seven-months-washes-ashore-on-lbi/

On April 12, numerous sources reported the **results of the necropsy** performed on the deceased whale.

From the April 12 article in Patch: "Initial findings showed evidence of bruising around the head with a hematoma present, multiple fractures of the skull and cervical vertebrae, numerous dislocated ribs, and a dislocated scapula," the [Marine Mammal Stranding Center] said. "These injuries are **consistent with blunt force trauma**."

Access the full Patch article by clicking this link
https://patch.com/new-jersey/barnegat-manahawkin/necropsy-completed-dead-whale-long-beach-island

THE ROUND-UPS

This Offshore Wind Round-Up was prepared by a group of writers and researchers from Long Beach Island, New Jersey. The first Round-Up appeared May 9, 2022 and it has been published every month except two since its debut.

*Round-Ups endeavor to periodically provide a **review of recent research efforts** in which the effects of offshore wind farms have been studied. In addition, they occasionally offer factual, **clarifying information**, in response to readers' questions and suggestions.*

*Research included in Round-Ups points you in the direction of the science and assumes **no point of view** one way or the other about the presence of offshore wind farms off our shore. Likewise, clarifications are provided without editorial comment; they are there for you to consider so you can **draw your own conclusions**.*

***Questions** about the content of Round-Ups and **suggestion**s for future topics can be directed to RoundUpLBI@gmail.com. The Round-Up research and writing team welcomes questions and comments.*

- *Round-Ups are **distributed** to the voting representatives of the eleven member organizations of the Joint Council of Taxpayers Associations of LBI (JCTA). Each taxpayer and property owner association then distributes this information to its members and the community via its regular communication methods, e.g., through newsletters; posted on websites; social media.*