

EP BiH Wind research profile - WIND POWER AT HIGH ALTITUDES

Background

EP BiH has opted for future strategic planning devoted to expanding and diversifying its generation portfolio, by introducing novel technologies into the companies generation mix. Wind energy is just one of the technologies under study, whereby attention is being given to the disposable wind power potential of the BiH's high mountain range, at **altitudes ranging from 750m to 1700m a.s.l.** A similar wind potential study was carried out for the Alpine mountain crown within the EU-INTERREG IIIb project, under the name „Alpine Wind Harvest“ [1].

The data recording campaign of EP BiH was launched in 2009 and has so far been carried out at ten geographically dispersed recording sites, thereby taking care of accessibility and vicinity of HV transmission lines. Based on subsequent data evaluation, eight recording stations have been kept in operation, with future yet to come. As initial measurements have only been indicative in nature, first recordings compliant with IEC 61400-12-1 and MEASNET recommendations have commenced in 2010. Data is being recorded by first class recording equipment at two characteristic mast heights: 10m/30m and 30m/60m a.g.l., depending on the selected site under study. Data is recorded in 1 second recording intervals and stored at a 10 minute averaging rate. For two out of eight recording sites, solar data is being recorded as well in form of 10 minute solar irradiance records.

Capacity and Capability

The main objective of EP BiH is to promote renewable energy sources in the generation portfolio of BiH, by exploiting wind abundant and otherwise deserted high altitude areas of BiH for the purpose of electricity generation, therewith contributing to further economic development and growth. The main scope of the data recording campaign of EP BiH is to investigate the embedded wind potential and analyze wind characteristics of high mountain plains, as well as evaluate the associated techno-economic viability of exploiting wind power and generating electricity from wind in such operating conditions. This includes research in evaluating specific wind characteristics recorded at high altitudes, identifying operating constraints in harsh weather conditions, as well as fostering exchange of good practice and expertise related to this field.

EP BiH has currently eight operating wind recording stations, with data being recorded at: 10m/30m (3 recording stations) and 30m/60m (2 recording stations) tubular masts. Data recording is compliant with IEC 61400-12-1 and MEASNET recommendations, with first measurements commencing in 2010. First recording at 60m and 80m lattice masts started end of 2012 for three selected sites.

Contribution to the European research community in the field

The main contribution of EP's work lies in the exploration of rather unattractive but energy abundant areas for the purpose of electricity generation. Specific terrain configuration, low temperature and other characteristics of such operating conditions would contribute to expanding the knowledge base specific to this field and provide high quality input data for other potential wind studies.

Overall, the benefits will primarily be those of the local communities: land owners, municipalities, local population and governments, but also of other entities such as: power utilities, equipment suppliers/ manufacturers, benefitting from the economic development of this sector, as well as the associated infrastructural changes and the demonstration character of the projects. A more rational use of resources would contribute to improvements in emission reduction and resource utilization, playing a supporting role to energy conservation and environmental preservation, therewith fostering further economic development and growth. Cross-border cooperation could provide a good basis for the exchange of best practice and future collaboration.

References

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Published work

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