

WIND MILL MOBILE CHARGER FOR TWO WHEELER/FOUR WHEELER

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ABSTRACT

Wind power has evolved into a significant renewable energy source which continues to grow rapidly. The output a wind turbine fluctuates as well, depending on the relationship between wind speed and wind turbine output power. Using wind energy we are charging a cell phone inside four wheeler or two wheeler vehicles.

KEYWORDS: Turbine, pollution, vehicles, mobiles charger, electricity

INTRODUCTION

A renewable energy source is defined as any energy source that comes from natural resources that can be continuously renewed, leaving no worry a running out.

A lot of countries today are generally adopting renewable energy as the threat of global warming worsens with renewable energy there is no dangers of releasing harmful chemicals to the atmosphere since nearly all of them do not have harmful waste products during energy conversion.

There a currently 5 popular kinds of renewable energy sources for power generation wind, solar, biomass, hydropower and geothermal energy. Among these 5 winds power has been one that is growing fastest. There are various versions why wind power is the renewable energy resources that many countries are developing. There is one basic reason why wind and solar are the two most popular renewable energy resources wind and sunlight can be found nearly energy where. There are two catches why wind power is much better though.

First, sunlight can only be gathered half of the time, second sunlight can't be gathered during bad weather conditions.

The main advantage wind power has over biomass is that it does not emit harmful gases during conversion.

Hydropower generator electricity through that use of falling water's gravitational force It is the most widely used renewable energy resource for good reasons. It does not produce any direct waste like carbon dioxide and dams have a variety of uses besides electricity generation such as flood control.

Geothermal energy is heat energy stored in the earth. It is great source of energy since it is renewable and cost effective It also does not create any pollution so it helps slow down climate change.

In recent years wind energy is predicted to continue it is the development of large wind parks offshore. This is largely enabled by the increased site of wind turbines but is also caused by difficulties in planning new wind park projects onshore. The increased site of wind power project and the development of large offshore wind parks bring about a number of opportunities on the one hand and challenges on the other opportunities include larger power and energy output and improved technical capabilities.

A wind mill is designed to turn wine energy into mechanical energy after which me can convert mechanical energy into electric power. To design a wind will need as numbers of components as follows-

1. **Blades-** wind mill can be design with different number of blades.
2. **Tower-** The tower is designed to have the blades and rotator with off the ground so the blades can catch the maximum amount of wind.
3. **Shaft-** The shaft is connected to the blades and the rotator for smooth operation.

4. **Generator-** The generator is the device which turns the mechanical energy into electric power to run our electric appliances.
 5. **Base-** The base is the platform for mounting the tower on and keeping it secure.
- Horizontal wind mill, firstly a sample projection of project was constructed using solid works 2008 for the projection of the projects: that is as follows shown in figure 1

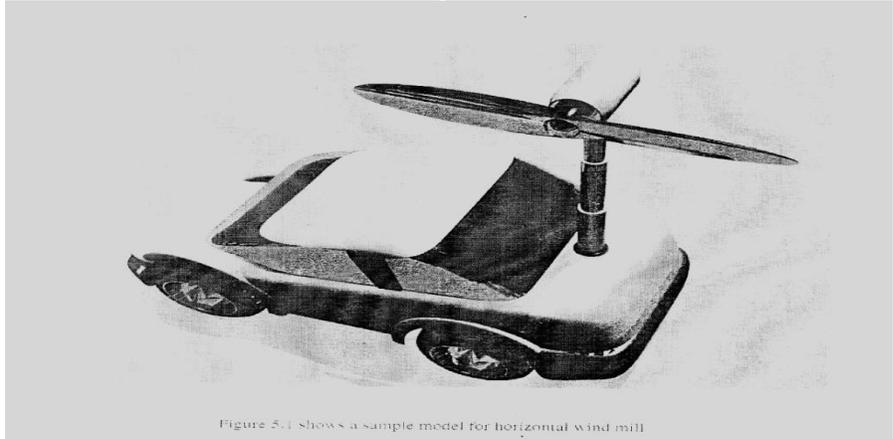


Figure 5.1 shows a sample model for horizontal wind mill

fig.1

PERFORMANCE CALCULATION AND RESULTS WITH RESPECT TO SIZE

After getting a proper model we have to assemble this with a battery charger or a energy storage device for further use to do so we just assemble the vertical turbine with a universal charger of specification 100-240v, 50-60Hz frequency with a load of 180mA and output Dc. 5.7v/800mA and battery of lithium ion 3.7v.950mA was connected to get the result as shown in figure

Circuit diagram:

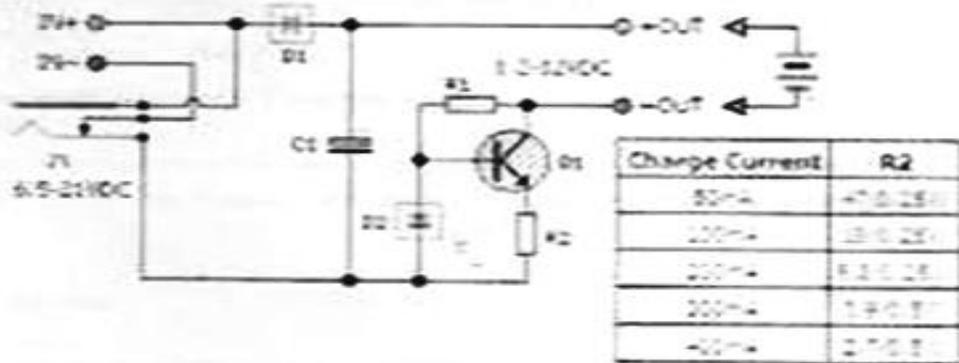


Figure shows a universal charger with different load

Fig.2

POWER IN THE WIND

The importance of accurate wind speed data becomes clear when one understands how the speed affects the power. Consider a disk of area A with an air mass dm flowing through that area. In a time dt the mass will move a distance U dt, creating a cylinder of volume A U dt which has mass dm= A ρ U dt, where ρ is the density of air. The power contained in the moving mass is the time rate of change in kinetic energy, given by

Tip speed ratio (TSR) $\lambda = \text{Tip speed of blade} / \text{wind speed}$

$$P=d(KE) dt= (1mU) dt= Udm I dt=A?$$

Therefore, the power is proportional to the wind speed cubed. It is important to know the wind speed precisely, because any error is magnified when calculating power.

Determining Tip Speed: (Circumference = 53.4 inches)

| Fan setting | RPM | inches/min | Feet/min | Mile/min | Mph |
|-------------|------|------------|----------|----------|-------|
| Fast | 750 | 450053.3 | 3337.9 | 0.632 | 37.93 |
| Medium | 520 | 27771.7 | 2314.3 | 0.438 | 26.30 |
| Slow | 380 | 20294.7 | 1691.2 | 0.320 | 19.22 |
| Theoretical | 1500 | 80110.3 | 5675.9 | 1.264 | 75.86 |

5.9 SUMMERY AND CONCLUSION

Depending on the use, you need to assess the situation completely whether to set up a HAWT or VAWT. Each of the two types has specific advantages over each other and it's up to our which one would be better. An overview of the impacts of various factors on wind mill system A model theory and analysis of load, stress and fatigue, power control in dynamic braking system and various models of factor effecting the model like wind height and relative velocity have been studied.

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