



Newsletter – issue no. 2 – March 2010

Welcome to the second newsletter of the WINDSPEED project

PROJECT UPDATE

The WindSpeed project is now in its second phase. To date, the WindSpeed consortium has gathered significant datasets on current sea uses and nature conservation areas as well as datasets needed to calculate the potential and cost of offshore wind. These datasets have been modified, harmonised and fed into a GIS-based Decision Support System (DSS) tool, which is being developed within the project. The DSS tool will be finalised within the next couple of months. Stakeholder workshops held last year (March – May 2009) gave relevant stakeholders the opportunity to provide input to the DSS tool. This spring, the consortium will initiate a scenario analysis, and use the DSS tool to investigate further the spatial opportunities and barriers for the development of offshore wind energy in the North Sea.

This second newsletter gives a brief status of the different work packages in the project.

Best regards

The WindSpeed consortium

Work package 2: Inventory of offshore wind potential and related infrastructure

In this work package four deliverables in the form of reports have been finalized. These deliverables contain important wind offshore related input for the DSS and the scenario analysis.

In [D2.1](#) factors that impact the technical feasibility of offshore wind energy (OWE) have been compiled. These include water depth, wind regime and distance from grid and port. Furthermore a methodology was developed to facilitate the assessment of capacity and energy production potentials across the Central and Southern North Sea. It was concluded in this report that there are no hard barriers to the deployment of wind offshore in the WindSpeed area.

Using the external conditions from D2.1 as an input, a methodology has been developed to allow cost of OWE to be determined for each part of the North Sea. Future cost reductions have been made possible through the application of progress ratios. More on the cost methodology can be found in [D2.2](#).

An overview of policy and regulations for the development of OWE is given in [D2.3](#). This report provides an inventory of policy and regulatory framework for the promotion of OWE, including targets and support schemes, spatial planning, consenting and licensing procedures in the six European countries bordering the Central and Southern North Sea.

An important/possible/identified bottleneck in the development of OWE in the North Sea might be the offshore and onshore grid infrastructure. In [D2.4](#) an inventory of current grid infrastructure and future plans for grid developments in the countries relevant for the WindSpeed project is described. The report focuses on challenges and issues regarding the large scale integration of offshore wind into the onshore grid, hereby defining connection points for offshore wind, discussing present network capacities and describing options for upgrading the onshore grid in order to accommodate large amounts of offshore wind power in the system.

Work package 3: Inventory of current and future presence of other sea use functions and identification of interactions

Two deliverables concerning the non-wind sea use functions and their interaction with offshore wind energy are now available. The first report “Inventory of current and future presence of non-wind sea use functions” (D3.1)[[link](#)] gives an overview of non-wind sea use functions (insert link). The functions include shipping, oil & gas extraction, fisheries, cables, pipelines, military activities, sand extraction and nature conservation. The spatial distributions are shown on maps and summarized in tables stating a.o. area in used (km²) as well as a percentage. Furthermore the report gives a qualified estimate on the expected growth of the sea use functions towards the target years 2020 and 2030.

The second report “Identification and analysis of interactions between sea use functions” (D3.2)[[link](#)] presents a matrix to summarise the nature of the interaction between each of the sea

use functions and then continues with a paragraph for each interaction elaborating each of them. Both deliverables are used to derive calculation rules for the Decision Support System (DSS).

Work package 4: GIS based Decision Support System

A first version of the GIS-based DSS has now been developed and will be fine-tuned and finalised within the next few months.

