



Steady-state Modeling and Control of a Microgrid Supplying Irrigation Load in Toshka Area

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Abstract:

This paper is aimed at sizing solar-wind-battery standalone microgrid for supplying irrigation and domestic loads in Toshka area, Toshka, Egypt. Not only the MG system components but also the interconnection cables and feeders are sized. Steady-state power flow through the MG system is analysed at varying sun irradiation and wind speed. Modeling of the MG components and their control of system voltages, currents and powers are investigated. Power flows during different MG operation conditions including absence of wind and sun as well as sudden disconnection of the load are studied

Keywords:

Hybrid Solar-Wind , Irrigation System , Toshka Area , control system , power flow

Published In:

IECON 2012 - 38th Annual Conference on IEEE Industrial Electronics Society , , 6