

A RESEARCH PAPER ON WATER FILTRATION BY SOLAR AND WIND POWER

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ABSTRACT

This project discuss about the water filtration system , which is operated by solar and wind power. This project works ob the principle of water filtration processes like Reverse Osmosis (RO), UF Filtration, UV Filtration etc. This Process is totally works on green energy i. e. Solar Energy and Wind energy. The WHO reports that 80% diseases are waterborne. Industrialization, discharge of domestic waste, radioactive waste, population growth, excessive use of pesticides, fertilizers and leakage from water tanks are major sources of water pollution.

It is recommended to examine the water quality on regular basis to avoid its destructive effects on human health. Domestic and agriculture waste should not be disposed of without treating. The main aim behind this project is to provide water without impurities and unwanted particles, which is safe for drinking purpose.

Keywords - Solar energy, wind energy, filters, charge controller, battery etc.

I.INTRODUCTION

The world's water consumption rate is doubling every 20 years, out pacing by two times the rate of population growth. The availability of good quality water is on the decline and water demand is on the rise. Worldwide availability of fresh water for industrial needs and human consumption is limited. Various industrial and developmental activities in recent times have resulted in increasing the pollution level and deteriorating the water quality. Water shortages and unreliable water quality are considered major obstacles to achieve sustainable development and improvement in the quality of life. The fundamental aim of our venture has to build up a water filtration by solar and wind , which is sunlight based fuelled. In this system solar panel used to catch and convert solar radiation into electrical energy. Thus is utilised to

Charge two 12V batteries, which then gives the vital energy to the pump.



Solar Panel -

Solar energy is the non-conventional source of energy, it is available at free of cost all over the world. It is non hazardous and non harmful to human beings as well as for environment. It is more convenient in tropical region. Solar energy the energy of photons which has an unlimited life can be utilized for various source of application. Photovoltaic system is one of the most important systems of solar energy. The first silicon semiconductor used P-V module was discovered in U.S.A. in 1954.

Wind Turbine -

Wind is produced from sun oriented vitality by uneven warming of the earth .this uneven warming makes weight distinction in weight in the air, creating wind. As the breeze pushes the sharp edges of turbines, a generator connected to the hub of the pole and when spun makes power that can be send to the lattice an unused in families for power.

In the 21st century, there are more strategies to deliver vitality. Some of them are eco inventing and some of them are contamination causing , keeping in mind the end goal to create vitality by eco well dispose means, the best thought is by utilising sustainable power source . In sustainable power source field area the breeze turbine assume an essential part in vitality creation. The present endeavour manages utilisation of vertical twist turbine to produce the power as type of vitality. A 6 volt step generator were utilised to quantify turbine.

**II.OBJECTIVES**

The objective of Solar and Wind Power Water Filtration System is :

- To remove unwanted particles from water
- Implementation and use of the solar technology.
- Modified the existing technology.
- To prepare cost effective system.

III.METHODOLOGY

The aim of our project is design and develops a renewable energy based water filtration system, which is used to reduce time of filtration. The operations are completed in multistage . These all operations are performed by using the battery and solar power.

The process start with the solar and wind through which the battery will be charge with the help of charge controller. A 10 watt solar panel output is being measured by the multi-meter. The diaphragm pump sucks the intake water which consist of unwanted particles and bacteria. Filters plays an important role after this, the water is being filtering through the filters one by one. A carbon filter is used to remove impurities present inside the water, it starts its process and makes the water safe and drinkable. The filtered water is discharged by the outlet of the filter.



IV.ADVANTAGES

- System maintains is remarkably reduced and becomes easy.
- Renewable energy sources like, sun, wind,. Are utilized so, no waste production.
- Producing clean, friendly to environment, renewable energy.
- Once the system is designed and developed or manufactured, the installation of system is easy.

V.CONCLUSION

Results from the renewable energy analysis were generally disappointing, but do show potential for using wind energy to power the process in areas with Class 4 winds such as the Texas Panhandle. At higher loads, in the 50 kWh-per-day range

As solar energy is being used for the abundant, it can be used everywhere where electricity is not available. Here, the microcontroller which is used also prevents the water from overflowing. Moreover, filtration is a good disinfectant process .This project has only capital cost and almost no running cost.

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