

Oregon Offshore Wind Visual Simulation

In April 2022, BOEM published a Call for Information and Nominations (Call) to assess commercial interest in and obtain public input on potential wind energy leasing activities in federal waters off the coast of Oregon. The Oregon Call Areas are identified as the Coos Bay and Brookings Call Areas. Additional information on the Call Areas is available at: www.boem.gov/Oregon.

In response to input received regarding viewshed impacts from potential offshore wind development within the Call Areas, visual simulations of hypothetical offshore wind projects in the Oregon Draft Wind Energy Areas were prepared.

Visualization Engagement

In Fall 2022, BOEM invited Tribes and Oregon state agencies to assist in identifying key observation points (KOPs). BOEM met with several of these entities to inform on the identification of KOPs for the visualization simulation study. These entities included the Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians, the Coquille Indian Tribe, and several Oregon state agencies, such as the Department of Land Conservation and Development and Oregon State Parks.

In Winter 2023, viewshed experts conducted pre-site visits with members of these entities to finalize the KOP locations.

Key Observation Points (KOPs)

Six KOPs were chosen through collaborative discussions with the Tribal governments and Oregon state agencies.

Coos Bay Call Area

- o Gregory Point (Baldicha)
- o Heceta Head Lighthouse
- o Umpqua Lighthouse area

Brookings Call Area

- o Otter Point
- o Samuel H. Boardman State Scenic Corridor, Cape Ferrello Viewpoint
- o Harris Beach State Park area



Map of Oregon Coastline with BOEM-Oregon Call Areas, Draft Wind Energy Areas, and Key Observation Points

Visualization Simulation Study Results

Viewshed experts developed visual simulations to provide spatially accurate and realistic visual simulations of hypothetical offshore wind projects in the Oregon Call Areas.

Panoramic simulations for each of the six KOPs reflect different times of the day and night. A meteorological report detailing the weather and visibility conditions over a 10-year period was also prepared as part of this effort.



Viewing the Visual Simulations

The simulations are intended to be viewed as large high-resolution printed panoramas. While the images are okay to be viewed flat or online, for full experiential accuracy they are best viewed full sized and properly mounted at an appropriate viewing distance based on the image width. The panoramas cover a field of view 124-degrees horizontally by 55-degrees vertically, which is consistent with the typical human field of view. For example, a 59.25"-wide panorama image would be placed at approximately 19.7 inches from the viewer. Images viewed digitally are representations and the visibility of the turbines projected on a computer screen will depend on the scale at which the image is being viewed. Simply put, zooming in on the image will over-represent visibility and, conversely, zooming out will minimize visibility of the turbines.

For on-screen displays, follow the display instructions at the bottom of each digital photo/PDF and make the scale bar at the bottom of the visualizations to be 4 inches wide and view from a distance of 19.7 inches.

The visual simulations depict a hypothetical offshore wind project and how it might appear within each Draft Wind Energy Area.

How will actual offshore wind facilities differ from these visual simulations?

The visual simulations illustrate hypothetical wind projects using 20MW turbines that are still in the conceptual stage and not commercially available. The simulations are designed to represent a commercially scaled, maximum density, and technically feasible scenario that is consistent with industry trends for operating capacity, wind turbine size, spacing and configuration.

Should an offshore wind energy lease be awarded and a project plan submitted, project-specific visual simulations will be prepared by a lessee and submitted with an actual Construction and Operations Plans (COPs) for comprehensive regulatory and environmental reviews. See [Guidelines for Information Requirements for a Renewable Energy Construction and Operations Plan](#).

Simulation Specs

- The visual simulations model a total of 262 20MW turbines for a total generating capacity of approximately 5,240 MW of renewable energy. Draft WEA A models 74 turbines and Draft WEA B models 188 turbines.
- Each turbine has a hub height of 725 ft, rotor diameter of 935 ft, and maximum height at the blade tip of 1,171 ft.
- Turbines are modeled in a grid pattern, 1 nautical mile apart, with the first row being along the shore-most boundary of the call area and filling in seaward to represent the "most-visible" representation of each wind farm.

Available Online

BOEM and the viewshed experts from a third-party contractor completed the visual simulations of the KOPs in Summer 2023. BOEM has posted the simulations to their website:

www.boem.gov/Oregon.