

# ELECTRIC POWER GENERATION BY EXPLOITATION ROOF HIGH VENTILATOR (NATURALLY DRIVEN)

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**Abstract:** Wind energy is one among renewable energy and it doesn't cause pollution. Therefore, presently, there's the technological development of applying wind energy for the electricity generation. Wind energy is employed to switch fossil energy like oil and coal, inflicting environmental pollution. This paper presents the electrical power generation by exploitation upper side rotary engine Ventilator (R.T.V). upper side ventilators (RTV) usually used for ventilation purpose, is wont to extract alternative energy by fitly coming up with a generator to couple with it. Upper side Ventilators don't consume any power for its operating. The paper discusses the event of an influence generation system employing a typical RTV.

**Keyword-** Renewable Energy, Roof Ventilator, Turbine, DC Generator

## I. INTRODUCTION

We all know that day by day the demand of electricity in India is increasing. to satisfy that demand, the assorted renewable and non-renewable energy sources square measure wont to generate electricity and meet the demand. alternative Hand by exploitation standard energy sources the pollution is increasing and this impact the worldwide warming. the traditional energy sources square measure destructible energy sources. All countries became fascinated by the renewable energy sources. The solar, wind, water, ocean waves will play necessary role in production of electricity. however some issues arise within the development of energy power generation like, high construction value, difficulties in maintenance, house for plant installation and power distribution. Therefore, in India begin to develop a small power plant to boost such issues [1]. The India is within the tropics. there's high wetness and heat weather gift all told of year. Specially march, April, may. The day time temperature could {also be} is also {increasing to 420C or the common temperature in India is (320 -400) in most of interior [1] thus this increasing temperature is affect's on the employee to figure in varied and this effect's on the work potency of employee and also on productivity of company. owing to high intensity of daylight and high temperature the ventilation is critical in workshop's, industries or mill building. Therefore, the upper side ventilators square measure used for ventilation purpose as a result of this ventilator square measure work on while not exploitation electrical energy. This technology is popularly put in on the roof in workshop's, industrial buildings, ware

homes and additionally in residences. [Figure.1] the most operate of this ventilator is that once the air flow on the highest of roof or the recent air that lifting beneath the roof that known as ventilator. The ventilator sucks the recent air from building and thru outside the building and maintain the building temperature. The another operate of roof high ventilator is to convert wind's mechanical energy to voltage

## II. CONSTRUCTIONAL DETAILS

### A. Roof Ventilator

A. upper side rotary engine VENTILATOR Wind turbo ventilator could be a wind driven ventilator that's put in on the roof of building to supply effective ventilation. it's use all told styles of industries, workshops, warehouse. The air ventilation works on the easy principle of wind assisted rotation and stack impact. the most operate of the free spinning is to supply recent air in roof house and living space. Air square measure free around twenty four hours of daily on all year. the extra operate of this product is to provide the voltage from the roof ventilator that may spin the wind is exist. Roof ventilators have 2 sorts



Fig. . Roof Ventilator

- Roof ventilator with motor driven
- Roof ventilator with natural air driven

In this paper second sort is most well-liked. Roof ventilator incorporates stationary half and move half. The stationary half consists of base fastened and stuck shaft and move half consists of fan blades and bush placed on the fixed shaft on stationary half. There square measure 2 rotating principles of the ventilator. the primary principle is hydromechanics that may air flow warm temperature space

to temperature space to inspire blades to rotate. in this time once

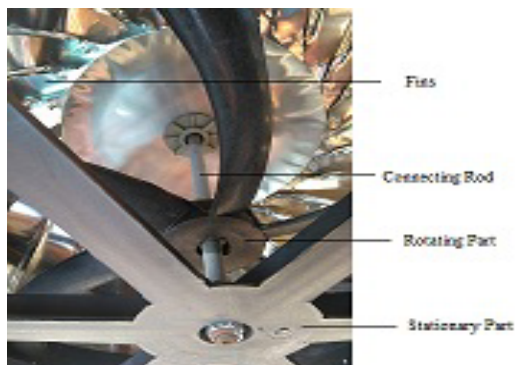


Fig. Inside view of Roof Ventilator

the rotary engine square measure rotates the warm temperature air are going to be discharged from space|thespace|the area} therefore the air density within the room is reduced, then the outside cold air enters within the space to attain the goal.

### B. GENERATOR

It works on the principle of magnetic force induction. This methodology of excitation consists of a smaller electrical



energy (DC) generator mounted on constant shaft with the Fig.DC Generator

generator. The DC generator generates a little quantity of electricity simply enough to excite the sphere coils of the connected generator to get electricity.

### C. BATTERY

It's a storing device. Batteries convert energy on to voltage. electric battery consists of some range of voltaic cells. every cell consists of 2 half-cells connected serial by a semiconducting solution containing anions and cations. Cations square measure reduced (electrons square measure added) at the cathode throughout charging, whereas anions square measure alter (electrons square measure removed) at the anode throughout charging. throughout discharge, the method is reversed. The electrodes don't bit one another, however square measure electrically connected by the solution.

### D.PULLEY

It is a wheel like device that connects the rotating part of



Roof Ventilator and DC Generator.

Fig Pulley

### E. LED BULB

Semiconductor diode (LED) could be a semiconductor light that emits lightweight once current flows through it. Electrons within the semiconductor recombine with negatron holes, emotional energy within the type of photons.

### III. WORKING

The roof ventilation fan applies the idea of convection between natural wind and air to accelerate and transform any parallel flowing into vertical thus on improve the indoor ventilation. the new air rises and cold air falls, which build the fan rotate. that the indoor heat, stink and mud are exhausted effectively. It can also effectively take away indoor soot, smoke, odor, moisture, heat, ornamental harmful gas, dust, human metabolism and different dirty volatile mixed odor furthermore as viruses and microorganism invasion. As a result, it improves the operating surroundings, protects workers' health and enhances the operating potency. It is widely employed in warehouse, toilet, factory, workshop, stadium, court game hall, auditorium, garage, paper mill, and galvanization works and coating issue. all the elements of windmill like prime cowl, wind blade.

### IV. RESULTS

In this project, energy generation is directly proportional to speed of system. As the speed of system increases system voltage also increases. Voltage is the parameter that is dependent of speed.

| Sr. No | Speed (RPM) | Voltage (V) |
|--------|-------------|-------------|
| 1      | 60          | 1.87        |
| 2      | 80          | 2.1         |
| 3      | 100         | 2.4         |
| 4      | 200         | 4.4         |

Roof Ventilator,” *Energy Procedia*, Vol. 9, 2011, pp. 147-158. <http://dx.doi.org/10.1016/j.egypro.2011.09.016>

## V. CONCLUSION

The upper side ventilator generate electricity from the wind energy. this method additionally remains the most operate that is to supply air ventilation in house or factories. The low speed of the DC generator is one among the most factors to create this method perform within the right condition. It will turn out up to 12V at the five hundred rate speed. The system produce to charge the 20V dc batteries system within the sensible and economical condition. Voltage from generator is directly proportional to the speed of roof ventilator. just in case of installation on the roof, voltage is iatrogenic under the measure in laboratory owing to wind speed dynamic.

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