
Subject R&D innovation theme 4.5. from the Innovation Contract (page 29).
 Date 19 March 2013

4.5 Operations and Maintenance

4.5.1 The importance

About a quarter of the costs of offshore wind energy are related to the operations and maintenance of wind farms. Operations and maintenance is still in its infancy. This forms an important starting point in the reduction of costs. Many large and small Dutch SMEs are active in this field, or wish to be. Dutch knowledge institutes are also active in this field and have a good knowledge position. The availability of wind turbines can be increased further by effective maintenance, which leads directly to an increased production and a lower cost of energy. Design for maintenance (redundancy, reliability), but also control strategies that allow for partial operation of the turbine, increase farm production.

4.5.2 The R&D activities

1. Developing O&M and access methodology into a concept and testing it at existing farms and in the testing area, designing new, more stable O&M ships and hotel ships for accommodation.
2. Measuring, monitoring and predicting wear of the components in order to perform planned maintenance, and avoiding unplanned maintenance as much as possible.
3. Improving component reliability and adding spare parts which can be switched on at a distance.
4. Organizing O&M bases in Dutch harbours in agreement with line 1: research into artificial work islands at sea, clustering of maintenance base, as is already occurring in Esbjerg.

4.5.3 The parties involved

Companies	Knowledge institutes
2-B Energy, AMC T&T, AMC-RF, Ampelmann, Atos, Ballast Nedam, BLIX, BMO Offshore, BOC MetOcean, Chevalier Floatels, Connecting In Wind, CPNL Engineering, CWC, DC Offshore, De Vries & Van de Wiel, DHV, Ecofys, Eneco, Essent, Geo Plus, GL Garrad Hassan, Hertel, HVC, IHC Merwede, IMARES (Wageningen), Jack-up Barge, Lagerwey, Marin, MECAL, NLR, NNOW, Peterson SBS, Profin, RRME, SeaZip Offshore BV, Siemens, Van Oord, We@Sea, Wind Power Center	ATO, Deltares, ECN, KEMA, LOC Noorderpoort, MCN, NHL University, University of Groningen, TU Delft