

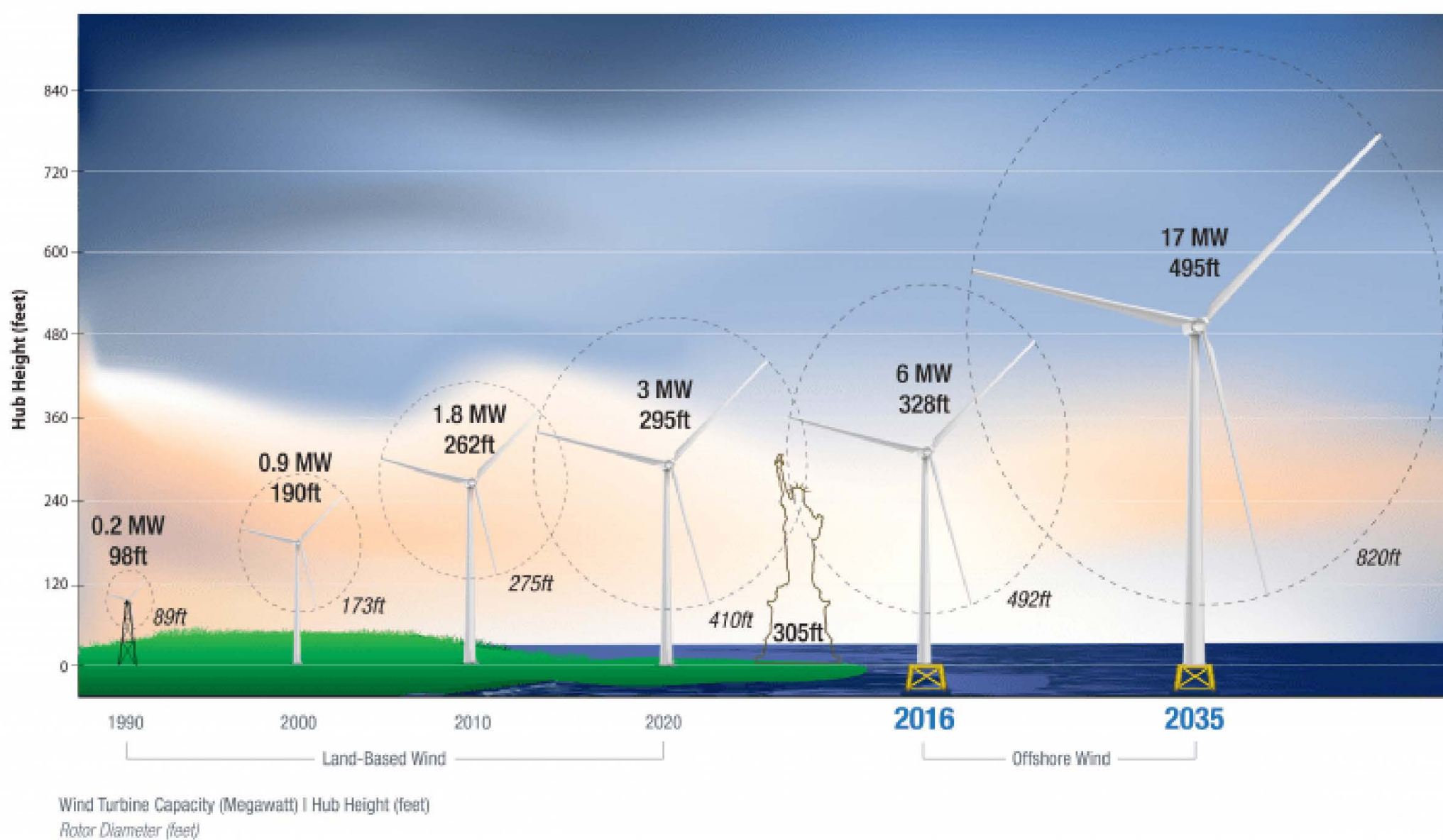
# Economic Technological Impacts of Offshore Wind

## What Are the Technological Considerations of Offshore Wind?

- Monopiles are the most common fixed bottom foundation type and are expected to be used for all <60 m Central Atlantic developments.
- The cost of offshore wind electricity increases the further a wind farm is from shore. This is primarily driven by the increased foundation cost in deeper water depths, transmission cable costs/losses and greater distance to ports.
- Future wind turbine sizes and associated energy output per unit, is expected to increase.

