

**DESIGN AND CONSTRUCTION OF A BLADELESS  
WIND POWER SYSTEM**

**THESIS**

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wind power system  
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## **ABSTRACT**

**GARCIA, ARCHIE O. and PAYO, JEROME ANTHONY F. Design and Construction of a Bladeless Wind Power System.** Undergraduate Design Project. Bachelor of Science in Electrical Engineering. Cavite State University, Indang, Cavite. Adviser Engr. Efren R. Rocillo.

A study on the Design and Construction of a Bladeless Wind Power System was conducted to integrate the lessons acquired in the Electrical Engineering program. The study aimed to: determine the wind speed in Cavite State University, Naic, Cavite; determine the appropriate size of generator to be used, design roller, air duct, charge controller and inverter; design and construct bladeless wind power system; test and evaluate the system; and conduct cost analysis.

The study covered the design and construction of the bladeless wind power system that has been evaluated based on the factors affecting the power generation and performance of the study such as time, distance from the shoreline where the study was installed, and the height from the ground. It was found out that at time frame from 13:00 to 19:00, 20 feet to 30 feet from the shore line, and 8 feet from the ground, the device was at its 100 percent power generation.

The bladeless wind power system showed significant amount of potential in terms being an alternative source of energy because wind is the cleanest and the cheapest of all the options available. Since the roller of the system was concealed and protected by the air duct, the system was able to avoid the production of hazard to the environment such as killing of migratory birds and noisy nasty sound unlike the traditional type of wind turbine, without compromising the power output.

Based on the results of the study, the proponents recommended the national agencies and other researchers to align their interest in strategic assessments and funding adhered to the development of renewable sources of energy which can eventually help our economy.

The total cost of the study was P 48, 650.00.

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# **DESIGN AND CONSTRUCTION OF A BLADELESS WIND POWER SYSTEM<sup>1/</sup>**

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## **INTRODUCTION**

Wind power has been around since time immemorial. It is widely used in navigation, irrigation, water pumps and agriculture. Wind arises from variations in atmospheric pressure in different parts of the world. Wind power can capture this energy by using windmills or wind turbines that slow down the speed of the air, transferring power to the rotation of the blades (Goodall, 2008).

The Philippines is one of the countries in Asia that is heavily dependent on fossil fuel imports for energy consumption. However, due to the unabated increase in fuel prices, environmental pollution and the possible exhaustion of available resources, searching for cheaper, cleaner, greener and more sustainable sources of energy is becoming increasingly important and highly demanded these days. One of the most conventional renewable sources of energy is the wind power generator (Garcia, 2012).