

STATE-OF-THE-ART REVIEW ON VERTICAL-AXIS WIND TURBINES (VAWT's)

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ABSTRACT

Considering the current trend to replace fossil energy sources with renewable energy sources, caused by the existing global crisis, wind energy is shown as one of the most promising among the renewable energies. In the last years, wind energy has been widely studied with good results in terms of quantity of energy generated for some projects. Although the majority of these studies are on horizontal-axis wind turbines (HAWT's), vertical-axis wind turbines (VAWT's) had also need to be considered because they allow a good integration between urban life and microgeneration on residential and rural areas. In this sense, this work presents and discusses the working principle and the principal characteristics of all kinds of VAWT's present in the literature. Besides, recent research and advances related to VAWT's are also presented and discussed.

Keywords: Energy Generation, Wind Energy, VAWT's, Savonius, Darrieus, Wind Turbines.

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