

THE CENER WIND MODEL, AMONG THE BEST AT THE BOLUND EXPERIMENT

Sarriguren (Navarra), 23 March 2010.- The CFDWind wind simulation model, presented by technicians from the National Renewable Energy Centre, CENER, has been acknowledged as one of the best according to the results obtained in the so-called “Bolund Experiment”, organised by the National Sustainable Energy Laboratory, Risø, belonging to the Danish Technical University (DTU) and co-financed by Vestas, with a view to validating flow models in complex terrain.

Risø DTU launched a challenge aimed at modellers all over the world, consisting in predicting the wind on the Bolund hill, based on the free wind conditions on entry and on the relief of the terrain. The participants accepting the challenge were mainly European together with research centres and enterprises from Canada and India.

The Bolund hill, located on the fjord of Roskilde (Denmark), is 12 metres high with complex terrain characteristics at scale. The measurement campaign took place between the months of December 2007 and February 2008 and comprises a large database designed to validate flow simulation models, especially those based on CFD (Computational Fluid Dynamics).

More than 50 modellings were presented by the more than 80 experts from different research centres, universities and industrial agents, operating globally. CENER presented two models that were among the best when predicting the average velocity at the measurement points. In particular, according to the ranking presented by Risø DTU, for the sensors situated above 5m, the CENER CFD Wind 2.0 model achieved the best results with a global mean error of 4% in wind velocity simulation.

Over the last few years, the number of wind farms installed on complex terrain has increased considerably and many of the CFD tools used to predict the wind flow have not been validated with precision.

The wind resource assessment with CFD techniques has represented an important advance in wind simulation and the results obtained in this experiment consolidate our methodology. CENER has developed two wind models recently: CFDWind 1.0, a surface layer model, and CFDWind2.0, a limit layer model, with which the National Renewable Energy Centre, CENER, wished to be present at the Bolund Experiment, taking advantage of the opportunity to show its CFD abilities.

The weather forecast for wind, cloud, rainfall and also for waves can be consulted each day on the CENER website (www.cener.com).

For further information about the Experiment: <http://www.risoe.dtu.dk>