

Master en Sciences de l'Environnement (MUSE)

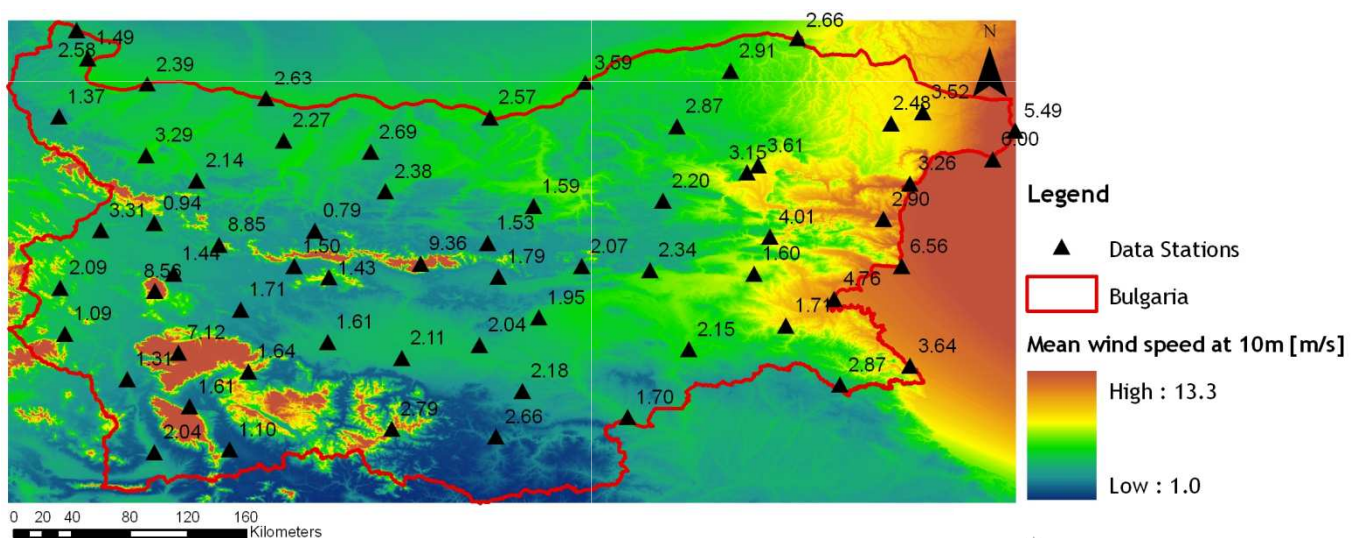
“Evaluating the potential for wind electricity production in Bulgaria”

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Abstract

In the context of global warming, caused primarily by anthropogenic greenhouse gas emissions (GHG) from energy production, an urgent change of the energy system is called for. The European Union is particularly concerned by the issues of security of supply and energy dependency from imported fossil energy sources. It has set therefore targets and programs for reduction of GHG emissions, increase of renewable energy sources (RES) use in gross final energy consumption and energy efficiency improvement by 2020. Achieving the corresponding national targets is the priority of the Bulgarian energy strategy, with the additional challenge of leveling its economic and social development.

The advantages of wind energy in addressing these issues are analyzed under the scope of the EnviroGRIDS project. We apply a regression model through the statistical package of Generalized Regression And Spatial Prediction (GRASP) to assess the availability of the wind resource. Suitable sites for wind installations are then identified using an optimistic multi-criteria selection model in Geographic Information Systems (GIS) to calculate the wind electricity production potential of the country. Finally, the national economic and political conditions and constraints related to wind energy are analyzed to determine if the computed potential is realizable.



« Predicted mean wind speed » – V. Djambazova



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