



Improving probabilistic weather forecasting for the grid integration of weather-dependent renewable energies

N. Schuhen, Z. Ben Bouallègue, R. Keane, K. Lundgren, and M. Buchhold
Deutscher Wetterdienst, Offenbach, Germany (nina.schuhen@dwd.de)

With climate change becoming an issue of great importance in today's society, the German government has adopted a change of policy, actively promoting the role of renewable energies in the overall energy supply. The EWeLiNE project, a cooperation between the German Meteorological Service (DWD), the Fraunhofer Institute for Wind Energy and Energy System Technology, and three of the German transmission system operators, strives to improve forecast quality for power production from wind farms and photovoltaic power stations.

Reliable and accurate predictions for weather-dependent energy sources lead to increased safety and stability for the transmission grid and more efficient commercialisation. Consensus is that improving the underlying weather forecasts holds the greatest potential for optimising power forecasts. Probabilistic predictions are a matter of particular interest, as they provide an important tool for risk management and the assessment of forecast uncertainty. In the context of EWeLiNE, the convection-permitting COSMO-DE ensemble system will be analysed with regard to its predictability for wind- and PV-related variables. Based on these results, the ensemble member generation and the development of new products and calibration techniques will be addressed. An overview over the EWeLiNE project will be given, as well as initial results.