



GUI for weather forecast products tailored to the needs of renewable energy industry

Tobias Reinartz (1), Alexandros Bouras (1), Isabel Metzinger (1), and Malte Siefert (2)

(1) Deutscher Wetterdienst, Offenbach, Germany (tobias.reinartz@dwd.de), (2) Fraunhofer Institute for Wind Energy and Energy System Technology, Kassel, Germany (malte.siefert@iwas.fraunhofer.de)

Due to the planned rapid expansion of weather-dependent power production up to 35 percent in 2020 in Germany, the need for high-quality wind power and PV forecasts increases, in order to continue to operate a power supply system in an economical and secure way. Deutscher Wetterdienst (DWD), Fraunhofer Institute for Wind Energy and Energy System Technology (IWES) and three Transmission System Operators (TSOs) in Germany address this challenge within the research project EWeLiNE. Its main goal is to improve the wind and PV power forecasts by combining optimized weather forecasts and improved power forecast models.

To present these forecasts to the TSOs in a user friendly visualization, a so-called Demonstrator has been developed. This tool enables the delivery of weather forecast products, especially developed for the needs of the energy sector, in a highly time resolved, interactive and web-based way for the first time. This form of presentation provides a significant added value with respect to existing static and non-uniform ones. The weather data are integrated straight in an open source Web Viewer as OGC conform GeoWebServices. Therefore it's not only possible to present the data in a web-based way in the Demonstrator, but also to use it in the geo-information systems of the TSOs. Thus its seamless integration in existing systems of the TSOs offers a high potential for future use.

It will be shown, that the Demonstrator includes on the one hand Intraday and Day Ahead wind power and PV forecasts and on the other hand a multitude of meteorological forecasts, e.g. wind, cloudiness and global radiation, especially optimized for the energy sector. The latter can be displayed as single pictures for a detailed meteorological investigation as well as animation for a rapid overview of the further weather development. Besides these special forecasts also radar products as well as official weather warnings from DWD are available.