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REVIEW ON SOLAR WATER PUMPING SYSTEM

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ABSTRACT

solar energy is one of the most applicable renewable energy source. Because solar energy is the 10,000 times the current annual energy cosumption in all over world. This solar energy system is the less expensive but high output efficiency system. The main objective of this system is that study of the photovolatic gnrators & convertors to use well defined load. The solar power pumping system can be used anywhere but is appropriate in Rural areas where they facing energy crisis. A solar energy service is the almost zero emission process. In now a day for better future of the country this solar energy pumping system used to prevention of fuel. Solar energy is the alternative of grid electricity used by farmers. It is best prevention method for Global warming which is a biggest challenge for humanity in the 21st century. This paper includes Utilization of solar energy for driving a solar water pump.

Keywords: Dc motor, solar energy, solar panel, pump, water tank

I.INTRODUCTION

Solar energy is the light from the sun & hence using various technology implement like Solar Heater, solar Architecture, Artificial Photosynthesis. Solar energy has the longer term benefits. Solar water pumps are used in Western Country or regions with abundant sunlight. in those country implement this system because this is cost effective & dependable method providing water where water resources are spread over long distance [1]. Energy efficiency is played important in future energy policy. Energy models are used in policy making for energy demand this are impact on technology & economic environment of the country.[2]. In water pumping system this method to developed to pump water with minimum effort. [3]. Most of the increasing price of oil based fuel have reduced to margin to be gained by farmers hence food prices have been prevented energy cost[4].

II.COMPONANTS OF THE SYSTEM:

2.1 Photovolatic Panels:

The solar water pumping system is mainly depending on two components the first one is the photovolatic panels & smallest element of solar panel is the solar cell. In that solar cell is two or more layer of semiconductors materials so that produce direct electricity exposed to light. This current directly from the wiring in the panel. Normally rate voltage & current output from pv panels under peak power condition by normally rating of manufactures. With the specified temperature usually 25 C (77F) is the maximum power available from the PV panel at 1000 W/m^2 Individual PV panel is situated in series or parallel to obtain the required voltage or current to run the pump.

2.2 Solar (DC) Water Pump:

Other important part of this system is solar water pump. This pump used to design solar water pump efficiently. Wide ranges size of the pumps are available most pumps are used in live stoke watering yielding 7-15 liters per minute. Most solar pumps are designed to more efficiently which operates on 12-36 volts DC. Most of this system pump is used positive displacement pump, that seal water in cavities & force to upward the water. Centrifugal pumps are used to low lift & high volume system.

2.3 Pump Controller:

The main function of a pump controller in a battery-coupled pumping system is boost the voltage of the battery to match the output. Without a pump controller, the PV panels' operating voltage is dictated by the battery bank and is reduced from levels, which are achieved by operating the pump directly from the solar panels.

2.4 Battery Solar Coupled System:

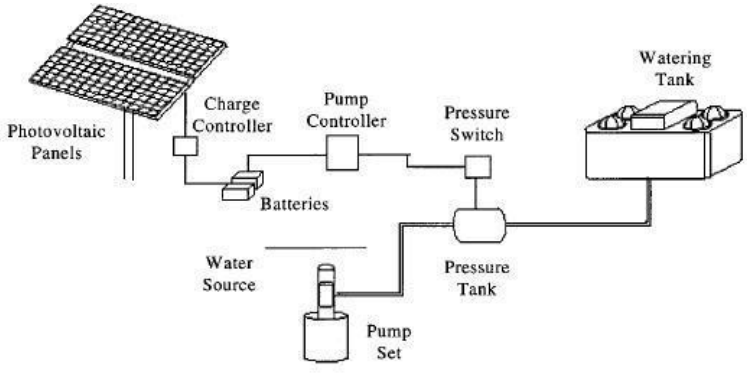

Figure 2: Battery-coupled water-pumping systems.

This system consist of photovolatic panels using Pressure Switch, tank, control regulator, etc. Used this system when sun is not shining power saved in battery.

III. DIRECT COUPLED SOLAR PUMPING SYSTEM

In this system consist electricity is directly sent to the pump. This system designed only day time. This is only depend on sunlight from pump for operating the pump. This pumps works at 100% efficiency with maximum water flow. Efficiency drop is 25% low light condition. This system is to store extra water in sunny days.

3.1 Advantages:

Most important advantage is that this technology is noiseless.

Low maintance because of lack of moving parts.

This is the non polluting technology.

3.2 Application:

Drinking Water Supply.

Village water supply Purpose.

Irrigation Purpose.

Irrigation

Pumping System

IV. CONCLUSION

The output of solar water pumping system depends on accurate size & demand data. Solar power pump can play a significant role in the inadequate supply of electrical energy. Also Photovolatic pumping systemic very good alternate of electricity system. In the 21St century big challenges is the Global Warming for humanity therefore using this renewable energy sources to overcome this problems.

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