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Advanced Multistation Generation Using Non-Conventional Energy Resources

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ABSTRACT

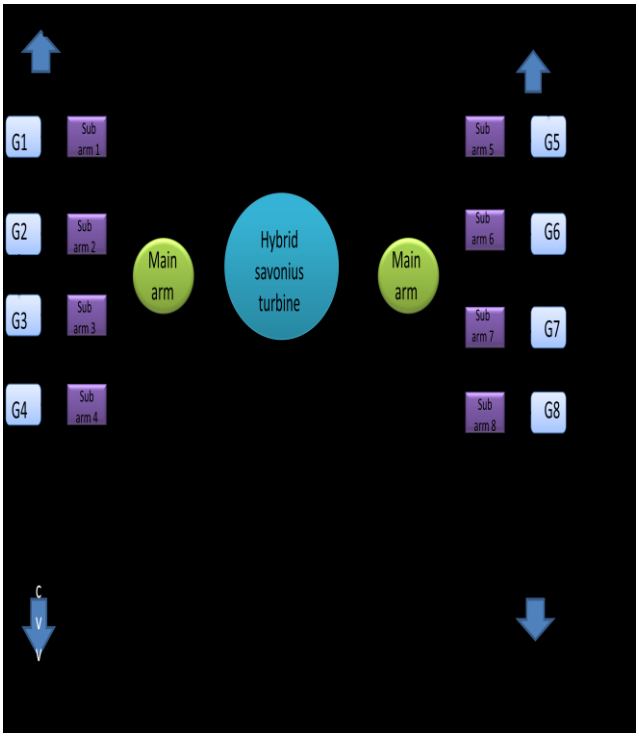
According to generate energy at different stations we used hybrid Savonious Turbine, which can rotate on both wind and water and also the structure of this project have tremendous ability to rotate different generator shaft by coupling them with a single shaft of savonius turbine. This makes the turbine more efficient, theoretically i.e. eight times because we are using eight generators with a single turbine. As other conventional turbines use with a generator with itself each. Moreover this turbine is capable to create more output as well as torque. Sothat we can use it to charge batteries etc. This construction contains 1 Savonius Turbine, 2 main arms, 8 sub arms, 8 moto-generators which are connected to eight different load(we have shown power LEDs as load). As we said that its efficiency is lot more than other turbines like aero turbine, just because of its shape which is simple but cover more air if we say using it for wind source. So the amount of energy generated is large. We can take power from here for industries, domestic use, commercial complexes etc. where the wind or water is in good amount. Hill station would be the Homerun for this project.

I. INTRODUCTION

As everyone known about the world facing problem due to use of non-renewable resources in huge amount. To overcome these problems we have constructed a power station using non-conventional resources.

The main advantages of this project is that it is multi-station generation using eight different generating station. It also becomes the invention which will very useful in country like India where the consumers are in very large number. Second major advantage of this project is that the turbine which we are using here is a hybrid type of turbine which can rotate on multiple resources i.e. wind and water.

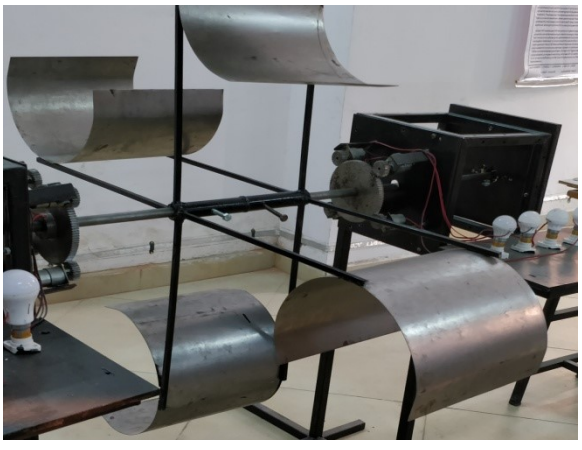
II. BLOCK DIAGRAM



This hybrid turbine consist of major parts as :
1. Hybrid Savonius turbine
2. Large main arms
3. Small sub arms
4. Generators

III. TURBINE

Blades are made up of Mild steel which is more malleable than normal steel thus it can get into various shape without getting breaking and cracking. In according to shape up the turbine blades of a Savonius turbine which looks like “S” in cross section, malleability of the mild steel plays lead role.
Scoops carries more wind and it produces more torque on the turbine shaft. Thus this construction takes lesser wind to produce the same torque. Size of blade id 12.5 width, 6.25 depth.

