ISSN No: - 2456- 2165

Perpetual Motion with Solar and Wind Energy Hybrid System

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Abstract- This paper deals with optimal design of hybrid solar and wind energy system with perpetual motion. This design gives flexibility in siting new sources of generation of electrical energy. The demand of electrical energy is increasing day by day exponentially so it is necessary to find out new ways of generation at low cost. One more thing is to be consider that the fossil fuels are going to be end so sources should be other than fossil fuels. The substitute of fossil fuels are the renewable energy source. Solar energy and wind energy are two major sources of renewable energy. Also in present scenario waste management have its own importance. The perpetual motion in this system is an example of waste management. The whole system can be used for generating electrical energy without any harm to nature. With the help of this system we can make dependency less on the power system and also make profit by this. The energy generated by perpetual motion machines(PMM) are usually discounted by the scientific community since they are considered impossible at industrial level but for small operations PMM can become very compact machines.

***Index Terms*—perpetual motion, solar energy, charge controller, wind energy**

I. INTRODUCTION

This paper gives alternate method to generate electricity rather than fossil fuels. We know that the population is growing at very rapid speed and hence the electricity demand is also increasing. At present we are dependent on fossil fuels and the fossil fuels are rapidly depleting. So it is an important task to find out alternate methods for generation which are not dependent on fossil fuels. The renewable energy source are the best solution of this problem. Research is going on to find better ways using sun, wind, biomass and geothermal source to generate more sustainable energy. There are many motives for renewable energy which include financial benefits, political and economic sustainability, environment friendly power production, finding solution to deplete conventional energy resources such as fuel and coal.

The most preferred renewable energy source is sun and wind with a great sustainability. In this paper we are using only this two renewable source for generation. Sun and wind are the two most source present which are never going to be end and the generated electricity is green energy. Any type of pollution doesn't occur by these two source. We are making a hybrid system because today, hybrid energy systems has become a focal point to meet the requirements of electric power demand. This infrastructure combines several technologies, and is considered as one of the appropriate options for supplying electricity in remote areas or stand-alone systems, where the electric utility is not available. It is one of the promising methods due to their greater flexibility, high reliability, higher efficiency, and lower costs for the same quantity of energy produced by traditional resources.

The perpetual motion is also added in the hybrid system as a source of electricity generation. The perpetual motion machine is made with the help of waste materials. The perpetual motion practically not possible but we can make motion to last long and with the help of this electricity can be generated. By including perpetual motion we can do waste management which is of great importance.

II. TECHNOLOGY

In proposed system we are using three types of technologies for generating electricity. These technologies in combine form making a hybrid system. This hybrid system contain different type of source for the generation the description about the technologies is given below:-

- Perpetual Motion
- Solar Energy
- Wind Energy

Now we study all these technologies separately so we start with the first technology which is perpetual motion.

A. Perpetual Motion

Perpetual motion can be described as "motion that continues indefinitely without any external source of energy. The machines which works on the concept of perpetual motion is called perpetual motion machines (PMM). In the practical life perpetual motion machines considered impossible because these type of machines are violate the rule of thermodynamics and energy conservation. The rule is extracted below:-

The first law of thermodynamics is the law of conservation of energy. It states that energy is always conserved. It means that energy can be neither created nor destroyed. Instead, it simply

ISSN No: - 2456- 2165

changes from one form to another. To keep a machine moving, the energy applied should stay with the machine without any losses Because of this fact alone, it is impossible to build perpetual motion machines. Thus, machines that extract energy from finite sources will not operate indefinitely, because they are driven by the energy stored in the source, which will eventually be exhausted.

But, we can try to make the perpetual motion machines which motion remains for long time period and by that we can generate electricity. For this we have to understand the types of perpetual motion machines so we can classify the three types of perpetual motion machines:-

1. A perpetual motion machine of the first kind produces work without the input of energy. It thus violates the first law of thermodynamics: the law of conservation of energy.

2. A perpetual motion machine of the second kind is a machine which spontaneously converts thermal energy into mechanical work. When the thermal energy is equivalent to the work done, this does not violate the law of conservation of energy. However, it does violate the more subtle second law of thermodynamics (see also entropy). The signature of a perpetual motion machine of the second kind is that there is only one heat reservoir involved, which is being spontaneously cooled without involving a transfer of heat to a cooler reservoir. This conversion of heat into useful work, without any side effect, is impossible, according to the second law of thermodynamics.

