Ac wind generator

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In 1831-32 Michael Faraday discovered that an electrical current is created by moving a conduit like copper wire through a magnetic field. You can create a continuous flow of electrons or current by moving a coil of wire through a magnetic field continuously.

The alternators used in turbines have solid state magnets in them (which means they have a steady/static magnetic field), but the alternators in cars have electromagnets in them (which have a magnetic field that varies by how much electricity you put in them). This means automobile alternators need power to generate power. Auto manufacturers do this, so that they can turn on or off the alternator as needed, to prevent the battery from overcharging and to control the amount of electricity being generated.

This is done using a voltage regulator. Although some modern automobile alternators come with external voltage regulators, most come with internal ones. Either way they won"t work for a wind turbine without some modification.

In addition to that, the rotations per minute (RPM) required to generate a good current is higher than RPM an average turbine can create. In order to make it work, you would need to add gearing and pulleys which would create friction and loss of efficiency.

I’m not going to say that you can’t use a vehicle alternator for your windmill, but I will say that it is going to require some modification. MrTeslonian has a couple of informative videos on how he converted an automobile alternator or created a generator for use in a turbine. Unfortunately, he didn’t show his finished product or how well it worked.

If you would like something with a little less custom tooling. Jeff here shows you how to do it with parts he sells at Missouri Wind and Solar. He sells rotors with permanent magnets pre-installed.

You can buy the rotor here or here and you can buy the stator here. But for those prices, you may just want to buy one of these generators: Freedom Hydro, Freedom, Freedom II Hydro or the Freedom II. (I am not affiliated with Missouri Wind and Solar in anyway and do not earn commissions from them)

Unlike automobile alternators, ceiling fan motors have a static center of wire coils or windings. This center is called the stator. When electrons flow through these coils they create a magnetic field. A circular rotor on the outside reacts to the magnetic field and rotates along with your fan blades. This circular rotor is a series of steel plates organized in a specific geometric fashion, so they will react to the magnetic field created by the stator and spin.

Ceiling fan motors are easier to convert than automobile alternators because of the static coils. In order to

convert this to a generator you just replace the steel rotor with a set of permanent magnets. When I get some free time I"m going to try this. Here, Scott Brown gives a pretty good demonstration of how to do it.