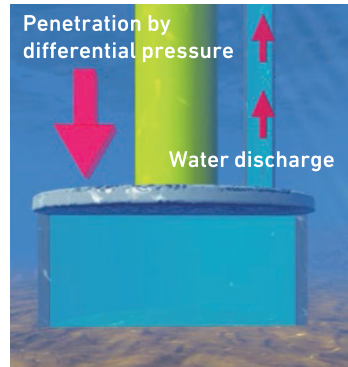


Suction Bucket Foundation

サクシヨンバケット基礎工法

Toward reducing costs of offshore wind

The suction bucket foundation is a construction method that has a proven track record overseas for offshore wind, and is being used at commercial offshore wind farms. In addition to the expected cost reduction by not using large construction equipment, the environmental impact of noise and vibration can be significantly reduced because the bucket penetrates by pumping water out. By pouring water into the bucket, the foundation can be easily removed.



Expanding applicable areas for fixed-bottom offshore wind

Monopile, jacket, and gravity-based foundations have been adopted for fixed-bottom offshore wind farms, each of which has its advantages and disadvantages as shown below. If suction bucket foundations can be applied, the sea area where offshore wind farms can be installed will be expanded due to the shorter penetration length required compared to monopiles and jackets. The use of large hydraulic hammers and other equipment is not needed, which significantly reduces noise and vibration.

Typical Foundation Structures	Suction Bucket	Monopile	Jacket	Gravity-based
Track record	A few overseas	Most	Many	Few
Coping with bedrock	Thin sedimentary layer	Auxiliary method required	Auxiliary method required	Yes
Cost	Aiming to be lowest	Low	Somewhat high	Very high
Noise vibration	Minimal	Countermeasures may be required		Small
Removability	Yes	Part of structure remains, Removal method development required		Yes, but expensive

Timeline for adoption of suction foundation