3. A perpetual motion machine of the third kind is usually defined as one that completely eliminates friction and other dissipative forces, to maintain motion forever (due to its mass inertia). (Third in this case refers solely to the position in the above classification scheme, not the third law of thermodynamics.) It is impossible to make such a machine, as dissipation can never be completely eliminated in a mechanical system, no matter how close a system gets to this ideal.

In this paper we considering the first kind of perpetual motion machines for the generation of electric energy hence we are making a system which takes no energy as input and give output for long time period the diagram for that system is given below. In this system we are using a bicycle wheel for the rotational motion. The half fill water bottles are tucked at equal distance on the circumference of the rim of wheel. The motion of water in bottles makes the wheel under rotation. In ideal condition the rotation should remain always but in practical it is not possible because there is a gravitational force which always works on system and in system moving parts are also present due to which friction force is shows its effect and the air friction is also present in atmosphere so due to these reasons the PMM can generate output for long time duration but not for always.

Figure 1:- system for first kind of perpetual motion machine

B. Solar Energy

In the field of renewable energy sun is probably the most important and major source of energy. The energy which coming through sun is called solar energy. The potential of solar energy is maximum on earth in comparison of any other source or energy. The solar energy can be used for generating electrical energy by means of photovoltaic effect. Photovoltaic systems convert solar radiation to electricity via a variety of methods. The most common approach is to use silicon panels, which generate an electrical current when light shines upon it. Solar photovoltaic's are especially valuable for remote rural applications where it would be prohibitively expensive to supply electricity from a utility line.

The Earth receives 174,000 terawatts (TW) of incoming solar radiation (insolation) at the upper atmosphere. Approximately 30% is reflected back to space while the rest is absorbed by clouds, oceans and land masses. The spectrum of solar light at the Earth's surface is mostly spread across the visible and near-infrared ranges with a small part in the near-ultraviolet. Most of the world's population live in areas with insolation levels of 150-300 watts/m², or 3.5-7.0 kWh/m² per day.

In our proposed system we are using solar panels for the generation purpose. The solar panels are of different types present according to their efficiency and size. The classification of solar panels is given below:-

1. *Monocrystalline solar cells:-* Approximately 35% more expensive than equivalent polycrystalline cells, but they have the highest efficiency rating of

ISSN No: - 2456- 2165

between 15-24%.

2. *Polycrystalline solar cells:-* These cells are made from multiple interlocking silicon crystals, hence they are cheaper to produce, & their efficiency is lower than the monocrystalline cells, currently at 13-18%.

3. *Amorphous solar cells:-* These are the cheapest type of solar cell to produce, are relatively new to market and are produced very differently to the two other types. Instead of using crystals, silicone is deposited very thinly on a backing substrate.

4. *Hybrid solar cells:-* This is not a type of solar cell in its own right, instead it is a combination of both amorphous solar cells and monocrystalline solar cells. In addition, they are also better suited in sunnier climes, where temperatures often exceed 250C, creating up to 10% more electricity.

Here our proposed system have capacity to generate 12 volt and 24 watt.

Table-I shows the parameters of photovoltaic module

parameter	**value**
manufacturer	Volta
Voltage at maximum power	12 volt
Current at maximum power	1 amp.
Series resistance	.008 ohm
Shunt resistance	1 k ohm

C. Wind Energy

Wind energy is another most important renewable energy source present on the earth. The potential of wind energy is also comparatively high than other renewable energy sources. Because of difference in temperatures of different places the wind is subjected to flow. The energy generated by the wind pressure is called wind energy. In this system the turbine is subjected to rotate when the pressure of air works on the blades of turbine. And because of the rotation of turbine the conversion of mechanical energy into electrical energy take place.

Wind energy is useful in remote areas where the transmission of electrical energy is not possible by the lines at those place by wind mills the electricity demand can be fulfill.

Number of wind mills are connected in wind farms and wind farm is connected to the transmission network. The power generated by the wind farms is variable because the wind pressure is vary from seasons to season. So we can't fully dependent on wind energy so some other supply source is also connected with the wind system. The wind mills are of the two types the description is given below:-

1. *Horizontal Axis:* - Horizontal axis wind turbines are the most common type used. All of the components (blades, shaft,) are on top of a tall tower, and the blades face into the wind. The shaft is horizontal to the ground. The wind hits the blades of the turbine that are connected to a shaft causing rotation. The shaft has a gear on the end which turns a generator. The generator produces electricity and sends the electricity into the power grid.

2. *Vertical Axis:* - In vertical axis turbines the shaft the blades are connected to is vertical to the ground. All of the main components are close to the ground. Also, the wind turbine itself is near the ground, unlike horizontal where everything is on a tower.

