



Improved Weather and Power Forecasts for Energy Operations - the German Research Project EWeLiNE

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The German energy system is going through a fundamental change. Based on the energy plans of the German federal government, the share of electrical power production from renewables should increase to 35% by 2020. This means that, in the near future at certain times renewable energies will provide a major part of Germany's power production. Operating a power supply system with a large share of weather-dependent power sources in a secure way requires improved power forecasts. One of the most promising strategies to improve the existing wind power and PV power forecasts is to optimize the underlying weather forecasts and to enhance the collaboration between the meteorology and energy sectors.

Deutscher Wetterdienst addresses these challenges in collaboration with Fraunhofer IWES within the research project EWeLiNE. The overarching goal of the project is to improve the wind and PV power forecasts by combining improved power forecast models and optimized weather forecasts. During the project, the numerical weather prediction models COSMO-DE and COSMO-DE-EPS (Ensemble Prediction System) by Deutscher Wetterdienst will be generally optimized towards improved wind power and PV forecasts. For instance, it will be investigated whether the assimilation of new types of data, e.g. power production data, can lead to improved weather forecasts. With regard to the probabilistic forecasts, the focus is on the generation of ensembles and ensemble calibration. One important aspect of the project is to integrate the probabilistic information into decision making processes by developing user-specified products. In this paper we give an overview of the project and present first results.