Weather and Power Information Tailored to the Needs of Renewable Energy Industry in a web-based GUI

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The change in energy policy towards renewable energies requires a reorganization of the national power mix in order to maintain a stable power grid. Wind farms and PV power plants are particularly affected by weather. In the research project EWeLiNE, the Deutscher Wetterdienst (DWD) and the Fraunhofer Institute for Wind Energy and Energy System Technology (IWES) are collaborating with three German Transmission System Operators (TSOs). The overall aim of the project is to improve the weather and power forecasts and to develop new forecast products, especially focusing on the grid stability.

Besides providing optimized forecasts, a strong focus is set on the development of new user specified products which results from the close cooperation between DWD, IWES and the TSOs. In a guide user interface tool (GUI) these new products are combined into a process chain and are used to provide weather and power forecasts to the TSOs in a real-time decision support tool. The tool displays simultaneously probabilistic NWP products and power forecasts for intraday and day ahead horizon. Further products as warnings of severe weather and observational data, e.g. radar, are included. The use of a web-based development platform enables short development cycles and agile adaptation to evolving user needs.

An overview of the internal structure and functionality of the GUI will be given. The benefit of the synergy between the power forecasts and meteorological forecasts will be shown.