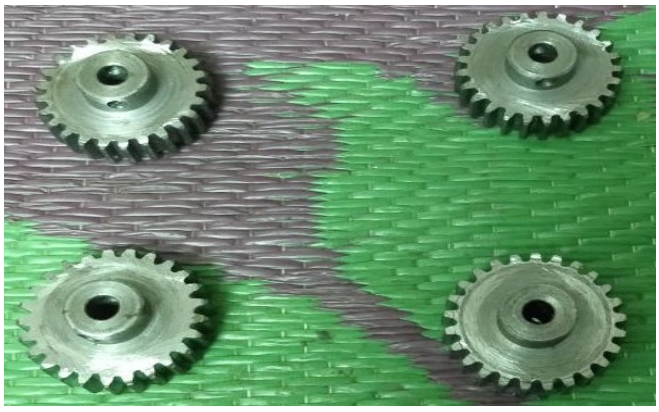


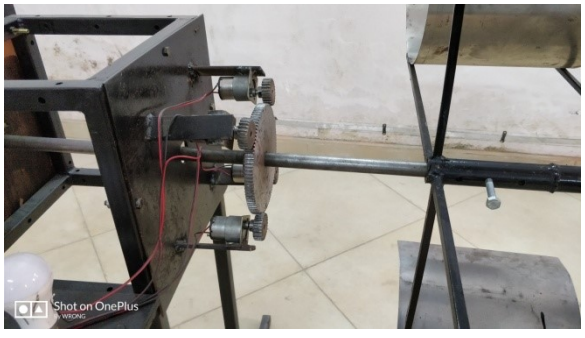
IV. MAIN ARM

Main arms are major moving part after the turbine shaft. Two main arms are used with the main shaft where it is connected with further units. it has 100 teethes which are link with the sub arm teethes, the rotation of main arm is depend upon rotation of main shaft RPM of main arm is more than that of main shaft and less than sub arm.

V. SUB-ARM

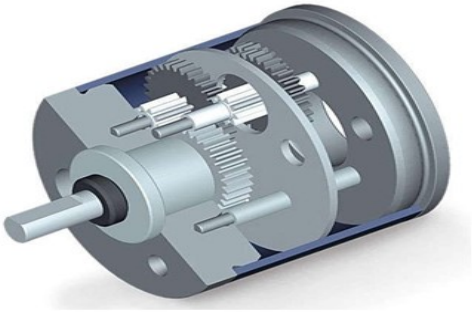
Sub arm are linked with main arm it has 24 teethes which means the rotation of main arm is about four rotation of sub arm. Foursub-arm are linked with each main arm. Size and shape of sub arm is less than main arm. All 8 sub arm are connected to the generator.





VI. GENERATOR

Eight generators are connected to each sub arm respectively. Rotation of main arm rotates sub arm and sub arms rotates generators which are either connected to load or transmission line.
The generators we are using here are geared generator which also have advantages of it converts the less rpm input into large rpm output due to its geared mechanism.



VII. ADVANTAGES

1. Its rotates on multiple natural resources i.e. water and wind.
2. Efficiency is high as compared to other turbines.
3. Long time investments.
4. Pollution free process.
5. Easy construction and operation.

VIII. APPLICATION

1. Industrial purpose.
2. Commercial complex.
3. Domestic use.
4. Hill area where adequate wind and water flow is available.

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