Floating Offshore Wind Verification Test of TLP Foundation

TLP係留基礎杭の引抜実験

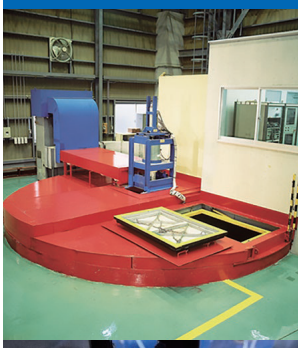
Field demonstration experiment
(Verification of foundation stability against pull-out force)

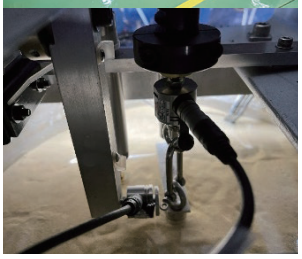
TLP (Tension Leg Platform) floaters are pulled downward and moored to the seabed. Conventional foundations support the structural weight from above, but TLP foundations are constantly subjected to upward (opposite direction) pull-out forces. To verify the stability of these special foundation structures, we conducted a centrifugal model experiment and then conducted a field experiment.

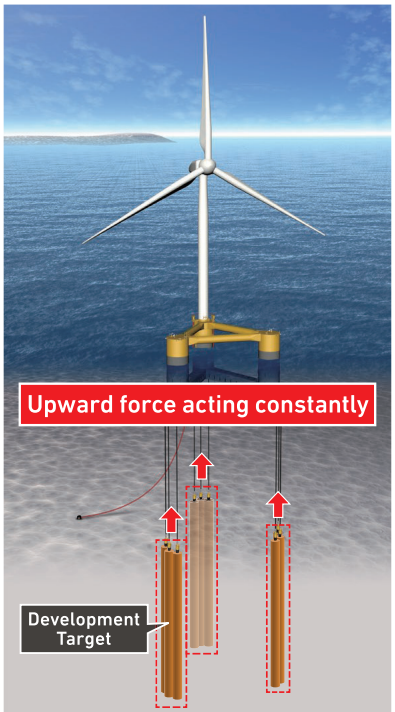
First domestic pile pull-out experiment using cyclic loading

The field experiment verified the stability of the foundation against "cyclic loading" which simulates the pulling force exerted on the foundation by waves. This is the first offshore experiment in Japan to verify stability against repeated loads. Utilizing the knowledge gained through these experiments, we aim to establish a foundation structure design method for TLP-type floating offshore wind power generation facilities that exhibits excellent social acceptance.

Centrifugal model experiment







Schematic diagram of TLP method
(Courtesy of MODEC, Inc.)

Into actual sea area

Field experiment status
(Implemented at Ishikari Bay, Hokkaido)

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NEDO 国立研究開発法人 新エネルギー・産業技術総合開発機構

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