In the proposed system we are making a horizontal axis wind mills for the generation purpose. The wind mill system has maximum capacity 24 watt.

Table-II shows the parameters of wind mill:-

Parameter	**Value**
manufacturer	Robed
Voltage at maximum power	6-18 volt
Current at no load	100 m amp
Current at full load	1900 m amp
Rpm	20 rpm

III. PROPOSED DESIGN OF HYBRID SYSTEM

We are making a hybrid system in which all the three technologies solar energy, wind energy and perpetual motion machine are connected in parallel with each other. The figure 2 given below shows the system connection and design.

In the diagram we can see that all the three sources are connected in parallel. Solar charger circuit is connected with solar panels. The voltage generated by solar panels is not constant because of sun radiation's intensity is variable. The charger circuit make the output voltage constant. The wind mill and perpetual motion machine's output voltage is in arc form so it can't apply to battery directly so we first convert the ac supply into dc supply with the help of rectifier circuit.

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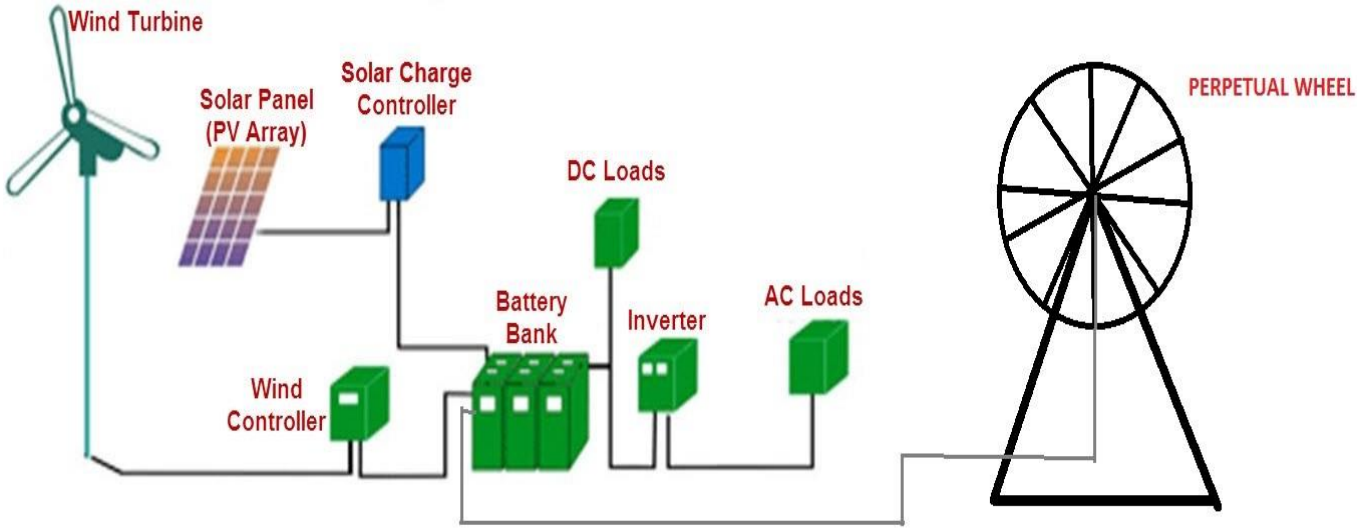

Figure 2:- proposed design for hybrid system including perpetual motion, solar energy and wind energy

The rectifier convert ac supply into dc then we give this deck supply to the controller circuit for making output voltage constant. Then we connect the charger circuit to the battery. The charger circuit is use to charge battery. Then inverter circuit comes in working. The inverter circuit is use to convert dc supply into ac supply. Then this ac supply is being provided to the load circuit. Here we are using inductive load. If we have surplus energy then we can connect the system with the transmission line and sold the surplus amount to utility center and make profit. This system is also helpful in remote areas for fulfilling of load demand. By this system we can make sure that the energy is generated without any harm to nature and make co_2 gas emission very less.

