NON-CONVENTIONAL ENERGY BASED: GRASS CUTTER

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Abstract: A normal grass cutter moving with IC engine will run based on the energy from petrol. The major drawbacks of this technology are high running cost; create noise pollution and air pollution. Also, an IC engine requires periodic maintenance such as changing the engine oil, mechanical maintenance. It is an innovative technology of cutting grass without any pollution, electric as well as solar grass cutter are environmentally friendly and also arrangement of spread nozzle by using pump.
Key Words: Grass cutter, controller, DC Motor, Rechargeable Battery, spread nozzle, Cre-o software.

INTRODUCTION:
Grass cutter machines have become very popular today. In our project Grass cutter machine we are aimed to develop for operation and construction. The main parts of the Grass cutting machines are DC motor of 900 watt capacity, switch for controlling motor, Battery for charging it through electric power as well as solar panel. The motor have 2300 rpm and it is connected to the electric supply by the use of wire. Also give arrangement for spreading nozzle by using pump. The gardener used hand scissors to cut and maintain lawn regularly which also takes more time.

LITERATURE REVIEW:
1. T. Karthick et. al. [1] In this paper author fabricated grass cutting machine with rotary blades by using solar energy. The solar energy is trapped in the photovoltaic cell to generate electricity. The cells may be grouped in the form of panels or arrays. Solar panel is placed such that to absorb high intensity from sun and it will incline at 450. The main function of solar charger is increased current during batteries are charging and also disconnect when they are fully charged. Circuit's breakers are used to start or stop the motor. By considering ground clearance they can adjust the height of grass
2. Ashish Kumar Chaudhari et. al. [1] In this paper author explained that solar plate which is placed above the grass cutter generates solar energy and use this energy for working controlling speed of motor as per the requirement. Solar panels, batteries, DC motor, solar charger, circuitry and g the grass cutter. Also, using driver circuit for blades these components are used for preparing grass cutter. For preventing battery from overcharging and over discharging regulator is placed into the system and it should be placed in series. They have provided LCD display
3. Vicky Jain et. al. [5] They have prepared wireless grass cutter. There are two main components such as transmitter and receiver. Transmitter continuously transmits the rays if any obstacle come in front of grass cutter then the rays are reflected back towards the receiver. The receiver receive the signals in the serial form encoder but micro the parallel form and then it passed to microcontroller. They have used solar panel so it is not required to charge controller required parallel data for communication so receiver sends data to decoder to convert data in battery externally and battery is continuously charged at constant voltage when grass cutter is in working. The battery is charged in day time by using solar panel and it is stored so we can use grass cutter at night time also. Because of two DC motor both forward and backward motion of grass cutter can simultaneously possible.

COMPARISION:

Existing(Hand Push Trimmer)	Existing(4-Stroke IC Engine)	Modified Grass Cutter
Its work on the Human effort	Its work on the IC engine	Modified Grass cutter is work on the solar as well as Battery power
It is semi-automatic	It is automatic	It is Automatic
These type of grass cutter use only grass cutting in small purpose	These type of grass cutter use only grass cutting in larger than ½ acre.	Modified grass cutter use in grass cutting , spreading , trolley etc.
Output Power - 0.85/6,500 RPM	Output Power – 12.5 HP	Output Power – 900 KW

OBJECTIVE

•Solar energy is a renewable energy, it should be used effectively.

•Controlling of pollution with the use of solar energy which is pollution free and it also helps in controlling the global warming to some extent

•The cost of petroleum products is increasing from day to day. The petroleum is nonrenewable source as we know, so before it gets over we should practice the use of renewable sources.

•The system uses 12V batteries to power the vehicle movement motors as well as the grass cutter motor. We also use a solar panel to charge the battery so that there is no need of charging it externally.

METHODOLOGY:

The Electric Grass cutter machine with Battery Power as well as solar power is used To fulfill the objectives of the proposed idea we need to understand the basic elements of few electronics like Controller, solar panel, charging circuit, rechargeable battery, Sprocket Gear DC motor, cutting blades, Spread nozzle, DC Pump, Store tank. Etc.

CONCLUSION:

1.The output of this project can be improved by increasing reduction of cost, increasing the efficiency of the blades and weight reduction.

2.We can implement with booster circuit and speed control circuit for more reliable and stable operation. If panel used of high watt, then the machine can be used during night time for garden lighting or room lighting.

3.Because we can store more power. And at night time however you keep aside. So the power in the battery can be used for this purpose. Due to the power demand we choose the renewable energy. So there is no running cost.

4. The DC motor is operated in low power with high efficiency

5.There is no sound and noise during cutting operation.

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