

EPBiH - SOLAR POTENTIAL research profile

BACKGROUND

Environmental protection, the conservation of natural resources and preserving the current state of natural environment so as, where possible, reversing its degradation; had initiated the JP EP BiH commitment to restructuring generation portfolio in accordance with legal requirements, regulations and EU directives in the field of energy, environmental protection and renewable energy sources. Increasing the overall share of renewable energy in the final energy consumption is one of the main and strategic objectives of the company. Willingness for generation portfolio diversification by introducing power plants using renewable sources potential, including solar potential, had led launching the solar potential measurement campaign in 2010.

CAPACITY AND CAPABILITY

Within the measuring campaign, six individual sets were installed, as well as four sets for solar potential evaluation within the wind potential measuring station. The microlocations where measurements are performed are spatially distributed in order to be able to estimate the solar potential for as wider field as possible, preferably for the entire country. The measurements are performed on locations with various characteristics in order to be able to evaluate, compare and estimate the preferable locations and determine optimal way of resource utilization. Data is recorded in 1 second recording intervals and stored at a 10 minutes averaging rate. Activities on this area in our company are managed by Department for Strategic Development, with highly competent staff: two more experienced researchers (PhD researchers with more than 10 years of full equivalent experience), two experienced researchers (PhD researchers with 4-10 years of full equivalent experience and three young researchers (PhD candidates).

CONTRIBUTION TO THE EUROPEAN RESEARCH COMMUNITY IN THE FIELD

The measurement results have confirmed the existence of significant solar potential, as it could be assumed considering the B&H geographic position. Analysis of the recorded data results at locations where solar and wind data were collected has shown that solar and wind potential are relatively complement in time (day/night and season variations). Outline analysis showed three convenient locations for hybrid system (solar/wind) installation and commission.

Considering the fact that this region abounds with locations with significant wind and solar potential, as well as the nearby settlements are radially fed causing high level of distributive losses, it could be very useful to analyse and evaluate impact (and benefits) so as determine/develop the best praxis of using this potential. That would also contribute improving supply reliability and could stimulate and create the necessary preconditions for tourism development and the development of eco-villages, as well as the development of agriculture and livestock farming in these areas. Also, one of the benefits of locations where solar potential is being measured is the fact that due to higher altitudes of locations the ratio of direct component of solar radiation is higher than in valley areas, giving the possibility to research into, development and demonstration possibilities of Concentrating photovoltaic (CPV) technology applications. Besides that, considering the identified economic potential, with the aim of reaching the largest possible share of capacity using renewable energy, those areas where the potential is determined by measurements over a period of 30 months, can be used for the application of integrated technology demonstration and technologies in development, aiming to research, identify and increase efficiency, reliability and availability of those technologies.

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