

WIND TURBINES ON MAASVLAKTE 2 BEACH

Determining morphological effects to facilitate the Dutch public tender

In 2019 Directorate-General for Public Works and Water Management (Rijkswaterstaat) has started a tendering procedure for the construction and exploitation of wind turbines on the Maasvlakte 2. Svašek Hydraulics has facilitated this process where it relates to the effects of turbines on safety and long-term maintenance of the Maasvlakte sandy sea defence, a great concern of Rijkswaterstaat. The study has entailed, among other things, a literature review, organising an expert meeting and innovative long term 2D XBeach simulations.

The tender support can be divided into three different phases:

1. Exploratory study

Based on literature review, case studies (e.g. effects of piers and WWII pill boxes on beaches) and explorative XBeach simulations, a preliminary study has been conducted into the effects of turbines on the beach.

2. Expert meeting

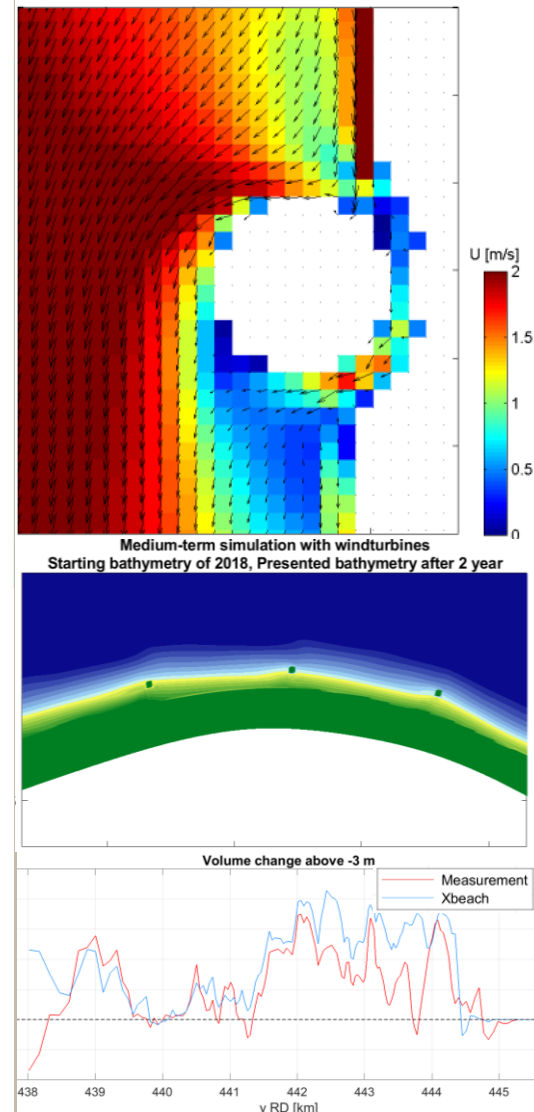
Svašek has organised an expert meeting with big-name experts both in Rijkswaterstaat and in the broader field of coastal morphology. The goal of the meeting was to produce a shared vision on the effects of turbines and exploration of the possibilities of mitigating those effects and thus

guarantee the safety of the sea defence. The meeting was successful and has resulted in a practical plan for a quantitative effect study.

3. Quantitative effect study

A comprehensive analysis has been conducted of (the effects of turbines on) wind driven (aeolian) sand transport and predictions regarding dune and beach erosion during normative conditions and the longer-term development of the sandy sea defence as whole. This has resulted in broadly supported recommendation regarding the safeguarding of that defence. Calibrated 2 year 2D XBeach simulations have been an innovative and crucial element in the study.

COMMISSIONED BY
Rijkswaterstaat
LOCATION
Maasvlakte 2, the Netherlands
DATE
2018-2020
SERVICES
Explorative study of morphological impact
Organising expert meeting
Detailed medium long-term 2D XBeach simulations.



SVASEK
HYDRAULICS
COASTAL, HARBOUR AND RIVER CONSULTANTS

Svašek Hydraulics
Kratonkade 23
3024 ES Rotterdam
The Netherlands

Telephone +31 10 467 13 61
Internet www.svasek.com
E-mail info@svasek.com