SAFEWIND CONFIRMS EUROPEAN EXCELLENCE & LEADERSHIP IN WIND POWER FORECASTING

Combined efforts of EU industry and research deliver solutions for increasing the share of renewable energy in electricity generation

The European project SafeWind has developed leading-edge research in short-term forecasting of wind power by:

- Delivering state-of-the-art solutions to facilitate large-scale integration of wind energy into electricity networks.
- Bringing its solutions close to the business processes of the European power systems industry.
- Developing academic excellence and European leadership in the field with more than 120 scientific publications (30+ journal papers).
- Creating worldwide business opportunities for high-end European technology. SMEs in the project already use the new knowledge acquired to provide forecasting services.
- A successful public workshop presented the project results and marked 10 years of European collaborative research that have shaped the field, starting with the projects ANEMOS and ANEMOS.plus.

Integrating wind generation into power systems brings challenges because it depends on weather conditions. Forecasting the power output of wind farms, and the related uncertainties, is a means to facilitate large-scale integration of wind generation, in line with the EU goals for 20% of renewables by 2020.

Prior to SafeWind, the focus was on forecasting "usual" operating conditions. However, challenging or extreme situations can result in severe forecasting errors that can be costly for both infrastructures (i.e. damage of wind turbines) and the electricity grid (i.e. black-out). SafeWind emerged to satisfy end-users’ need for specific approaches that substantially improve wind power predictability by reducing large errors, or by predicting extremes at local scale through to European scale. In addition, wind predictability was considered as a system design parameter linked to the investment phase, where the aim is to take optimal decisions when installing new wind farms.

The four-year project was coordinated by the Centre for Energy and Processes, a joint Research Centre of MINES ParisTech and ARMINES in France. The Consortium comprised 23 partners from 9 countries including India. Excellence was developed through multidisciplinary research in close relation to industry. The role of the industrial partners was crucial since they provided among others real-world data that were used for the validation of the developed models. Recognising the role of meteorology when integrating renewables into power systems, a strategic collaboration was developed with the European Centre for Medium Range Weather Forecasts (ECMWF), the central research and operational weather forecasting centre in Europe. The EU-India partnership was highly appreciated by both sides. Beyond Europe, the project made it possible to understand the specific nature of wind power forecasting in India and use measured data to test models for the particular climatic conditions there.

SafeWind, together with the previous projects ANEMOS and ANEMOS.plus, covered the entire value chain, from R&D and evaluation through demonstration and applications, up to commercialisation of the resulting ANEMOS software (i.e. by the Australian Market & System Operator).
SafeWind

The Consortium

9 countries, 23 partners
- End-users
- Industry
- Research
- Universities
- Meteorologists

Budget: 5.6 Mio€
Duration: 4 years

The Participants

Final Project Meeting 30/8/2012
Information:

Web site:  www.safewind.eu

Contact person:  Dr. George Kariniotakis, Scientific & Technical Coordinator, MINES ParisTech – ARMINES, Centre for Energy & Processes,
Email:  georges.kariniotakis@mines-paristech.fr.
Tel:  +33-493957501

www.armines.net
www.mines-paristech.fr
MINES ParisTech is Member of the Carnot M.I.N.E.S. Institute