Atlantic Shores Offshore Wind South Project

Project Construction

Types of foundations analyzed in the Draft EIS

- **Piled Foundations** are driven into the seabed.
  - **Monopile Foundations** are typically single steel tubes composed of rolled steel plates, which are driven into the seabed.
  - **Piled Jacket Foundations** are steel lattice structures composed of tubular steel that are fixed to the seabed using piles.
- **Suction Bucket Foundations** typically suction onto the seabed and include three variations:
  - **Mono-buckets** consist of a single steel or concrete tubular structure and a hollow steel cylinder suction bucket.
  - **Suction Bucket Jackets** consist of steel lattice structures composed of tubular steel members with suction buckets installed below each leg.
  - **Suction Bucket Tetrahedron Bases*** consist of a tetrahedral-shaped frame that utilizes suction buckets.
- **Gravity Foundations** are stable simply by virtue of their weight and design and require no piles or suction buckets.
  - **Gravity-based structure (GBS)** is a heavy steel-reinforced concrete and/or steel structure that sits on the seabed.
  - **Gravity-pad Tetrahedron Bases*** are similar in structure to the suction bucket tetrahedron bases but are secured in place using high weight pads.

Foundation delivery to the site will be completed through the use of vessels equipped with cranes to lift the components into place.

*These foundation types are not within the Project Design Envelope but are included in the Draft EIS analysis as they have not been determined to be economically or technically infeasible.

Foundation Types within the Project Design Envelope

	Monopile	Piled Jacket	Mono-bucket	Suction Bucket Jacket	Suction Bucket Tetrahedron Base	GBS	Gravity-pad Tetrahedron Base
WTG	Y	Y					
Met Tower	Y	Y	Y	Y		Y	
Small OSS	Y	Y		Y			
Medium/Large OSS		Y		Y		Y	

OSS = offshore substation; WTG = wind turbine generator





Cable Laying Process

- The Project Design Envelope for export cables includes three transmission options, which are based upon the use of high-voltage alternating current (HVAC) and/or high-voltage direct current (HVDC) offshore export cables.
- In all three options of either HVAC, HVDC, or HVAC and HVDC, the maximum total number of export cables to be installed is eight.
- Activities that will be conducted prior to cable installation include sand bedform clearing, relocation of boulders, a pre-lay grapnel run, and a pre-lay survey.
- Three common methods may be used to lay and bury the export cables, interarray cables, and/or interlink cables:
  - **Simultaneous lay and burial:** This approach will provide immediate protection of the cable following installation but is slower than laying cable with other methods depending on the tool employed.
  - **Post-lay burial:** This process involves temporarily laying the cable onto the seabed followed by a subsequent, separate burial operation.
  - **Pre-lay trenching:** This process involves excavating a trench prior to cable installation.
- Three primary cable installation tools proposed are:
  - **Jet trenching:** Water jetting systems can be used for simultaneous lay and burial or post-lay burial in soft soils such as silt or loose/medium sand.
  - **Plowing/Jet plowing:** Typically used for simultaneous lay and burial, a plow's share cuts into the seabed, opening a trench to the required burial depth and holding it open with the side walls of the share.
  - **Mechanical trenching:** This type of tool can be equipped with a jetting sword (using water jets) or excavation chain (with mechanical teeth) that cuts a narrow trench into the seabed.
- Total max area of temporary seafloor disturbance due to export cable installation is 1.10 square miles from the Atlantic City Landfall site to offshore substation and 2.52 square miles from the Monmouth Landfall site to offshore substation.
- Target burial depth range for the export, interarray, and interlink cables is 5 to 6.6 feet.

For more information, please visit:
https://www.boem.gov/renewable-energy/state-activities/atlantic-shores-south