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The Southern Development Region of the Republic of Moldova in Context of the Wind Energy Potential

RACHIER Vasile, MANGOS Octavian, SOBOR Ion

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Abstract

One of the priority directions of the leadership of the Republic of Moldova, is the stimulation of local electricity production from renewable sources, where the main possibilities are wind and solar energy. In this paper, are studied the wind energy potential and wind characteristics for the administrative-territorial entities of the second level (districts) in the Southern Development Region of the Republic of Moldova, which includes 8 districts: Basarabeasca, Cahul, Cantemir, Căuşeni, Cimişlia, Ştefan Vodă, Leova, Taraclia and Territorial Administrative Unit - Găgăuzia. To carry out the research, were used: the special program Wind Atlas Analysis and Application Program (WASP), data on wind speed and direction measured at the hydrometeorological station Ceadir-Lunga from the subdivision of the State Hydrometeorological Service and the orographic map of the Republic of Moldova. For the whole region were: calculated and presented the maps of the average annual wind speed and wind power density at the height of 100 m above ground level; classified the district territory according to the power density value and also calculated the theoretical wind power possible to install. Following the calculations made for the eight districts analyzed and (TAU)-Găgăuzia, it was found that the average annual wind speed at a height of 100 m is between 5,27 and 7,50 m/s, and the wind power density - between 163 and 415 W/m 2 . In Cantemir district was identified the highest average annual speed equal to 7,50 m/s and wind power density equal to 422 W/m 2 but in Basarabeasca district are the lowest numbers.

Keywords: *wind energy potential, Wind Atlas Analysis and Application Program, average annual wind speed, administrative-territorial entities, power density*

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