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Wind Potential Assessment in the Department of Meta – Colombia

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Abstract:In this research, the assessment of eolic potential in the plane zone of department of Meta-Colombia was carried out, and economic prefactibility analysis was done about the electricity system from wind velocity data at a reference height ($z = 10\text{m}$). Five different types of power turbines between 330 and 3000 kW were studied in order to analyze their technical and economic feasibility. The evaluated zone presented an energy potential of 4.9075 GWh/year, using a 3000 kW (Vestas V-112) turbine at a height of 90 m. The production cost of kWh under this condition was approximate 123.67\$/Kw-h.

Keywords:air generator, wind energy, economic analysis, wind potential.

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