Nordic Folkecenter for Renewable Energy

Do it Yourself Wind Turbine

Have a desire in generating clean electricity? Are you eager to harness the wind power? Household wind turbine is too expensive? In this report, we will guide you with pictures for making your own Wind Turbine! Believe it or not, what you need are just simple tools and materials. The table below shows the major required tools and materials:

Materials	**Tools**
Generator	Clamp
Wire	Pen
PVC Pipe	Protractor
Tail	Drill
Screws	Drill Bits
Bolts	Pipe Wrench
Stiff Wood	Screwdriver
Steel	Cutter

1. Blades

Cut the PVC tube into 3 blades, (wood or aluminum can also be used). The shape and size of blades have to be consistent. In our case, we copy a referencing blade but one can easily make it without the reference. Blade is the most important part of a wind turbine; it is the major determinant of the windmill's performance.

2. Rotor and Base

The rotor can be round-shaped or triangular, for the sake of simplicity, we make a triangular rotor. As we are making a 3-blades wind turbine, position of the blades on the rotor should be based on 120 degree. This can be done by drawing lines with a protractor. Next, we drill a big holes at the center of the triangular rotor (for generator), then 2 small holes on each line on the rotor and at the bottom of blades respectively. Finally, combine the blades and the rotor with screws and implement the generator.


EPAL


PLAY


DRINK TIL SIK

3. Testify your Wind Turbine

When taking the wind turbine out for a test, please ensure the generator, rotor and blades have been fastened. Connect the generator with a current-meter. Test the turbine in a windy area. If a sufficient current is detected, we can go to the next step.

4. The Base and Tail Vane

With the electrical capability of the turbine ascertained, here we come to the base and tail.

Our base consists of a red disc and wooden rectangle with a triangular ending. The red disc will be connected to the tower, allows the turbine to change direction in order to harness as much wind as possible. Be aware that the turbine has to be well-balanced. In addition, the wooden base should be strong enough to carry the generator and blades.

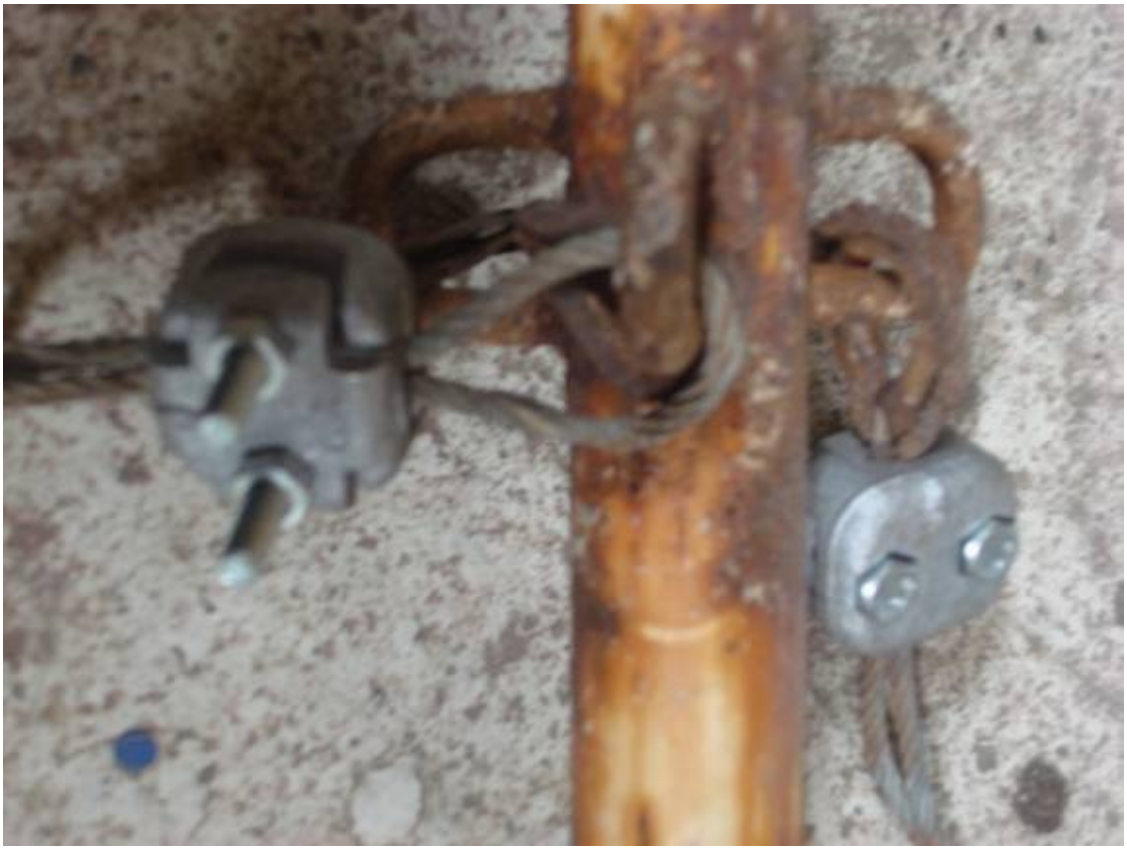
Although our tail vane is a simple wooden triangle, it works well. Please be aware that the tail has to be placed at the very center of the base.

5. Generator

The generator is the heaviest components in most small wind turbine. We fix it with steel on the base as shown in the pictures. It is crucial to fasten the generator tightly otherwise the whole wind turbine can be ruined under extreme weather. Next, we connect the electric wire to the generator, with the blue cable indicating negative while black and red are positive.

6. Tower

For wind turbines of this kind, its tower is normally fixed on a piece of wood with 3 to 4 metal ropes connected to the ground. Please refer to the pictures below.



SUCCESS!

7. Harnessing the wind power

Connect the cable to a battery and a lamp. The lamp lights up as the wind blow. Now you can enjoy the clean electricity.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Conclusion

Having a wind turbine installed at your home is not only simply for electricity supply, most importantly, it helps reducing the CO2 emission and educating your children and neighbors about the renewable energy. So stop waiting and start making your own **NOW.**