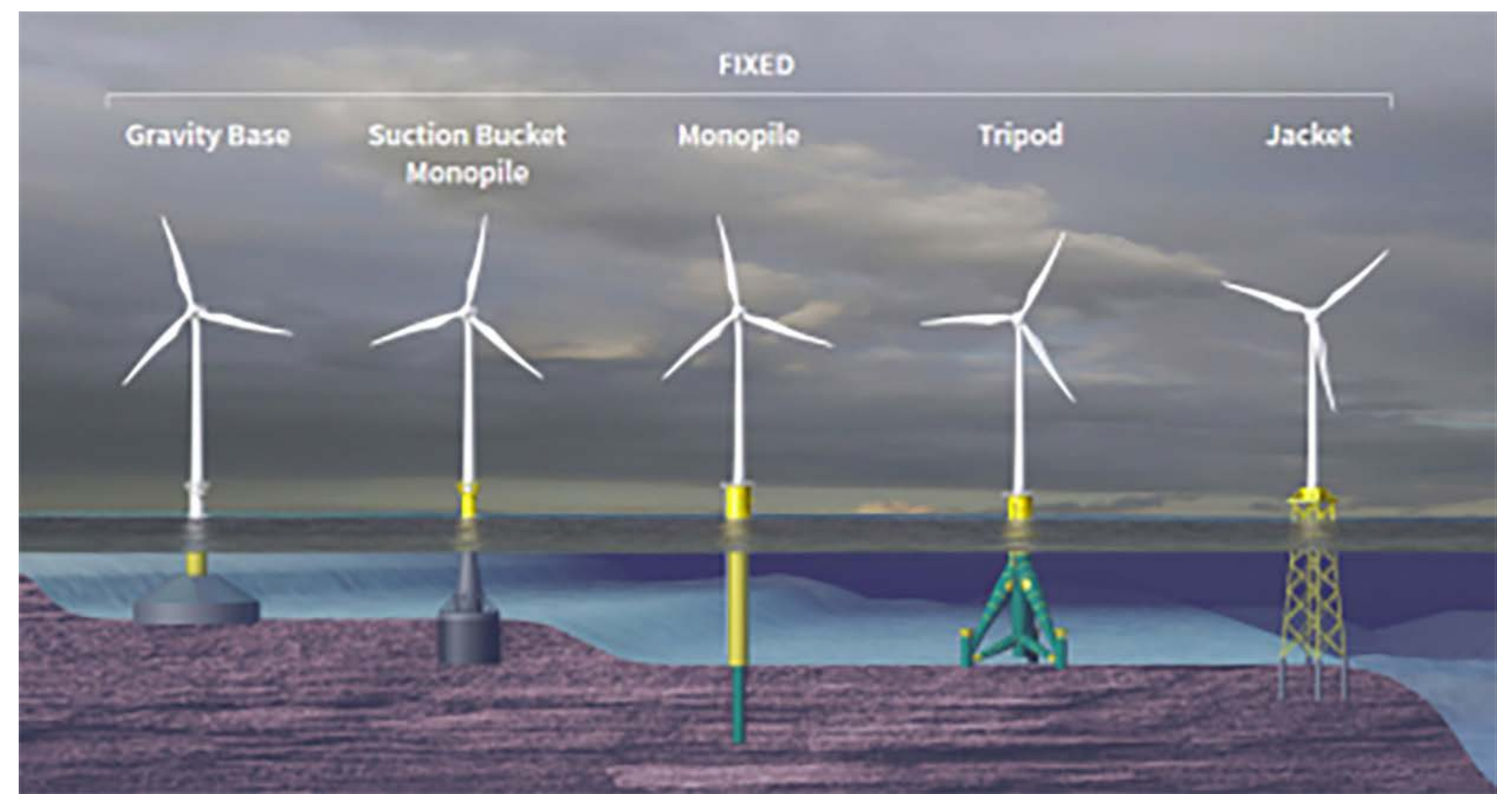


### HUB HEIGHT COMPARISON



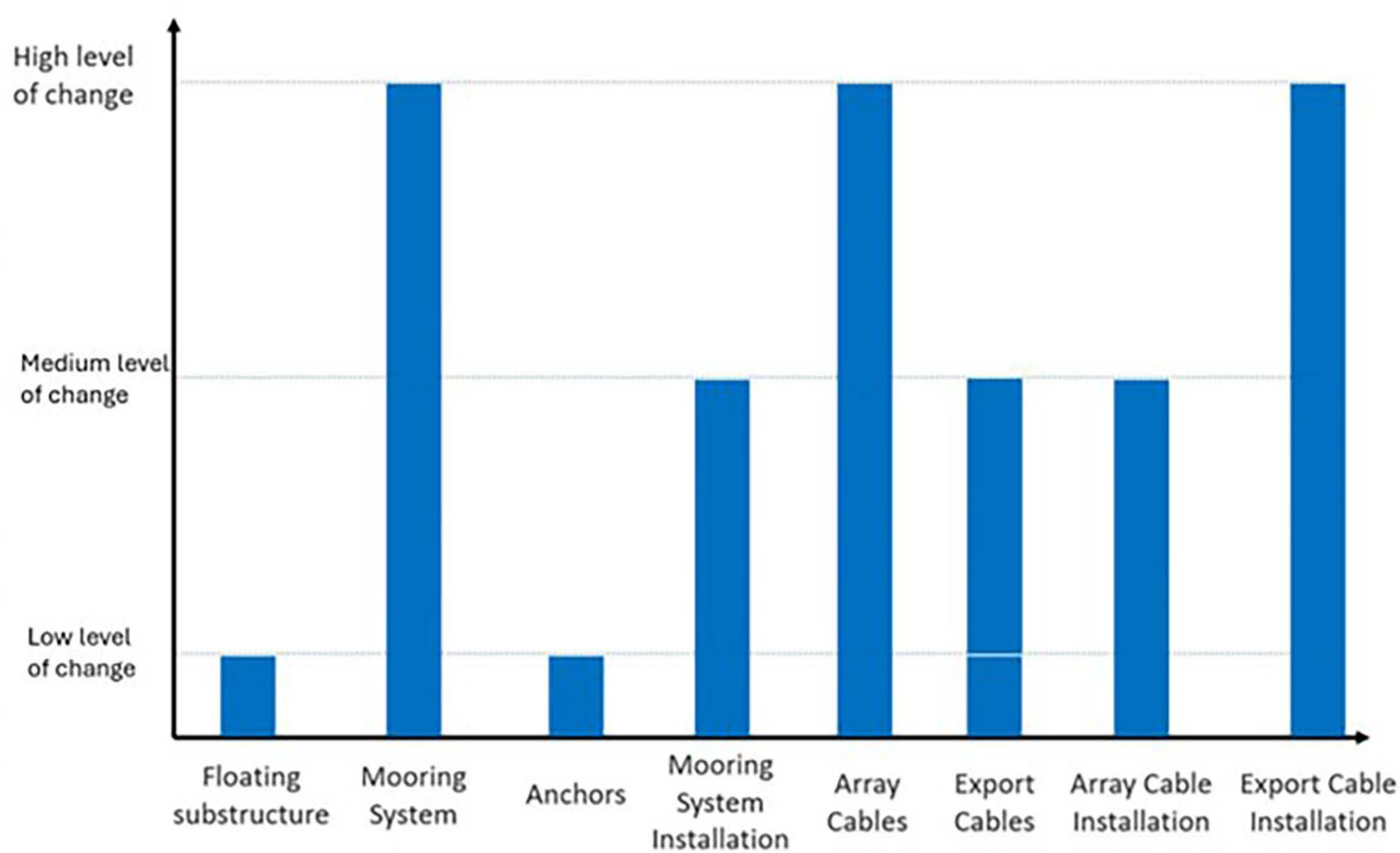
Department of Energy: Office of Energy Efficiency & Renewable Energy - *Wind Turbines Bigger Better*

