

Offshore Wind Energy in the Netherlands – Press Release

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Innovative wind turbines: longer service life, reduced costs and... oyster beds!

Wind turbines that promote the growth of oyster beds and improve the ecosystem of the North Sea. An innovative mounting system between the tower and the foundation that enables wind turbines to last longer and require less maintenance. An improved coating that protects the turbines more effectively while enhancing their cost-efficiency. These innovations will be tested by Two Towers B.V. at the Borssele V Innovation Site in the North Sea. The consortium won the tender for this innovation site, which was open to submissions from 2 through 18 January 2018.

Borssele V Innovation Site, a testing ground between the previously awarded Borssele Sites I and III, offers the potential to conduct practical tests of new technologies already far along in development and to demonstrate their value to wind farm developers worldwide. This process will contribute to reducing the cost price of offshore wind energy, building knowledge and enhancing the competitive position of the Netherlands.

Oyster beds

Because no activities are present which disturb the seabed, such as trawl fishing, new ecosystems are able to develop near wind turbines. In order to stimulate this natural process, oyster beds are being planted at the innovation site. The oyster beds will prevent erosion of the sea floor around the wind turbines' foundations and aid in the recovery of the marine ecosystem in the North Sea. Rocks of various types and dimensions will be placed on the seabed to limit the flow of water over it and the disturbance of its sediment, creating an ideal habitat for oysters. The rocks are enriched with calciferous shell material, which provides a good substrate for the oysters. When the bed is planted, oysters in various stages of their life cycle will be added. They will then reproduce and spread throughout the North Sea. Good news for the oysters (if not for gourmands): these oyster beds will not be harvested. Instead, they will remain on the reef to allow further replenishment of the seabed and development of the ecosystem.

Innovative clamp connection and coating: longer service life, higher return

An innovative clamp connection between the tower and the foundation makes it easier and cheaper to build wind turbines. The aluminium-based protective layer increases the life expectancy of the tower and requires less maintenance as well. In addition, an innovative coating system is applied to combat corrosion in an efficient, safe and environmentally friendly manner. Both the lifespan and the return on investment are improved as a result.

Two Towers

Although the tender procedure was coordinated with the sector in advance, the only bid received was that of Two Towers. The challenging nature of such innovation sites and the strict requirements for being granted a subsidy may have played a role in this matter. Nevertheless, Two Towers managed to submit an excellent tender. Two Towers is a consortium comprised of Van Oord Renewable Finance B.V., Investri Offshore B.V. and Green Giraffe Holding B.V. The consortium will receive an innovation subsidy of up to 15 million euros for the purpose of testing the innovations. It will receive an additional subsidy of 35 million euros in exchange for the electricity supplied. From 2021 onwards, the wind farm is expected to generate enough renewable power for some 25,500 households.