



Regional tendencies of potential wind power over Hungary

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Since environmental processes may be affected by global warming and changes of extreme climate events, conversion of renewable energy sources has been considered a key issue for some decades. Globally, wind energy has become a mainstream energy source. The wind power capacity has grown significantly in Hungary as well. By the end of 2007, the cumulative installed wind capacity was 65 MW, but the wind share of electricity demand was only 0.35 %.

Identification of optimal wind farm development sites relies on detailed local wind climate knowledge. Hungary had not been the subject of extensive wind resource analysis in the last century. However, several studies were carried out investigating on surface and upper-air wind records spanning several decades. In response to the need for a new statistical analysis a research started on clarifying the possible changes of wind characteristics in the country. The study is based on 34-year-long (1975-2008) wind data sets of 36 Hungarian synoptic meteorological stations. Mean and extreme wind climate characteristics were analysed. Spatial and temporal distributions of potential wind power were estimated. Finally, using a mesoscale wind model detailed wind resource map of Hungary was simulated.