

Abstracts

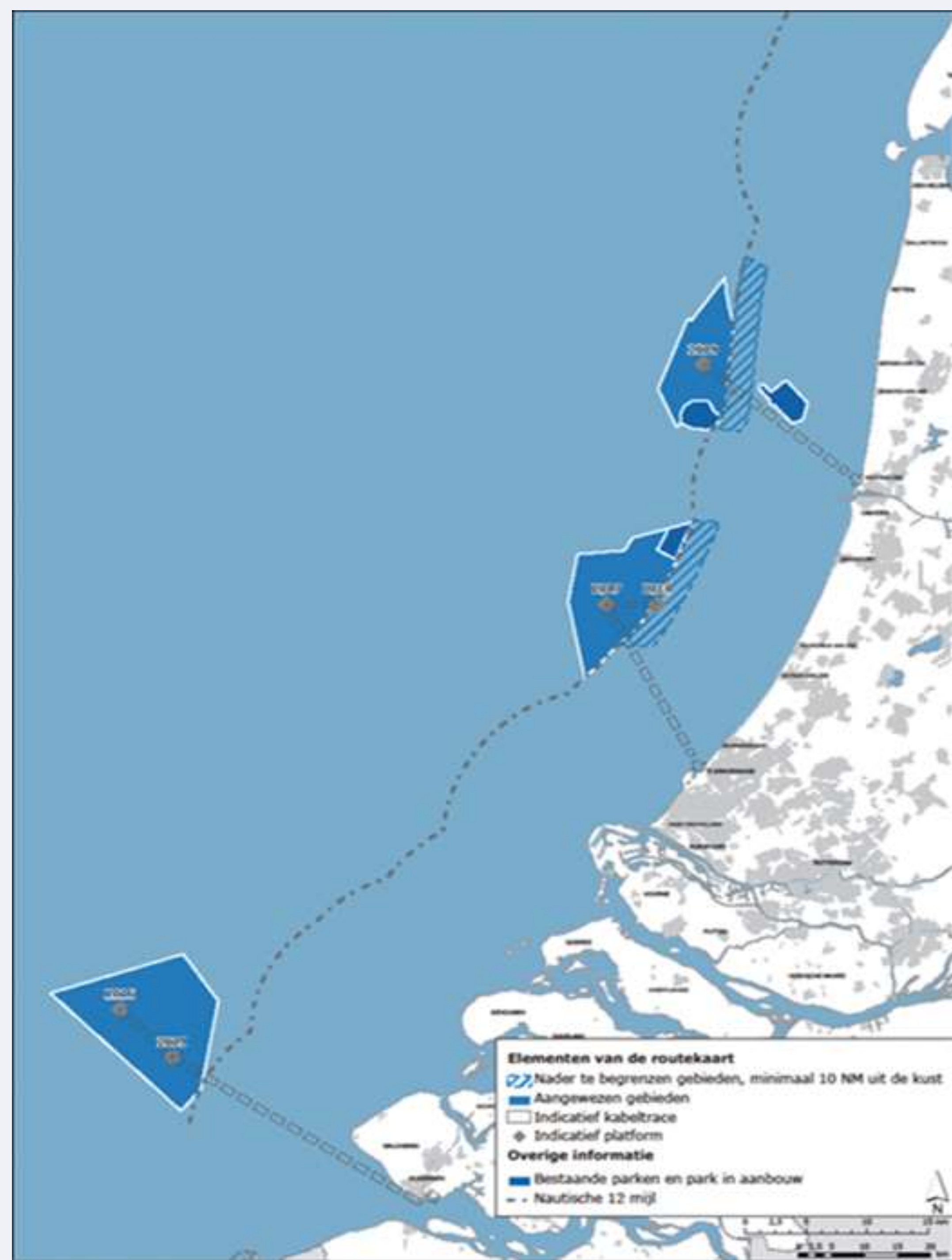
Within the Dutch Energy Agreement 4450 MW of wind power will be installed by 2023. By means of phased procurement procedures a total of 3450 MW will be contracted which will start in 2015. This under the assumption that in the 10 years ahead the cost of offshore wind will be cut by some 40%.

The Dutch Government ensures that there will be a robust legal framework that makes it possible to scale up offshore wind power. For future (economic) developments it is important to know the wind and oceanographic conditions at the North Sea.

Within this framework a network of different meteorological stations will be operated by ECN.

Objectives

The objective of this project is to establish a network of meteorological stations where data can be accessed from a broad range of users. From developers of offshore wind farms, research institutes to the general public. Accessing data is of great importance for the Dutch government and for this the website www.WindOpZee.net was established.



Year	Energy Agreement	New Roadmap	Area
2015	450 MW	700 MW	Borssele
2016	600 MW	700 MW	Borssele
2017	700 MW	700 MW	S-H C
2018	800 MW	700 MW	S-H C
2019	900 MW	700 MW	N-H C

This network comprises besides a meteorological mast also of floating LiDAR systems and LiDAR systems installed at different fixed platforms.

