

CONSTRUCTION PHASE WIND TURBINES ON BEACH MAASVLAKTE 2

MORPHOLOGICAL IMPACT CONSTRUCTION PLATFORMS ON MV2

In an earlier project commissioned by Rijkswaterstaat, Svašek Hydraulics had conducted extensive research into the effects of wind turbines on the soft sea defence of Maasvlakte 2. After a successful tender by Eneo further investigations by Svašek Hydraulics included multiple designs and configurations of the turbines. In the study presented here the construction phase of the final design is included. A construction platform is situated at each wind turbine for construction purposes. Svašek Hydraulics has determined effects of the designed construction platforms on the safety of the sea defence.

Twelve wind turbines are constructed in 2022 on the soft sea defence of Maasvlakte 2 (and ten on the hard sea wall). The entire Ministry of Infrastructure and Water Management will be energy neutral in 2023 with the generated electricity of the wind turbines. For construction of the turbines a construction platform is situated at each turbine location.

Morphological effects of these construction platforms on the sea defence are modelled using the numerical model XBeach. This model is developed for storm simulations aimed at dune erosion and is suited for simulating sediment transport in both longshore and cross-shore directions.

Multiple time series of more than 30 years are available along the boundary

of the model. The time series are derived by a transformation table from the nearby Europlatform measuring station. Extreme wave conditions and water levels are determined with these time series, based on a peak over threshold analyses and Weibull-fitting, to the lower exceedance frequency.

The extreme boundary conditions are applied on the XBeach model. Morphological results indicate the effect of extensive temporary beach construction works on the safety of the sea defence. This information is used for planning and authorisation of the project.

CLIENT

Royal HaskoningDHV on behalf of Eneo

LOCATION

Maasvlakte 2

DATE

2021

SERVICES

Morphological impact on sea defence safety

Construction platforms



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