

Overview

Wind energy use is in the early stages of large-scale offshore application. Due to the fact of higher and more consistent wind speeds at sea it is commonly suggested to play an important role in future electricity supply. However, the prospect of higher energy yields contrasts higher costs for installation as well as for operation and maintenance (O&M). To date there are no reliable information about long term energy yield, reliability and costs available.

In order to optimize availability and thereby profitability of offshore wind farms from the very beginning and to guarantee security of supply, the German offshore wind sector is supported by the "Offshore~Scientific Monitoring and Evaluation Program" (Offshore~WMEP), which is part of the research initiative 'Research at alpha ventus' (RAVE) and funded by the German Federal Environment Ministry (BMU).

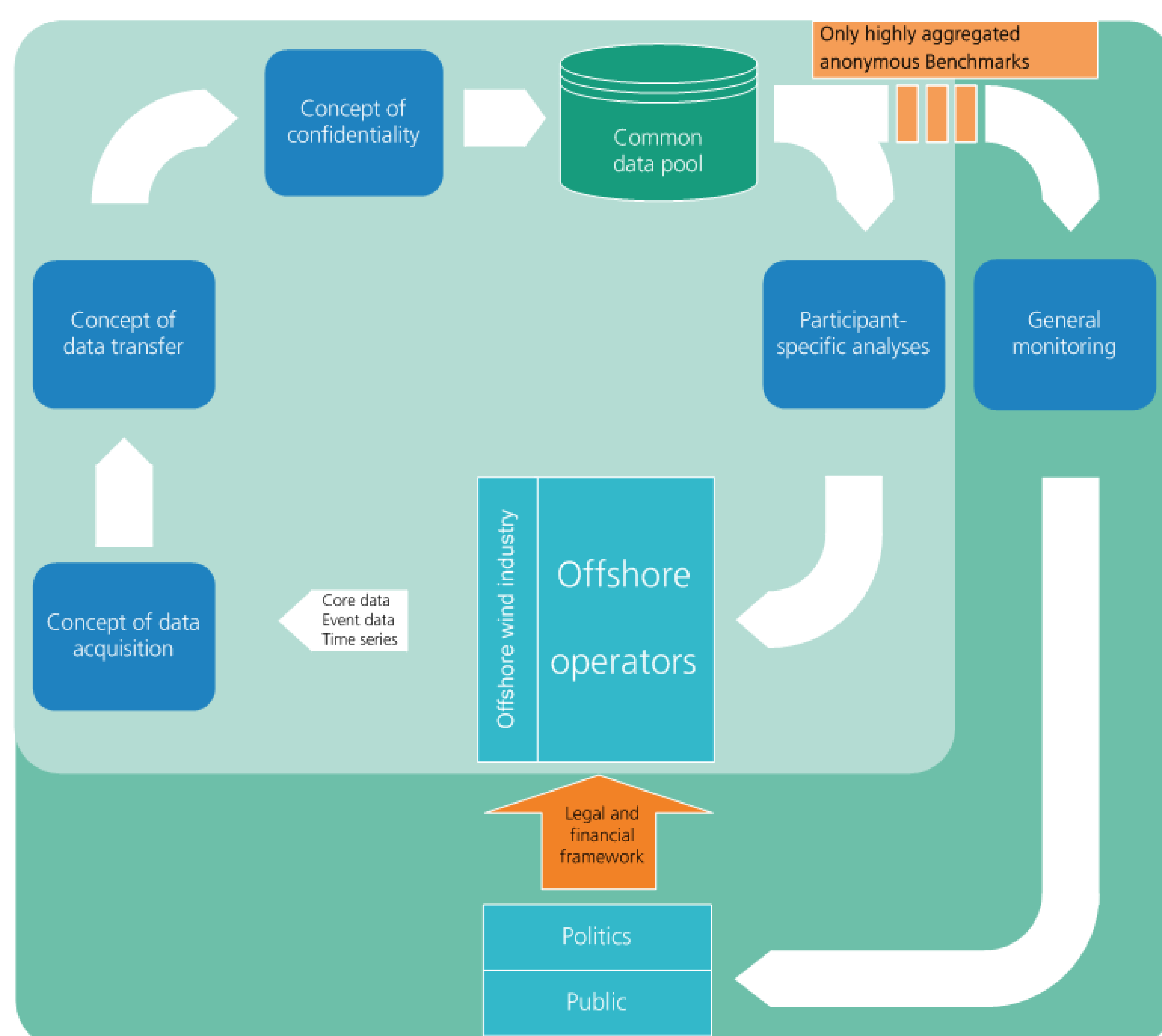
Objectives

The Offshore~WMEP shall on the one hand support the wind energy branch improving technology and O&M procedures towards higher reliability and availability, and on the other hand monitor the development in terms of techniques, electricity yields and cost.

The project will generate a common database, which enables statistically reliable predictions concerning the success of operational concepts. Based on this, topic-specific evaluations for all participants and a general monitoring for political decision-making processes as well as for the public, can be provided.

Furthermore, based on anonymous benchmarking and weakness analyses, operators and manufacturers have the opportunity to test and, if necessary, to optimize the performance of their offshore wind farms.

Common Database



In order to get a large statistical basis for evaluations and therefore results with strong validity, it will include as many offshore wind farms from Germany and other European countries as possible. Several leading operators have confirmed their participation in the Offshore~WMEP and will include data of their international wind farms in the common database. Other operators are welcome to join the Offshore~WMEP.

The incentive for the operators consists of a systematic preparation of O&M data that should indicate weak points of technology and non-effective maintenance processes and further benchmarks.

Participants of the Offshore~WMEP provide a database held in trust by the Fraunhofer Institute for Wind Energy and Energy System Technology (Fraunhofer IWES) with their data and get scientifically substantiated analyses of their offshore wind farm performance in return. All data is handled confidential as stated in the concept of confidentiality, which was worked out in the concept phase of the Offshore~WMEP.

Data is stored in a standardized form using RDS-PP and ZEUS. While RDS-PP enables a uniform designation of wind turbines and subsystems, ZEUS will be used for the description of failures, causes and related measures.

For establishing a broad information base, concepts for data-structure, -acquisition, -transfer, -analyses as well as for guaranteeing the confidentiality of the different participants are needed. These tasks were solved during the concept phase of the Offshore~WMEP, which has finished in 2011. As a follow-up project the first execution phase of the Offshore~WMEP is scheduled to start during the second quarter of 2012.

Wind Energy Report & Windmonitor.de



The series "Wind Energy Report Germany" is published annually by the Fraunhofer IWES and deals with both topics, offshore and onshore wind energy. Topics include, but are not limited to, installed capacity, technical development, grid integration and energy yield. The current report 2010 will be followed up by the Report 2011 soon, which will be available in German (April) and English (May) language.

The Report is created as part of the Offshore~WMEP and can be downloaded at windmonitor.de. Windmonitor.de also provides latest information about the development of wind energy use.

Outlook

The Offshore~WMEP moves on from concept phase, which has finished in 2011, to first execution phase in 2012. First data will be gathered in the common database and initial analysis will be performed. Furthermore the monitoring of offshore wind energy development will be continued and made accessible to the public.

More information can be found at:
www.offshore-wmep.de

