

Skybox phase 3

Publieke samenvatting / Public summary

Aanleiding

TP-less monopiles usually have brackets and braces welded to them for supporting the offshore installation and attachment of secondary steel components such as platforms and boatlandings. However, the monopile production output rate suffers from having to weld these brackets and braces on the monopiles. To solve this issue, the Sif Skybox was developed. To also benefit from the potentially reduced offshore installation time for the Skybox, a “one-lift philosophy” with a proprietary associated installation tool was developed and initially tested on a 4m scaled version of the Skybox. To demonstrate that this also works on a real size platform, this new project has been set up. Additionally, in previous phases of the Skybox development, material tests have been performed on the filler material between the monopile and the Skybox platform. Results from these test indicate the need for extended aging tests where the filler material will be subjected to representative offshore environmental conditions such as humidity and temperature changes, whilst being loaded with typical Skybox loads.

Doelstelling

The goal of this project is to demonstrate the feasibility and workability of the lifting and installation tool according to the “one lift philosophy” for the Sif Skybox platform, in real one-to-one 8m size, including all lessons learned from the 4m demonstrator and the effects from upscaling a scaled 4m version to a full size 8m version, representative for real commercial projects. For the 8m Skybox platform itself, fabrication optimisations

Projectinformatie / Project information

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Subsidiebedrag / Grant amount

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Algemene informatie / General information

Penvoerder / Secretariat

Delft Offshore Turbine B.V.

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will be investigated to ensure optimal performance & cost efficiency. For the extended material aging tests, the goal is to demonstrate that the selected filler material that sits between monopile and Skybox is suited for the offshore environment and for the Skybox loading.

Korte omschrijving

Within the project, a real size Skybox platform and Skybox installation tool will be designed, fabricated and tested. Tests will take place initially onshore to demonstrate that the system works, followed by an offshore test is performed to also account for offshore installation vessel motions that might influence the installation speed and workability. For the material tests, samples of the filler material will be placed in an aging chamber, subjected to offshore conditions and then tested at regular intervals, for a total period of one year.

Resultaat

The result of the project will be either the confirmation that the Skybox 8m installation methodology and tooling delivers the anticipated savings in time, or it will identify points of improvement of this methodology and tooling. For the design and fabrication of the Skybox platform, the project will deliver a design that is optimally suited for fabrication and thereby reduction in cost. For the material tests, the project will result in confirmation that the filler material is suited for the offshore application during the lifetime of an Offshore Wind Farm.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.

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