



Mayflower Offshore Wind Project

Project Construction

Installation of Foundations

- Delivery of foundation (monopile, piled jacket, suction-bucket jacket, or gravity-based structure) to the site by vessel.
- *Monopiles*: installed using a hydraulic impact hammer, vibratory hammer, water jetting, or combination of all. Drilling techniques may also be used.
- *Piled Jacket*: support piles are installed using same methods as monopiles. Once the piles are in place, the jacket structure is secured to the piles.
- *Suction-Bucket Jacket*: suction buckets are fitted with pumps and control units and then the jacket structure is lowered onto the seabed. The water and air contained within the bucket is pumped out, creating a suction force. This negative pressure causes the bucket to bury itself securely into the seabed.
- *Gravity-Based Structure*: filled with ballast and sit on top of the sea floor (not pile driven). They have sufficient mass and diameter to provide stability required to resist overturning loads.

Installation of Wind Turbine Generators

- Turbines will be transported to the site, either pre-assembled or in sections.
- If pre-assembled, a heavy-lift vessel will lift the turbine onto the foundation and secure it in place.
- If transported in sections, the tower will be secured first to the foundation, then the nacelle will be placed on top of the tower and secured, then each blade will be attached to the nacelle.
- Once installation is complete, the turbine will be connected to the inter-array cables and follow a process of testing and commissioning prior to becoming operational.

Inter-Array Cable Laying

- The target burial depth is 3.2 feet to 8.2 feet (1 meter to 2.5 meters) beneath the seabed.
- Installation methods include jetting remotely operating vessel (ROV), pre-cut plow, mechanical plow, and mechanical cutting ROV system.
- Cable protection options under consideration include rock berm, concrete mattress placement, rock placement, fronded mattresses, and half shells.



Jack-up Vessel Installing a Wind Turbine Generator (Source: DNV 2021)



Heavy Lift Vessel Installing an Offshore Substation Platform (Source: DNV 2019)



Cable Laying Vessel (Source: Jan De Nul 2020)

