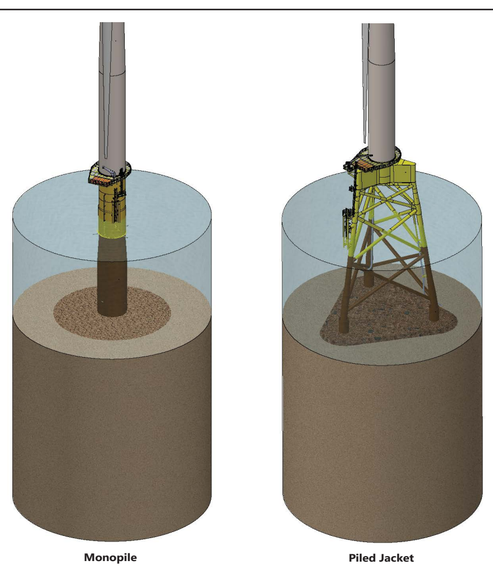
Atlantic Shores Offshore Wind North Project

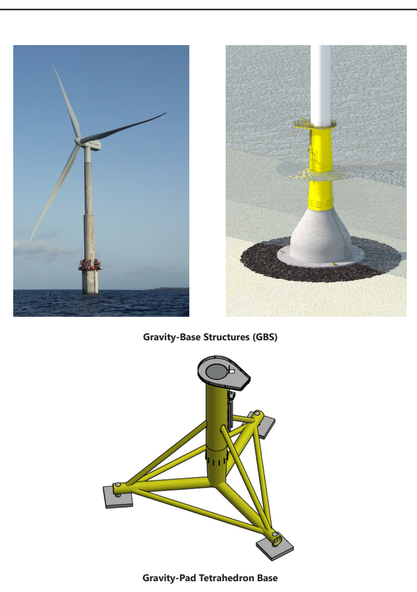
Project Design Envelope

A project design envelope is a permitting approach that allows a lessee to define a range of design parameters within a Construction and Operations Plan. BOEM then analyzes the maximum impacts that could occur within the range of the design parameters — referred to as the "maximum design scenario."

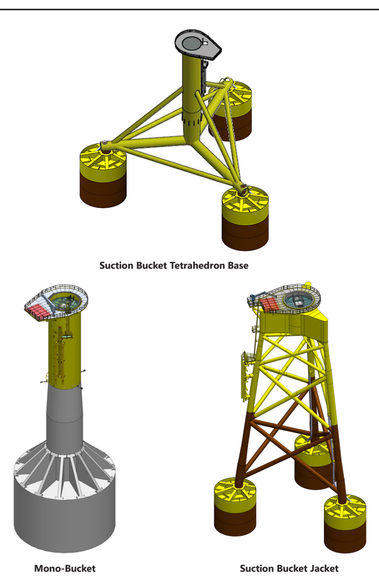
Representative design parameters for the Atlantic Shores North Project are outlined below. Refer to Atlantic Shores Offshore Wind North Construction and Operations Plan for a detailed explanation of the project design envelope.



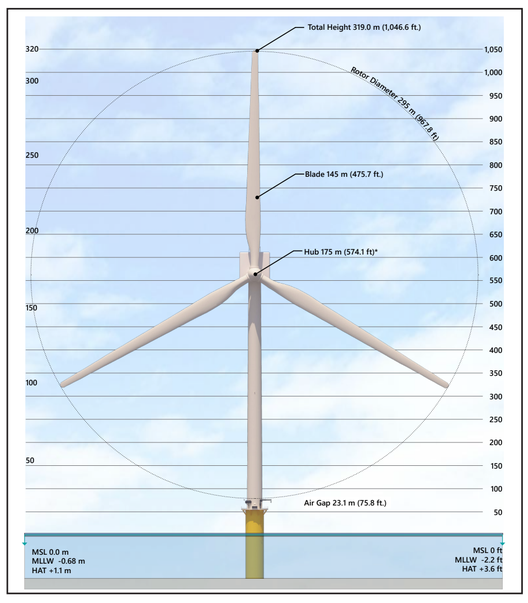
Piled Foundations



Gravity Foundations



Suction Bucket Foundations



Maximum WTG Dimensions

Project Component	Details
Foundations	• Three main foundation types: ° Piled (Monopile or Piled Jacket) ° Suction bucket (Mono-Bucket or Suction Bucket Jacket or Suction Bucket Tetrahedron Base) ° Gravity foundations (Gravity-Based Structures or Gravity-Pad Tetrahedron Base) • Scour protection would be installed around the foundations
Wind Turbine Generators (WTGs)	• Up to 157 WTGs • Rotor diameter up to 967.8 feet (295.0 meters) • Hub height up to 574.2 feet (175.0 meters) above mean sea level (AMSL) • Tip height up to 1,046.6 feet (319.0 meters) AMSL • Lowest blade tip height 75.8 feet (23.1 meters) AMSL
Interarray Cables	• Up to 466 miles (mi) (750 kilometers [km]) of HVAC inter-array cables will connect strings of WTGs to the OSSs • Up to 62.1 mi (100 km) of HVAC inter-link cables may be used to connect OSSs to each other • 66 to 150 kilovolt (kV), 3-core cables buried up to 5 to 6.6 feet (1.5 to 2 meters) beneath the seabed • Cable installation may involve jet trenching, plowing/jet plowing, or mechanical trenching • Proposed protection if target cable burial depth is not achieved includes rock armor, rock bags, concrete mattresses, and protective half-shells
Offshore Export Cables	• Two offshore Export Cable Corridors (ECCs), the Monmouth ECC and the Northern ECC ° Monmouth ECC: length per cable is approximately 66.9 mi (107.6 km) ° Northern ECC: length per cable is approximately 90.4 mi (145.5 km) • Up to eight total HVAC and/or HVDC export cables ° Monmouth ECC: up to five export cables (up to 4 HVAC and 1 HVDC, or up to 4 HVDC) ° Northern ECC: up to five export cables (4 HVAC and 1 HVDC, or 3 HVAC and 2 HVDC, or 4 HVDC) • Approximate width of each ECC ranges from 984 to 3,280 ft (300 to 1,000 m) (including the Asbury Branch) • Cable installation may involve jet trenching, plowing/ jet plowing, or mechanical trenching
Onshore Interconnection Cable Routes	• Up to 12 onshore interconnection cables that are installed within buried concrete duct banks
Meteorological (Met) Towers and Metocean Buoys	• Up to 1 permanent meteorological (met) tower ° Met tower foundation options include all options under consideration for WTG foundations • Up to 2 temporary meteorological and oceanographic (metocean) buoys during construction
Offshore Substations (OSSs)	• Up to 8 small, 4 medium or 3 large offshore substations • Positioned along the same east-northeast/west-southwest rows as WTGs
Operations & Maintenance Facilities	• Existing ports and facilities

For more information, please visit:
https://www.boem.gov/renewable-energy/state-activities/new-jersey/atlantic-shores-north-ocs-0549