

# A Review of Wind Ventilator through Electricity Generated System

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**Abstract** - This paper describes about the modified wind ventilator that can generate electricity. The system is new modification of the wind ventilator system is by adding the extra fins to help it to spin faster and more efficiently. Optimize design and performance of the system also discussed. Wind ventilation system is suitable to use for the low speed wind places. This system is containing the combination of the AC generator, wind ventilator, batteries and inverter. This system is also used with combination of wind ventilator and solar system. In wind ventilator system managed to produce 13 Vdc to 14 Vdc to charge the 12 Vdc batteries system. The operational concept of the system is the load will use the energy from the batteries that charged using wind ventilator. The observed performances of system are the voltage and current of the wind ventilator, batteries and the load.

**Key Words:** wind ventilator, wind energy, dynamo, battery, etc.

## 1. INTRODUCTION

Now a day the generation of electricity is more costly because of insufficient primary material like as coal, oil, etc. Hence to generate the electricity used in wind ventilator. The main function of free spinning wind ventilation is to provide fresh air in atmosphere and living area all year round 24 hours in one day in free of cost and it does not hazard to the environment. The extra function is produce electric energy from wind ventilator.

The wind ventilator capture the wind kinetic energy in a rotor consisting of one or many blades mechanically coupled to a generator. The ventilator is mounted on a buildings, workshop, institute, etc. to enhance the energy capture. The vertical-axis machine has been the standard in Denmark from the beginning of the wind power industry. Hence is called as Danish wind ventilator. The vertical-axis machine has the shape of a circular. It is used in the past because of its specific structural advantage. However, most modern wind turbines use a vertical-axis design.

The buildings, workshop allows access to stronger wind in sites with wind shear and placement on uneven land or in offshore locations and most of them are self-starting. At this time, it can be cheaper because of higher production volume. The disadvantages are it has difficulties operating near the

ground and with turbulent winds because the blade bearing need smoother, more laminar wind flows. The wind ventilators blades are easily need a special installation procedure. It also has relatively cost of production, installation and transport compared to wind turbine. The turbines does not need to be pointed into the wind to be effective.

## 1.2 Objectives

1. To develop roof ventilator with DC generator for electricity generation.
2. The wind ventilation in barns is to replace impure air of respiratory products of combustion, and fumes arising from fluid and solid excreta, refuge, etc., with dust free pure and fresh air from outside.

## 2. Wind Ventilator

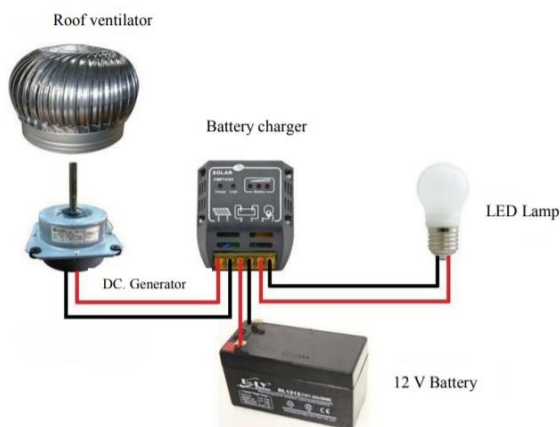
In this paper is interested to the second type that comprise of stationary part and rotational part. Stationary part is composed of base and fixed shaft and rotational part is composed of fan blades and bush that put on the fixed shaft on stationary part. In this system the principle of wind ventilator, when the air flow on the top of wind or the heat air that lifting to under the wind , it turns the wind ventilator. Ventilation rate is up to the speed and the size of wind ventilator. Figure 2.1 shows the construction of wind ventilator.



Fig 2.1 construction of wind ventilator

## 2.1 Methodology

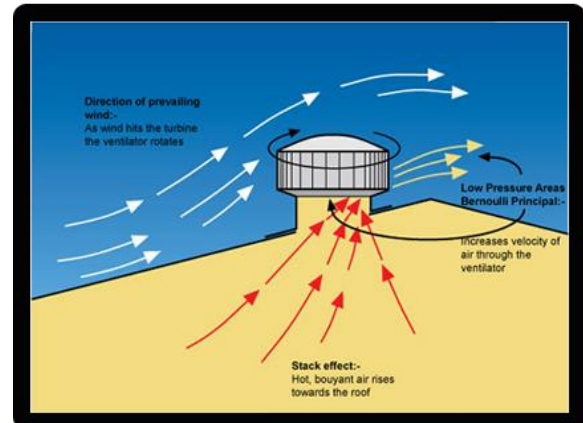
To design the air wind ventilation ball to generate the electric current, the concept was designed to modify the ventilated ball with the diameter 24 inches to install the 18 watts DC generator. This is the process and cheap expense is considered, and the DC generator will also not close the ventilated holes. For the purposes of the DC generator is connected to ventilated ball and also connects to external battery charger to supply the electric current for Light Emitting Diode (LED) lamp as shown in Figure 2.2.



## 2. WORKING OF WIND POWER

The vertical Wind Power is a turbine which has a rotating blade and installed in vertically. It is designed such a manner so that is easily be mounted a platform. It can be installed near to the ground there is no need to build a high tower. It is easily catch the wind regardless of the winds direction. Vertical Wind Power it is type of wind power usually utilized in the urban and rural areas. This machine can be installed in a location closer to the ground and since it's vertically positioned, there is no need to point to blades the winds direction. Vertical wind generators produce electricity using the same principles as that of an ordinary and standard wind power generator. The blade is rotate when the wind blows by it. As soon as the blades start rotating, it will generate electricity which is stored to the battery for your daily consumption.

The concept of behind wind ventilator is that the turning blades will help force air out of the attic. Hot air is naturally rises, so its attic air is heated above the ambient air temperature a vent will allow the less dense hot air to atmosphere. Commercial uses of wind ventilator often connect to large underside and are used to draw things such as smoke out of a building, workshop, institute etc. A domestic ventilator does not have this fan. A problem often city area with typical ridge vents is that they stop the rise of this hot air with the inverted V that sits on top of the vent to atmosphere.



## 3. CONCLUSIONS

- Induced voltage from generator is directly proportional to the speed of wind ventilator. In case of practical installation on the wind ventilator, voltage is induced lower than the measurement in laboratory because of wind changing.
- In this study of adapt the air ventilation ball to generate the electric current. It has been to study the probability to use the small DC electric generator to install the ball by adapting, adding the element for electric current with least effect of the movement of the ventilation balls.

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