Design Development Hybrid Charging Station for EV/HOME Appliances

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***Abstract*—The demand for electricity power is increasing day by day, which cannot be met with the satisfied level without non-renewable energy resources. Renewable energy sources such as wind, solar are universal and ecological. These renewable energy sources are best options to fulfill the world energy demand, but unpredictable due to natural conditions. The use of the hybrid solar and wind renewable energy system will be the best option for the utilization of these available resources.**

If we combine these two it will help each other to overcome losses. Like when sunshine hour's solar PV systems will generate electricity and wind turbine systems will extract energy from wind sources. When wind conditions are not strong enough to produce power that time it's have backup to fulfill load demand & that will generate from the solar system

Compared to the traditional one-turbine wind-solar hybrid system, a new type of hybrid system—multi-turbine wind-solar hybrid system with eight 50 W turbines on a tower was designed and investigated. Experimental and simulated methods were used to study the power production of the hybrid systems, results show that eight-50 W turbine wind-solar hybrid systems have more power production than the traditional hybrid system, and the reliability of the new hybrid system also improved.

***Index Terms*—Ev Home Appliances.**

I. INTRODUCTION

For the development of any country, energy plays an important role. It is a very essential part of the growth and economy of a country. Our primary source of generating energy is from coal, oil and natural gas. We all know that energy is needed for industrial, agriculture, commercial& domestic purposes. World's energy demand is increasing day by day. There are many sources of generating energy from coal, fossil fuels, oil & other gases. But all these sources are harmful to the environment so there are limitations of using these sources and they are limited.

Hybrid power is combinations between different technologies to produce power. Variability of renewable sources like solar and wind remains a major concern, despite a substantial decrease in the capital cost of their power conversion devices. One of the methods to improve the reliability of power is to combine more than one renewable power source and storage systems together, as per the local renewable potential, which is called Hybrid Renewable Energy System (HRES).

Most of us already know how a solar/wind power generating system works, but all these generating systems have drawbacks of some kind. Solar panels, for example, are expensive to set up, and peak output is not obtained during the night or cloudy days.

Similarly, Wind turbines can't operate safely in high wind speeds, and low wind speeds produce little power.

So if both are combined into one hybrid power generating system the drawbacks can be avoided partially/completely, depending on the control units. As one or more drawbacks can be overcome by the other.

II. OBJECTIVES

1)To develop a hybrid energy system consisting of Solar and Wind energy for electronic device charging.
2) To increase consumption of Renewable sources of energy.
3) The combination of wind and solar has the advantage that the two sources complement each other because the peak operating times for each system occur at different times of the day and year.
4) The power generation of such a hybrid system is more constant and fluctuates less than each of the two component subsystems.
5) To provide a framework for promotion of large grid connected wind-solar PV hybrid systems for optimal & efficient utilization of transmission infrastructure and land, reducing the variability in renewable power regeneration & achieving better grid stability.
6) Instead of charging your phone, tablet, or another device from a wall outlet, you charge it from the

power stored in the portable charger by inserting the charger (or charger cable) into the device that needs

III. NEED FOR PROJECT

Like any human activity, all energy sources have an impact on our environment. Renewable energy is no exception to the rule, and each source has its own trade-offs. However, the advantages over the devastating impacts of fossil fuels are undeniable: from the reduction of water and land use, less air and water pollution, less wildlife and habitat loss, to no or lower greenhouse gas emissions.

In addition, their local and decentralized character as well as technology development generate important benefits for the economy and people.

Renewable energy emits no or low greenhouse gases. That's good for the climate.

The combustion of fossil fuels for energy results in a significant amount of greenhouse gas emissions that contribute to global warming. Most sources of renewable energy result in little to no emissions, even when considering the full life cycle of the technologies.

Renewable energy emits no or low air pollutants. That's better for our health. Worldwide increases in fossil fuel-based road transport, industrial activity, and power generation (as well as the open burning of waste in many cities) contributes to elevated levels of air pollution. In many developing countries, the use of charcoal and fuelwood for heating and cooking also contributes to poor indoor air quality. Particles and other air pollutants from fossil fuels literally asphyxiate cities. According to studies by the World Health Organization, their presence above urban skies is responsible for millions of premature deaths and costs billions.

Renewable energy comes with low costs. That's good for keeping energy prices at affordable levels.

Geopolitical strife and upheavals often come with increasing energy prices and limited access to resources. Since renewable energy is produced locally, it is less affected by geopolitical crisis or price spikes or sudden disruptions in the supply chain.

If you are using Word, use either the Microsoft Equation Editor or the MathType add-on (http://www.mathtype.com) for equations in your paper (Insert | Object | Create New | Microsoft Equation or MathType Equation). ―Float over text‖ should not be selected.

compound units, e.g., ―A·m^2.‖

V. LITERATURE REVIEW

1) .REVIEW ON WIND-SOLAR HYBRID POWER SYSTEM

Sumit Wagh Dr. P.V. Walke this author in the present paper, gives a brief description of the general features of hybrid energy. In this paper, wind and solar hybrid systems have been designed for travelers and remote areas where electricity is not easily available. Since, this charger is based on a non-conventional source of energy and hence, the running cost of this charger is very low.

2) SOLAR POWER OPERATED TABLE FOR CHARGING ELECTRONIC GADGETS

Dinesh KelothKaithari, Amira Khamis Salim Al Ismaili,M. Achuthanthis author gives a brief description of the solar table taking advantage of the sunlight. Solar table will collect all the energy from the sunlight to help the people to charge the electronic gadgets. This will be an eco-friendly solar panel table. The solar table also features recharging connectivity for many electronic gadgets such as laptops and smartphones. The solar panel needs to pull power from the battery which works like source power backup at night.There is a USB port to charge the phone.

3) Wind Turbine Blade Design

Peter J. Schubel, Richard J. Crossley this author gives a detailed review of the current state-of-art for wind turbine blade design, including theoretical maximum efficiency, propulsion, practical efficiency, HAWT blade design, and blade loads. The review provides a complete picture of wind turbine blade design and shows the dominance of modern turbines' almost exclusive use of horizontal axis rotors. The aerodynamic design principles for a modern wind turbine blade are detailed, including blade plan shape/quantity, aerofoil selection and optimal attack angles. A detailed review of design loads on wind turbine blades is offered, describing aerodynamic, gravitational, centrifugal, gyroscopic and operational conditions.

4) Recurrence for the wind tree model

A.Avila& P. HubertIn this paper, we give a geometric criterion ensuring the recurrence of the vertical flow on Z d- covers of compact translation surfaces ($d \geq 2$). We prove that linear flow in the wind tree model is recurrent for every pair of parameters and almost every direction.

VI. REFERANCE

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