Computational Fluid Dynamics for Assessing Urban Wind Energy Potential in Vietnam

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Abstract

Urban areas contribute substantially to the global energy consumption and it is expected that with increasing urbanization their contribution will continue to rise. This is one reason why currently a lot of research in Built Environment Wind Energy Technology is conducted internationally. This research focuses on one hand on the design of small and medium scale wind turbines which efficiently use the urban wind with its low mean wind speed and high turbulence levels. On the other hand methods are investigated that enable an accurate estimation of the wind energy potential at specific locations in specific urban areas. In the presentation the general methodology for using Computational Fluid Dynamics to predict urban wind energy potential will be introduced and exemplified with initial simulations of the wind in the central business district of Ho Chi Minh City. Open issues for the effective use of this methodology in Vietnam will be addressed.

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