

IMPLEMENTATION OF WIND ENERGY RESEARCH PROJECTS AT THE HIGH SCHOOL LEVEL

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This project focuses on the work of various UMBC associates which is titled *An Assessment on the Wind Energy Potential and Possible Solutions for Power Generation in Baltimore County in Maryland, US* to see if a similar research investigation can be implemented at the high school level. Large-scale wind power generation has the potential to decrease dependence on traditional, non-renewable resources, like oil and coal, with doing little to no damage to the environment, which is why wind power is being considered as a potentially leading resource of renewable energy. This project aims at educating high school students interested in STEM fields about the various types of wind instruments used to measure and collect wind speed data as well as what they do, how they work, and in what conditions are these instruments used. In addition, through the execution of this project, the students can learn how to analyze the daily, monthly, and annual wind speed data collected and how to use the Weibull and Rayleigh distribution functions using MATLAB and/or Excel to calculate and obtain the final results. Finally, the students can then use the results to determine if the site they are analyzing is adequate for the implementation of large-scale wind power generation facilities, thus contributing to the effort in reducing reliance on nonrenewable energy resources.

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