TU Delft

Faculty of Civil Engineering and Geosciences

Offshore Engineering

Gentle Driving of Piles

The Gentle Driving of Piles project aims to help offshore wind contractors in making the pile installation process as efficient as possible through testing a novel pile installation method. This method is based on simultaneous application of low- and high-frequency vibrators exciting two different modes of motion of the monopiles.

In the experimental campaign that is executed at the 2e Maasvlakte from October-December 2019, the newly developed GDP shaker is tested and compared to traditional vibratory and impact hammers. Eight piles are driven into the soil and with extensive ground sensors and sensors embedded in the pile. The project aims to collect the data that is used to demonstrate that the new method has the advantages to reduce the driving loads and the emitted (underwater) installation noise without compromising the pile penetration speed and the soil bearing capacity.

Next to the experimental work, three new numerical models are developed that will provide the required tools to be able to predict the drivability of offshore monopiles, the state of the soil during and after driving the piles and the noise generated during gentle driving of piles.

With the success of the project we aim to be involved in the next step of the development of the GDP shaker in an offshore full-scale test.

GDP Consortium Partners

grow, Boskalis, CAPE HOLLAND, Deltares, DOT, ECN | TNO innovation for life, Eneco, IHC, innogy, seaway 7, Shell, Sif, TU Delft, Van Oord Marine ingenuity

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