

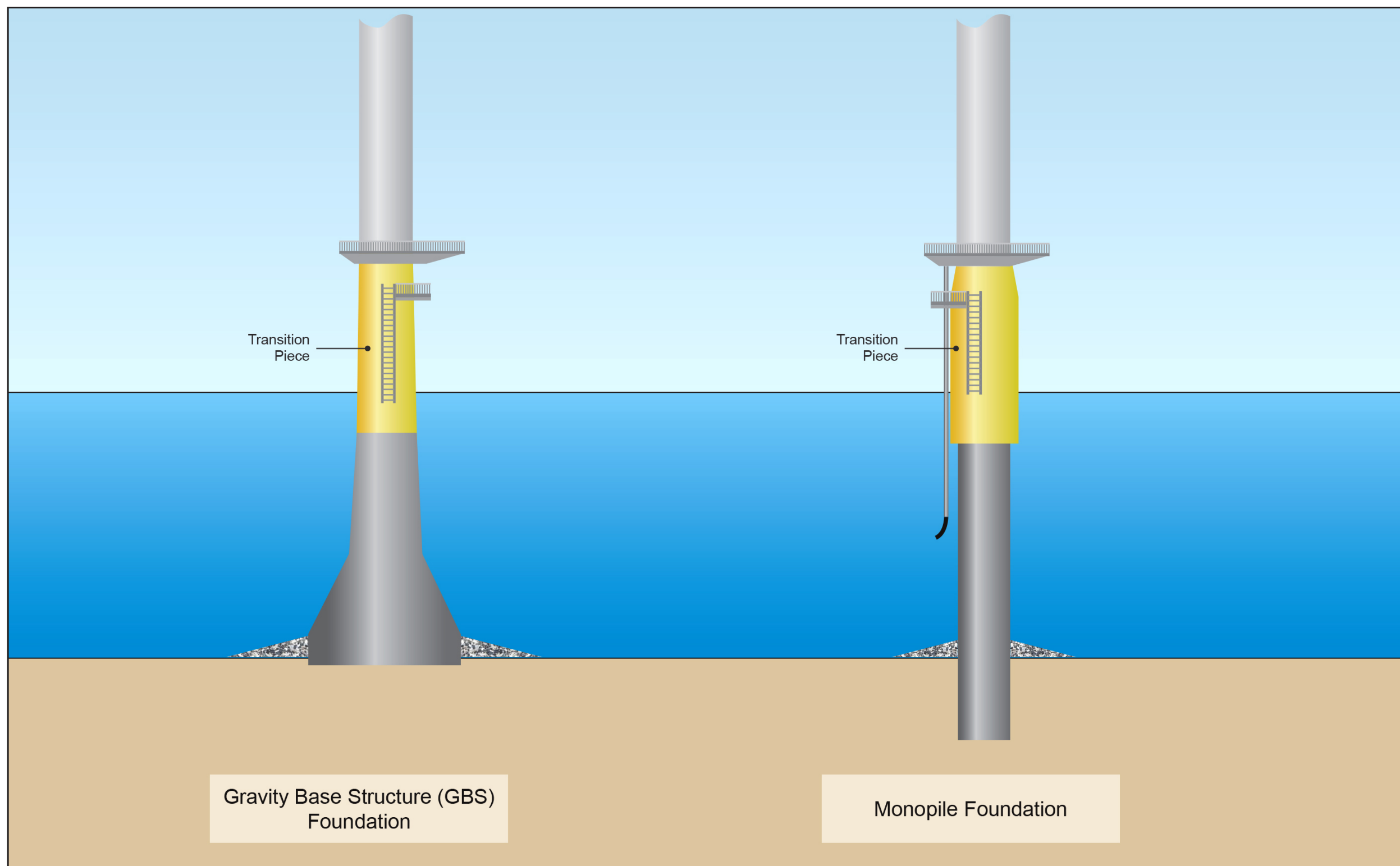


**Empire Wind Offshore Wind Project**

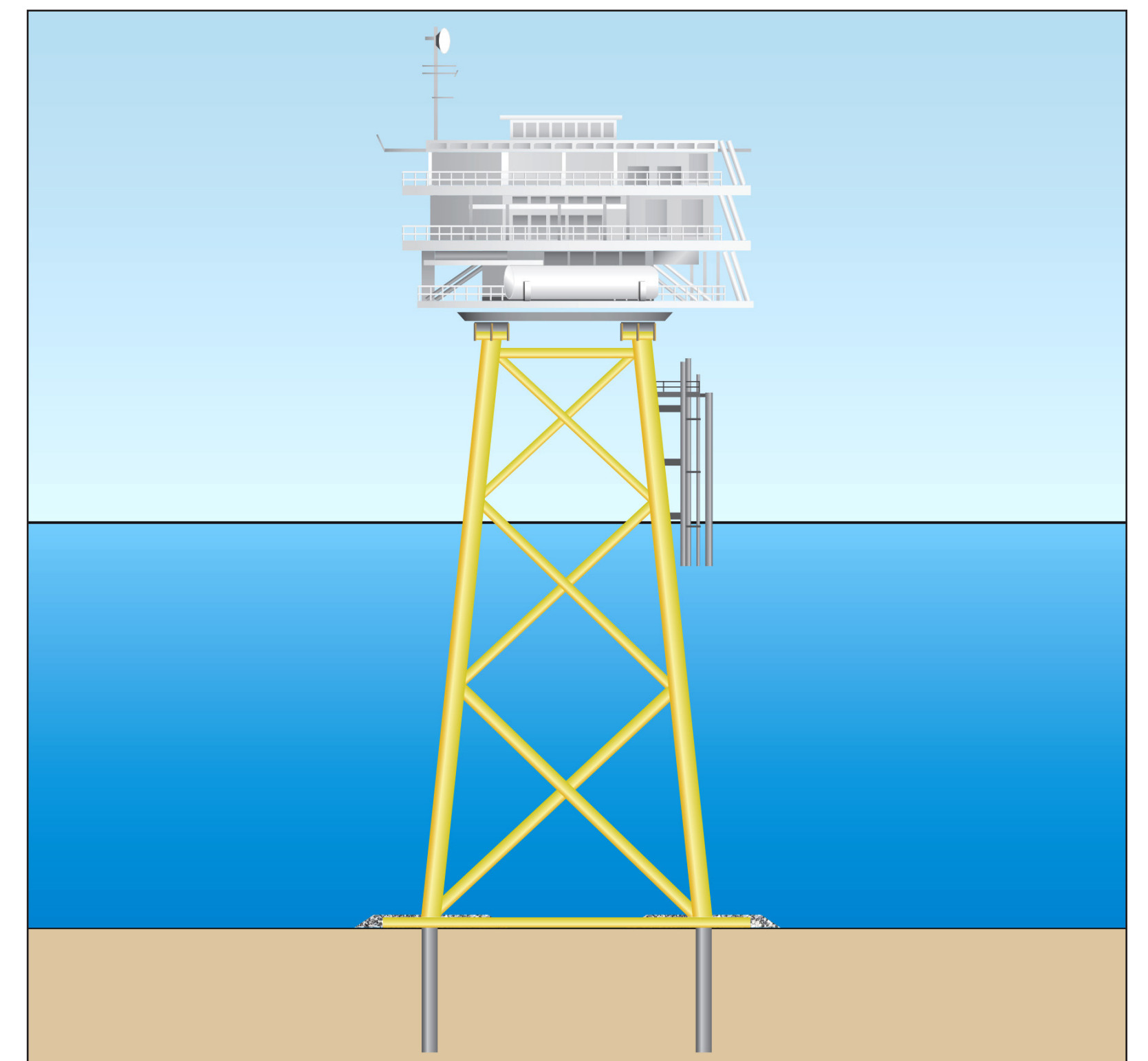
# Project Design Envelope

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 Empire Wind project are outlined below. Refer to Empire Wind’s Construction and Operations Plan for a detailed explanation of the project design envelope.



**Wind Turbine Foundation Types**



**Offshore Substation on Piled Jacket Foundation**

Parameter	Empire Wind 1	Empire Wind 2	Total
Type of foundations (wind turbines)	GBS, monopile	GBS, monopile	GBS, monopile
Type of foundations (offshore substations)	Piled jacket	Piled jacket	Piled jacket
Number of foundations	72	104	176
Number of offshore substations	1	1	2
Number of wind turbines	71	103	174
Rotor diameter	853 ft (260 m)	853 ft (260 m)	853 ft (260 m)
Hub height	525 ft (160 m)	525 ft (160 m)	525 ft (160 m)
Upper blade tip height	951 ft (290 m)	951 ft (290 m)	951 ft (290 m)
Voltage of interarray cables	66 kilovolts	66 kilovolts	66 kilovolts
Total length of interarray cables	116 nm (214 km)	144 nm (267 km)	260 nm (481 km)
Voltage of submarine export cables	230 kilovolts	230 kilovolts	230 kilovolts
Total length of submarine export cables	40 nm (74 km)	26 nm (48 km)	66 nm (122 km)

ft = feet; GBS = gravity base structure; km = kilometer; m = meters; nm = nautical mile