Abstract

A sizing algorithm for a photovoltaic water pumping installation composed of photovoltaic panels, battery\-bank, DC/AC converters and a water pump is presented. Considering criteria related to the battery\-bank operation, fulfilling the water volume needed by the crops and ensuring a continuous operation of the pump, the algorithm decides the size of the installation\-components. The installation\-cost using the presented and the basic algorithms are compared. Obtained results confirm that the water demand is covered during the crops\-vegetative cycle with a minimum use of the battery\-bank and minimum cost.

References

hybrid renewable energy systems. Renewable and Sustainable Energy Reviews. (2009), 2111-2118.

Index Terms

Computer Science Algorithms

Keywords

Photovoltaic energy sizing algorithm water pumping.