# R&D NESTER

WIND POWER FORECAST

The challenge: Wind energy is still a challenge for the system operator because of the variability of this type of production. The market design expects a firm production and deviations are financially penalized.

HOW WE APPROACH IT

Several mesoscale models (MM5, WRF) are used to forecast the wind speed and other meteorological parameters for the next week, for reference wind generators at turbine height. Algorithms are used to convert wind to power and power limitation is included when there is maintenance work on the network. For the short-term forecast, the real-time production from the SCADA system is used. Combination of several forecast are used to improve the final forecast. Probabilistic analysis is also used to define the confidence interval. Upscaling to national level is also performed. The average error is 5% related to total forecasted power. This tool is currently being employed by an European TSO.
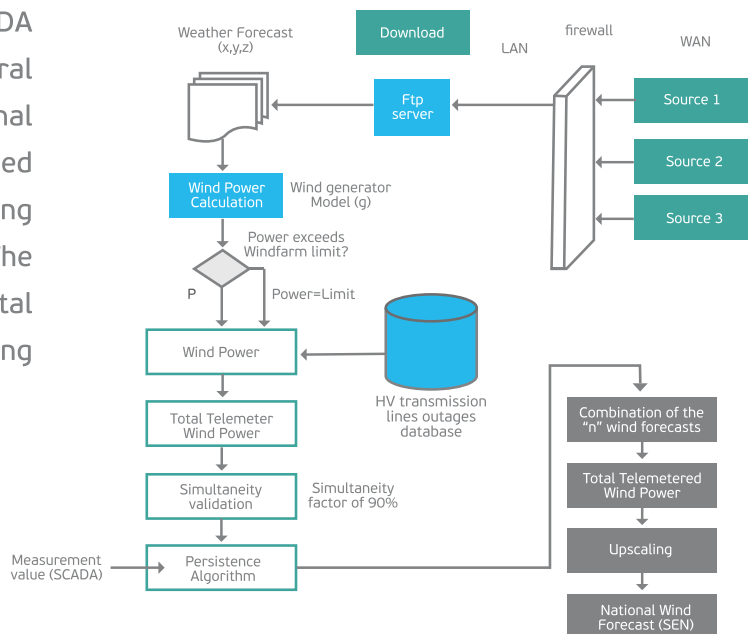
Relevant Publications
- Paper "Ensemble-Based Estimation of Wind Power Forecast Uncertainty" in EEM15, 22 May 2015 in Lisbon, Portugal.
- Paper "Wind power forecast uncertainty using dynamic combination of predictions" in DEMSEE15 – 10th International conference on Deregulated Electricity Market Issues in South Eastern Europe, 24-25 September 2015 in Budapest, Hungary.

Contact us
Phone_ 351 210 001 300
E-mail_info@rdnester.com
Webpage_www.rdnester.com
Adress_Rua Cidade de Goa, 4B
2685-038 Sacavém - Portugal
Follow us on **in**
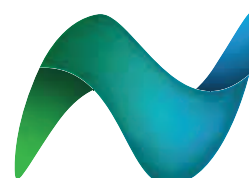
R&D NESTER
CREATING A SMART ENERGY FUTURE