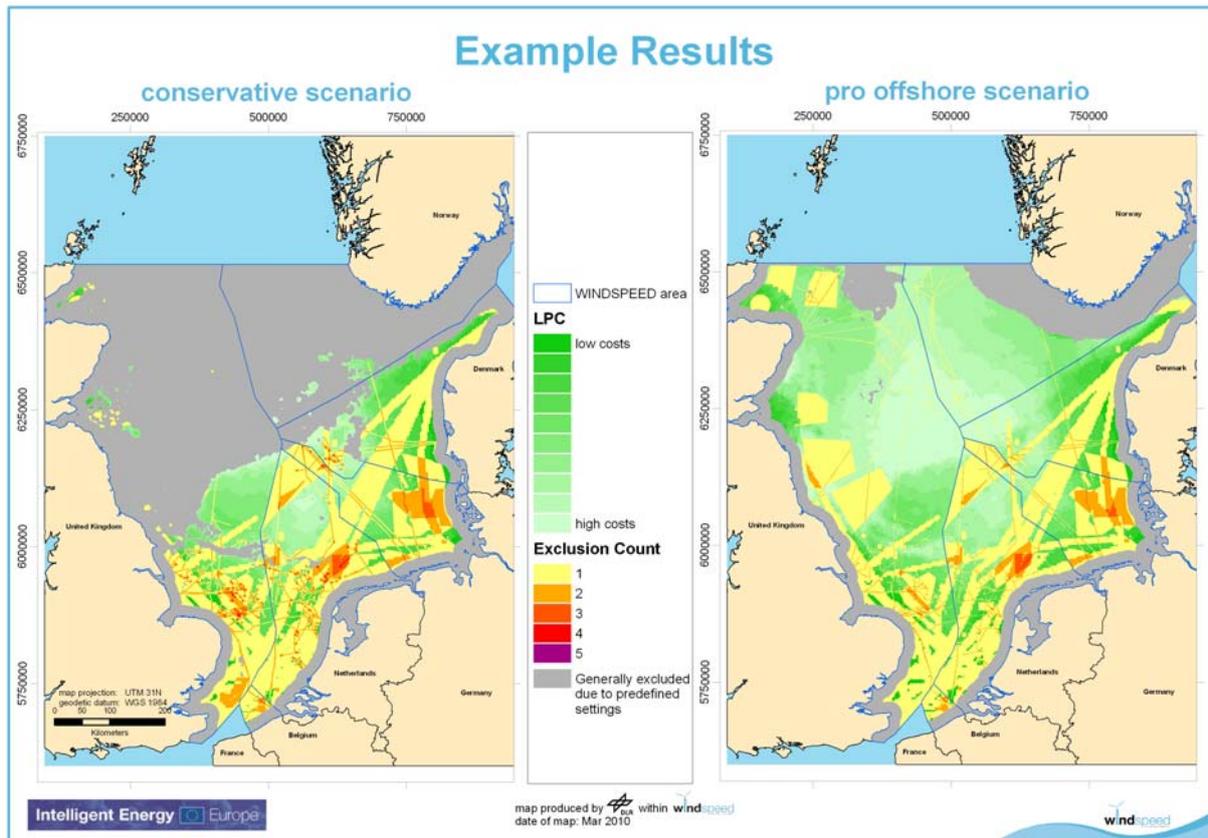
Most of the needed input data taking into account “wind” (e.g. wind speed, OWP costs) and “non-wind” (e.g. nature conservation, military use, shipping) sea functions was compiled from national and international databases and was harmonized and modified for the use in the DSS.

A final draft of the complete processing scheme has been made. Many input parameters (e.g. fixed charge rate, installed density) can be modified by the user through the DSS user interface. The following figure illustrates the interface for the module example of <distance to shore>. Here the user can define the range of distance to shore which is suitable for offshore wind energy usage. Many settings can be defined country-specific e.g. <Belgium>, whereas transnational settings are set generally <General Settings>.

The screenshot shows the 'Windspeed' application window. The title bar reads 'Windspeed'. Below the title bar are tabs for 'Windspeed Settings', 'General Settings', 'Belgium', 'Denmark', 'Germany', 'Netherlands', 'Norway', and 'United Kingdom'. The 'Belgium' tab is selected. The main content area is titled 'DistanceToShore' and contains the following text: 'DistanceToShore', 'DistanceToShore', and 'Define the usable area for Offshore Wind energy use by a minimum and maximum distance to the shore!'. There are two input sections: 'The minimum distance in kilometer (km) - (Default value: 15)' with a text box containing '15' and buttons '+', '-', 'Min', 'Max', 'Reset'; and 'The maximum distance in kilometer (km) - (Default value: 200)' with a text box containing '200' and buttons '+', '-', 'Min', 'Max', 'Reset'. Below these are several expandable sections: 'AreaByDepth', 'Shipping', 'MilitaryZones', 'Platforms', 'CablesAndPipelines', and 'NatureConservationAreas', each with a '+' button. At the bottom are buttons for 'OK', 'Cancel', 'Environments...', and 'Show Help >>'.

All cost calculation rules were implemented in the tool (e.g. calculation of Levelized Production Costs (LPC), Net Annual Energy Production). Suitable and non-suitable areas for offshore wind parks can be derived taking into account the input settings given by the user (e.g. make military zones (partly)

available for offshore wind parks). The following figure shows a first resulting map of the calculated LPC for a conservative approach and for a pro offshore wind approach. The green scaled colours show the remaining suitable area and its relative LPC for offshore wind parks (layout size: 600MW). The yellow/orange/red colours indicate the number of exclusion criteria which exist for the non-suitable areas. The grey colour shows the area that has been generally excluded by the pre-defined user settings (e.g. depth > 50m, distance to shore <10 km). The DSS interface allows for modifying many input parameters which lead to different offshore wind potentials as shown in the two figures (conservative and pro offshore wind).



An online DSS user interface will be made available soon to interested stakeholders, to allow for testing different spatial scenarios.