### FIXED BOTTOM STRUCTURE TYPES



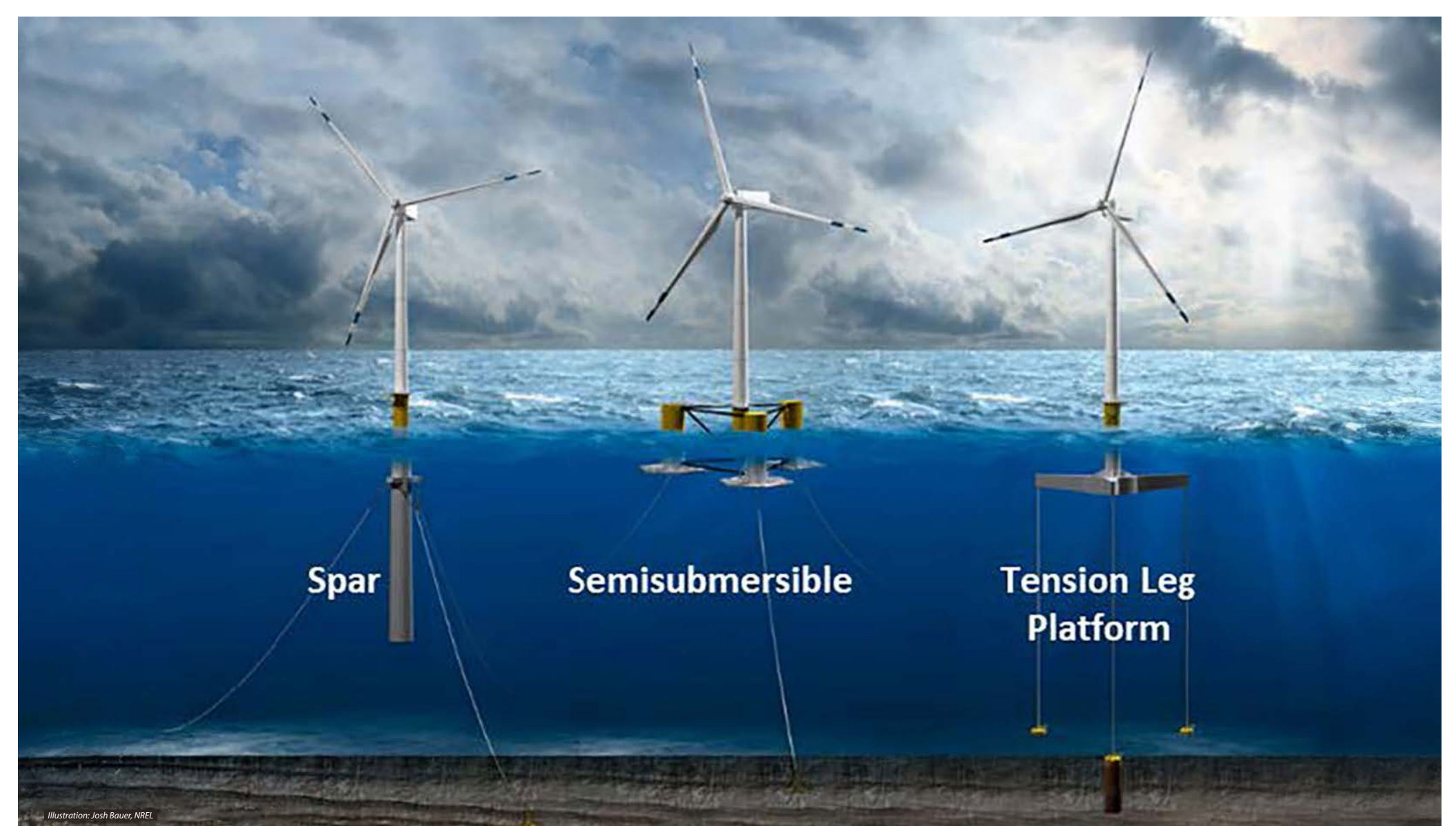
Tethys: Fixed Offshore Wind - *Capturing Energy from Offshore Wind with Bottom-Mounted Foundations*

### FLOATING OFFSHORE WIND CHANGE ASSESSMENT



NREL - *Challenges and Opportunities for Floating Offshore Wind Energy in Ultradeep Waters of the Central Atlantic*

### FLOATING SUB STRUCTURE TYPES



NREL - *Challenges and Opportunities for Floating Offshore Wind Energy in Ultradeep Waters of the Central Atlantic*

### FLOATING WIND CHALLENGES

- Floating foundations require anchors, mooring lines, dynamic cables.
- Floating offshore wind requires deeper ports and different installation vessels.
- Currently, floating offshore wind costs are nearly double fixed bottom.
- The floating offshore cost difference is expected to narrow to about 50 percent by 2035.