Current facilities

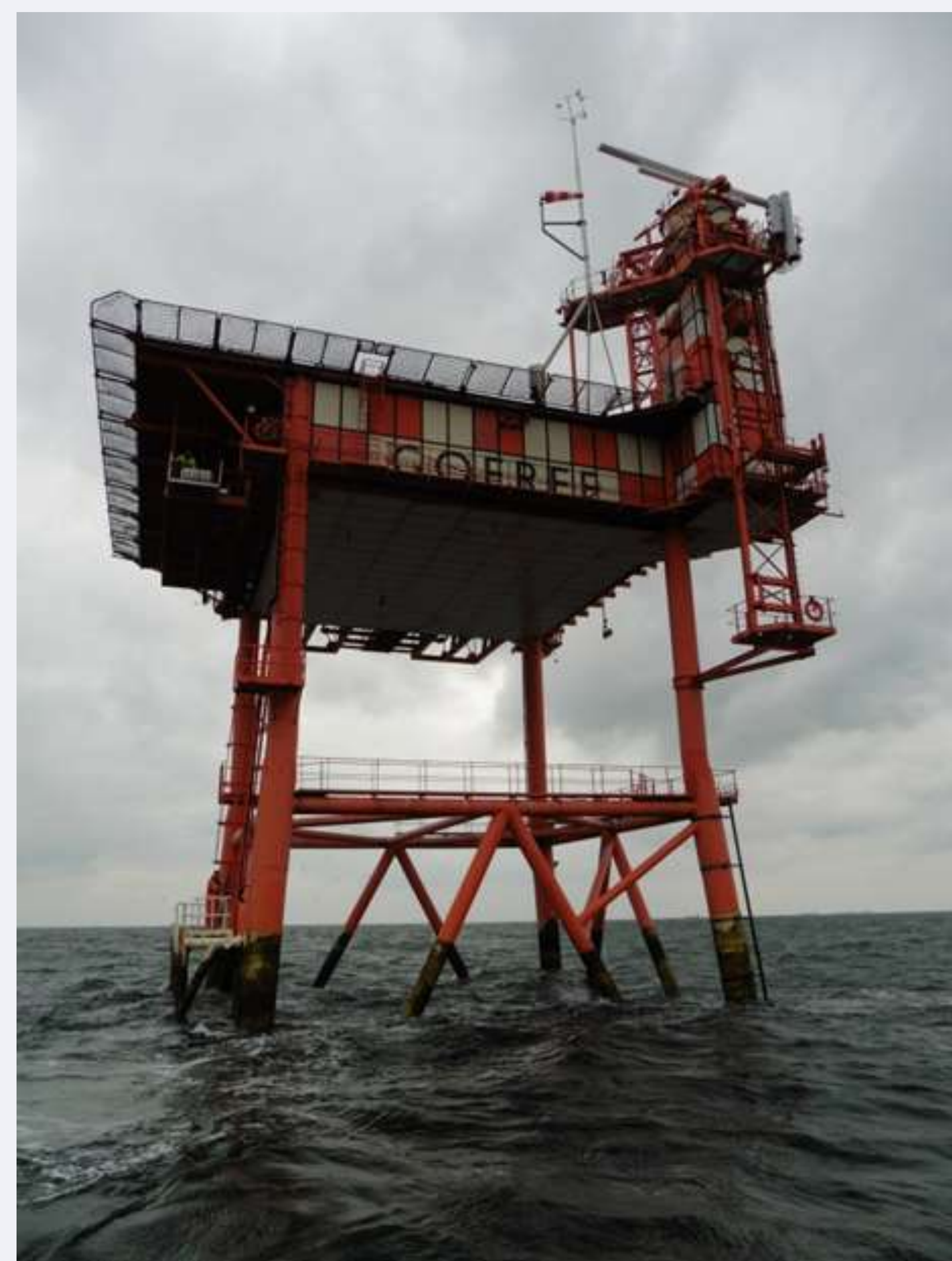


The current facilities comprises of a meteorological mast which is located approx. 75 km out of the coast of the Netherlands. The mast of 92m (AMSL) is owned by RWE and operated by ECN. At three heights (26, 58 and 84m) booms are placed for performing standard meteorological measurements. Besides these measurements also met.ocean data is collected with a buoy and a fixed LiDAR is placed on the platform. Furthermore on Lichteiland Goeree (a fixed platform) data is collected with a fixed LiDAR)



Current developments

A study performed by DNV GL revealed that extending the infrastructure with additional measurements with a fixed LiDAR on Europlatform (EPL) and floating LiDAR(s) in the Borssele Wind Farm Zone (BWFZ) can lead to a more detailed insight in the wind conditions in the designated areas and therefore could lead to a reduction in costs. This year (2015) two floating LiDAR systems were deployed in the first to be developed area (BWFZ) . The data collected by the floating LiDAR systems will also be made available via the website www.WindOpZee.net. Furthermore it is the intention to install a fixed LiDAR at Europlatform (EPL) in 2016.



Conclusions

During the last years ECN operated the meteorological mast Ijmuiden. During this period valuable data was gathered which is used within different wind resource assessment studies. Furthermore the Meteorological Mast (which is IEC 61400 compliant) showed to be of great importance for the validation of floating LiDAR systems. Besides these kind of studies the collected data also shows to be of great importance for (future) wind atlases. Unfortunately it looks that one of the most important sources of meteorological information in the Dutch part of the North Sea will close operation by the end of 2015. This could lead to the situation that no operational meteorological masts will be fully operational in the Dutch part of the North Sea. From an energy assessment point of view this could be defended but it could hamper other research.

More information

www.WindOpZee.net

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