Stay tuned on the WindSpeed website for more details. For a specification of the DSS, see [D4.1](#)

Work package 5: Stakeholder consultation

A first round of workshops to consult stakeholders was completed last summer. A summary of outcomes can be found in the “Stakeholders Consultation” report, see [D5.3](#).

A second round of workshops will be held in the autumn of this year. In addition to the planned workshops, the consortium plans to consult stakeholders on the calculation rules that will be applied in the tool before finalising the DSS tool within the next couple of months. These rules are algorithms for deciding on how space can be allocated between the different sea use functions. Stay

tuned on the WindSpeed website for more details.

Work package 6: Scenario development and roadmaps

2010 will be an important year for the scenario related work of WindSpeed. Currently we are working on a methodology for the scenarios. In this work package we will develop scenarios for offshore wind up to 2020 and 2030 taking spatial interactions and grid integration issues into account. For this purpose the DSS tool will be used together with models from ECN and SINTEF, which will cover grid aspects and policy costs related to OWE deployment. The scenarios will be used as an input for the development of a roadmap. The roadmap will focus on a growth path allowing maximum offshore wind and minimum negative impact on other sea functions. More details on the scenarios framework will be posted on the WindSpeed website. Feedback from stakeholders on this will be appreciated!

Additional news

Several of the WindSpeed countries (Belgium, Denmark, Germany, the Netherlands, Norway and the UK) have made progress in improving the framework for offshore wind energy development, including the identification of zones for development. Below is a brief summary of some of the most recent developments in some of these countries:

In Denmark, the offshore wind turbines at Rødsand II will be erected with an output of just over 200 MW this year. The Danish Energy Agency has also tendered out another offshore wind turbine project at Anholt/Djursland with an output of around 400 MW. This tender, which is planned to be connected to the Danish electrical grid by the end of December 2012, is open until 7 April 2010. The EIA is now subject to a public hearing which ended on 8 March 2010.

In Germany, the first two commercial offshore wind parks are going to be built: BARD Offshore 1 and Baltic 1 will be built. In October 2009, the German regulator (Bundesnetzagentur) issued a position paper on criteria for grid connections of offshore wind parks. The offshore site needs to be licensed (1), a feasible construction schedule has to be set (2), soil needs to be examined (3) and concerning contracts for orders of wind power plants the financing commitment needs to be secure or preliminary contracts for orders need to be signed (4). If criteria 1,2,3 or 1,2,4 are fulfilled the TSO has to assure a conditional grid connection (see press release on: <http://www.bundesnetzagentur.de/media/archive/17325.pdf>).

In the **Netherlands**, a tendering scheme for 950 MW of wind offshore was launched in January 2010 and closed on March 1st 2010. An announcement of the winning bidders will be made at the end of May 2010. For more information on the offshore wind tender in the Netherlands:

http://www.senternovem.nl/sde/Wind_op_zee/index.asp (in Dutch). There is also a spatial planning

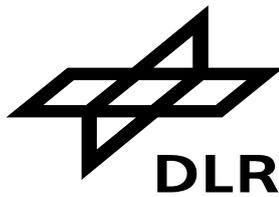
process going on in the Netherlands for finding space for an ambition of 6000 MW in 2020, see: http://www.noordzeeloket.nl/nieuws/windenergiegebieden_op_zee_notitie_reikwijdte_en_detailniveau.asp (in Dutch).

In the **UK**, the Crown Estate announced the successful bidders for the Round 3 offshore wind zones within UK waters in January 2010. Round 3 wind offshore farms aims for a total capacity of 32 GW of OWE. This should be sufficient for a quarter of the UK's total electricity needs by 2020. More information can be found on: <http://www.thecrownestate.co.uk/newscontent/92-r3-developers.htm>.

In addition, EUs recovery plan funding will support offshore wind power. Offshore wind projects in the North and Baltic seas will receive €565 million in support. Around half of this will be allocated towards infrastructure necessary for the offshore wind farms. Several of the North Sea projects that will receive funding will demonstrate innovative and deep sea substructures and cabling technologies as well as innovative turbine solutions. See: <http://www.ecoseed.org/en/general-green-news/renewable-energy/wind-energy/offshore-wind/5543-E-U-infuses-millions-into-North-Sea-offshore-wind-links>.

Our next newsletter will focus on the DSS tool, to appear at the end of April

Partners



If you would like to obtain further information, please visit: www.windspeed.eu or contact the project coordinator, Karina Veum, email: veum@ecn.nl or telephone: +31 (0) 224 56 82 08.

Disclaimer: The WINDSPEED project is supported by the Intelligent Energy for Europe (IEE) programme. The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Communities. The European Commission is not responsible for any use that may be made of the information contained therein.