POWER SUPPLY SYSTEM OF A PRIVATE FARMING USING WIND TURBINE AND SOLAR PANEL

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A combined energy system is defined as the component combination of two or more types of power generation system. Solar energy system is integrated with wind turbine system to form a hybrid renewable energy system. Since the power output of these renewable energy is ultimately depends on climatic conditions such as temperature, solar irradiance, wind speed and etc., the instability of the system output is compensated by adding a suitable energy storage system to the hybrid energy system. The power autonomy is greatly relied on the perfect balance exist between power demand and generated power. The advantages of renewable energy sources such as hybrid solar wind turbine systems are increased the reliability of the hybrid energy system because it is based on more than one electricity generation source. Besides that, it is a free from the pollution and environmental friendly system, since it does not use any fossil fuel to drive gas turbine for generator. The solar energy also becomes one of the most promising alternatives for conventional energy sources and has been increasingly used to generate electric power from sunshine. Moreover, the hybrid solar wind energy system is suitable to use in remote areas with inaccessible to utility grid. But there is also disadvantage of using hybrid systems such as in most cases the system is over-sized because it contains different types of power generation system. The hybrid solar and wind turbine system can be introduced for the operation in day and night. In daylight hours, solar system can achieve the highest efficiency during the sunny day. Wind turbine able to function during day and night time without any restriction of climate with at least of wind. In order to achieve the highest efficiency for renewable energy systems in whole day, hybrid solar wind turbine system is one of optimum solution to generate the energy in anytime and all weather conditions. Energy in agriculture is important in terms of agro-processing for adding value and are divided into two groups, being direct and indirect. Direct energy is required to perform various tasks related to crop production processes such as land preparation, irrigation, threshing, harvesting, and transportation of agricultural inputs and farm produce. Indirect energy, consists of the energy used in the manufacture, packing and transport of fertilizers, seeds. In addition to obtaining electricity from combined systems, in a private household, renewable energy can be used to: drying crops and grain (solar energy), solar space- and water-heating systems, water pumping (wind energy),etc.

References:

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