A. Proposed Circuit of Inverter

We are using inverter circuit for the conversion purpose of dc supply into ac supply. Here the inverter circuit is used for 85 watt because our system is capable of generation of total 50 watt power. The circuit is given below:

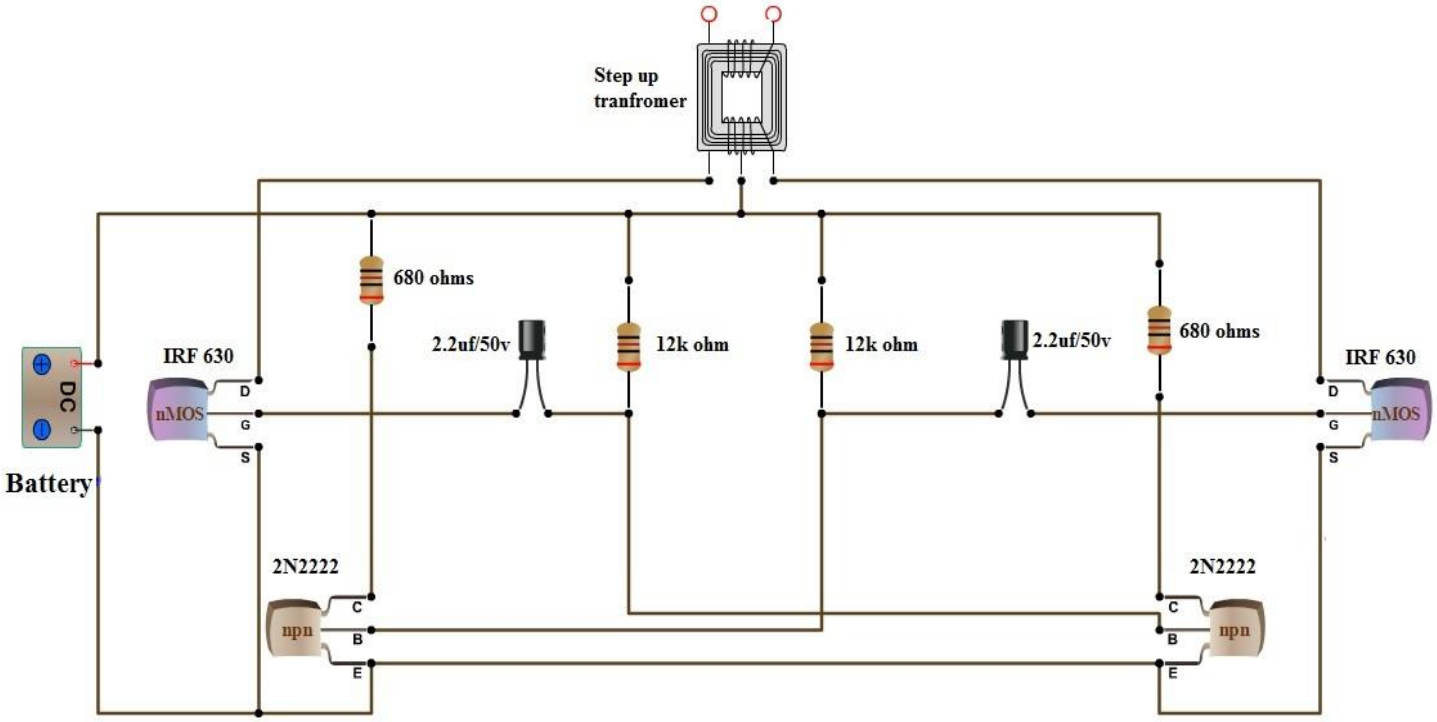

Figure 3:- Proposed Inverter Circuit

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In the figure we can see that here we are using n channel mosfet and n-p-n transistor with the connection of resistance and capacitor. This make an as table multivibrator which is use for generating frequency. We select the value of capacitance and resistance such as the value of frequency will be 50 Hz.

$$Frequency = 1/(0.68*R1*C2) \quad .....(1)$$

And a step up transformer is also used here to step up voltage from 12 volt to 230 volt at 50 Hz frequency. This is the whole system of inverter circuit. The supply to inverter circuit is given by a d.c battery of 12 volt.

IV. ADVANTAGES

- The perpetual motion machine is the least expensive energy source when compared to traditional electricity generation methods.
- The perpetual motion machine does not leave a negative impact on the environment.
- The perpetual motion machine is reliable and sustainable.
- Provide greater flexibility in siting new generation.
- Increase utilization of lowest cost generation by increasing the cost effective enhancement of capacity.
- Can be used in remote area for fulfilling load demand.
- By this system we can utilize the renewable energy which means to reduce co_2 emission.

V. CONCLUSION

In this system we are using three technologies solar energy wind energy and perpetual motion machines for the generation of electric energy. And as output we are generating 10 watt power by perpetual motion machine, 24 watt power with the help of wind energy and 24 watt power with the help of solar energy. So the total output power of proposed system is 58 watt. For small applications this power is more than sufficient and the cost is also cheap of system.

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