

Harvesting wind energy from aerodynamic design for building integrated wind turbines

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=9999920529706&lokasi=lokal>

Abstrak

Alternative energy, nowadays, becomes more necessary than fossil fuels which might be destructing and polluting the earth's environment. Wind can be one of the most cheap, secure, environment friendly and reliable energy supplies. Building Integrated Wind Turbine (BIWT) is becoming increasingly common as a green building icon and new method of assessing optimal building energy. However, to employ BIWT, it is important to design the building shape and swept area carefully to increase wind velocity. Some of numerous design forms of BIWT will be explained in this paper using CFD (Computational Fluid Dynamics) analysis to find the most effective BIWT design in urban area. This paper will focus on the maximum wind velocity which passes the swept area to get maximum wind power. The result shows that, building energy can be optimized through aerodynamic building design to get the maximum wind power for building energy consumption.