

## Optimal Operation of a Photovoltaic Induction Motor Drive Water Pumping System

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**Abstract :** The performance characteristics of a photovoltaic induction motor drive water pumping system with and without maximum power tracker is analyzed and presented. The analysis is done through determination and assessment of critical loss components in the system using computer aided design (CAD) tools for optimal operation of the system. The results can be used to formulate a well-calibrated computer aided design package of photovoltaic water pumping systems based on the induction motor drive. The results allow the design engineer to pre-determine the flow rate and efficiency of the system to suit particular application.

**Keywords :** photovoltaic, water pumping, losses, induction motor

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