

Mini Wind Mill Turbine

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Submitted: 01-06-2021

Revised: 14-06-2021

Accepted: 16-06-2021

ABSTRACT: This research paper is about to mini wind mill turbine. In this research paper we are generate electricity using a wind mill. But this wind mill is not a actual wind mill it is a mini form of wind mill we make this wind mill using p.v.c pipe and using a D.C motor to generate electricity and using a ammeter we measuring the amount of electricity. This research is helpful for us and our society with this research. we also build these mini wind mills (in larger size) in local cities so the mini cities generate electricity for ourself.

KEYWORDS:

- 4 elbows
- 4 T's
- 38cm p.v.c pipe
- 1 D.C motor
- 15cm wire
- 1 ammeter
- 1 mini bulb
- 1 mini turbine blade
- 1 mini battery

I. INTRODUCTION:

Here we are making a mini wind turbine. with the help of this mini wind turbine, we are making electricity using wind and observing the amount of current using ammeter.

We are using p.v.c pipe for making this wind turbine. Next, we are discussing about the components of this mini wind turbine. 4 elbows, 4 T's, 38cm p.v.c pipe, 1 D.C motor, 15cm wire, 1 ammeter, 1 mini bulb 1 mini turbine blade, 1 mini battery..

CONSTRUCTION & WORKING:

With the help of 4 elbows and 3 t's we are making base of the turbine And after that using 1t

and some p.v.c pipe we are making the tower, And then we are making the power house of the wind turbine after that we fix the rotating blade of the mini wind turbine. and we are connecting all the electrical connections as well. & the second feature of the mini wind turbine is a mini fan when we create electricity and save in a battery, we use this saved energy in the mini wind turbine to rotates the blade then the mini wind turbine turns in to mini fan.

When we applying air pressure on the mini wind turbine it rotates and when the blades are rotates the generator generates the electricity travel through the connecting electrical wire then the generated electricity is saved by us using batteries for further use.

USE AND BENEFITS:

1. Wind power is cost effective. (one of the lowest priced energy source).
2. It's a clean source of energy.
3. Wind is a domestic source of energy.
4. Its sustainable.
5. Wind turbine can be built on existing farms or ranches

Advantages:

- It generates more power
- It is not necessary connect the same generator and also connect different generator in serious shaft
- We will use all type of generators like permanent magnet D.C. generator, synchronous generator and induction generator
- Gear box is not used, only two straight bevel or spiral bevel gear is used (driver and driven gear)
- The power output is double compare to single windmill.

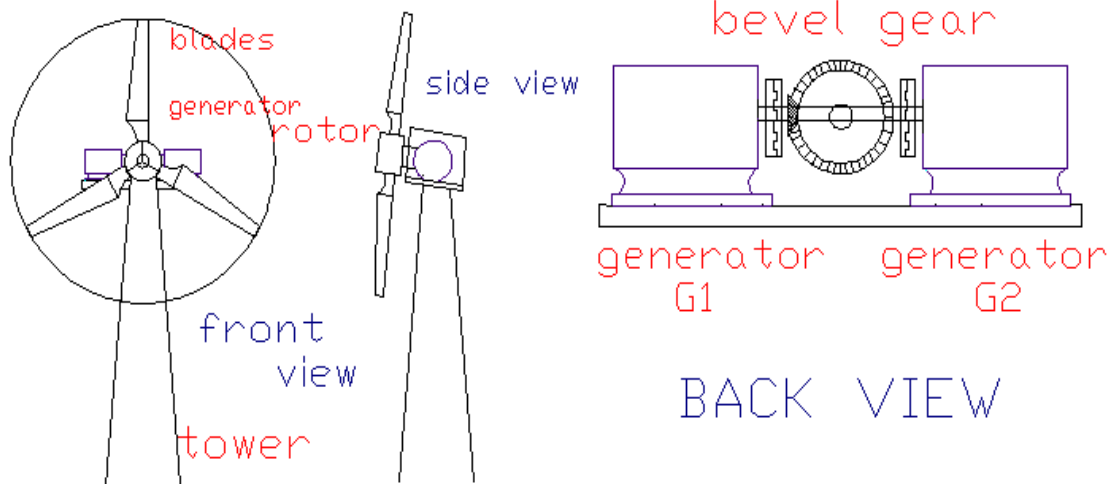
Wind energy is very precious for us.



For Horizontal blade wind turbine, the main parts are follows below:

- Blades and rotor,

- Electromagnetic Induction Generator (2Qty),
- Gears (straight bevel gear mechanism),
- Shaft.



The blades are attached with rotor by using bolt and nut. The rotor connected with gear through shaft and balance by bearing. The gear box consists of driver and driven gear. The driven gear teeth are mesh with driver gear. The one end of the

low speed shaft is connected with driver gear and other end is connected with rotor turbine of the windmill. The long high speed shaft is connected at the center of the driven gear. The both end of the

shaft is connected with two same or different

Blades and Rotor:

The blades are basically the sails of the system; in their simplest form, they act as barriers to the wind (more modern blade designs go beyond the barrier method). When the wind forces the blades to move, it has transferred some of its energy to the rotor. They are two types of blades as follows: Horizontal and Vertical blades. Then rotor which converts the energy in the wind to rotational shaft energy.

Limitations:

- Initial cost is high
- Efficiency low .
- Maintenance is important and high
- Design is complement for gear and rotor turbine
- It require lot of space

II. CONCLUSIONS:

high power produced by single rotor which is the double of the one set of DC generator and

generator through coupling.

rotor. In this research we are able to produce energy for our self in the little villages and small towns and cities. This paper presents a new methodology for power generation using two same generators of single rotor, further advantage of the method is cost efficient and generating high power with a same torque. Theoretical analysis and experimental work is carried out confirm validity of the analytical work. we conclude that high power produced by single rotor which is the double of the one set of DC generator and rotor. Wind is an inexhaustible natural energy source that humans have used in one way or another for millennia. A great many wind farms with large numbers of wind turbines have been constructed in recent years around the world, and offshore wind farms are now becoming popular, particularly in Europe. Yokogawa provides a variety of measurement and control technologies that help to ensure the stable power supply by making operations more efficient and by enabling remote and centralized monitoring of multiple wind power generation systems.



