



## 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:

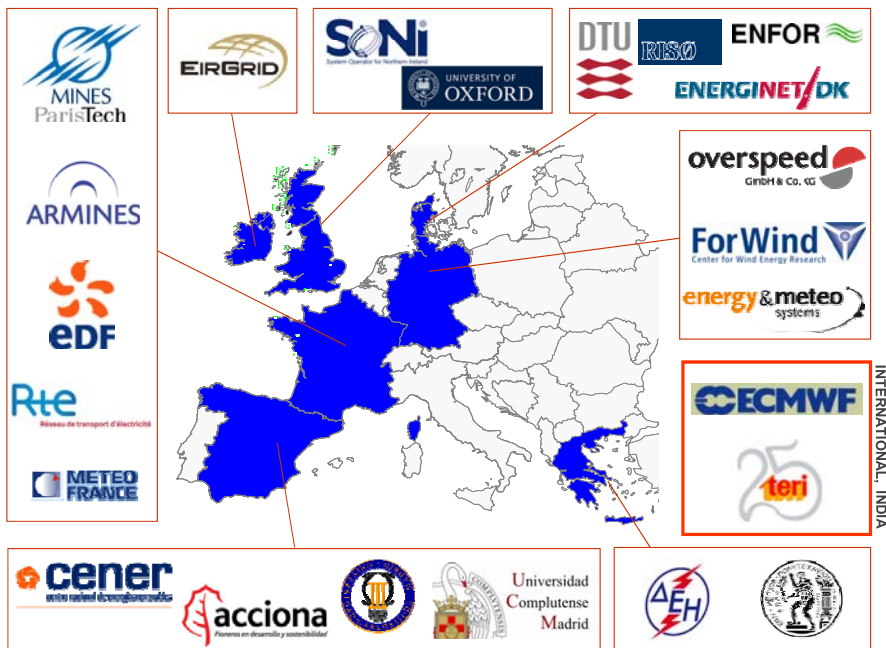
- Delivering **state-of-the-art solutions** to facilitate **large-scale integration of wind energy into electricity networks**.
- Bringing its **solutions close to the business processes** of the European power systems industry.
- Developing academic **excellence** and European **leadership** in the 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).



**2008-2012**

9 countries,  
23 partners

End-users

Industry

Research

Universities

Meteorologists



Budget: 5.6 Mio€

Duration: 4 years







Web site:

[www.safewind.eu](http://www.safewind.eu)

Contact person:

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

[www.armines.net](http://www.armines.net)

[www.mines-paristech.fr](http://www.mines-paristech.fr)

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