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Reactive Power Requirement for Operating Wind-Driven Micro Grid in the Presence of Several Proportions and Classes of Static Load

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Abstract

Squirrel Cage Induction Generators (SCIGs) are the most common electro-mechanical energy conversion devices used in wind-driven micro grids. In most of the available studies, researchers have focused on the (i) type of induction generators, (ii) reactive power compensation for induction generator's excitation, (iii) control techniques for voltage control, (iv) method of excitation using FACTS device, etc. In this paper, the authors tried to identify the effect of load rating as well as characteristics on reactive power demand in the presence of SCIG. It has been verified how the reactive power requirement for SCIG depends upon the proportions and classes of static load connected with it. Fixed Capacitor as static compensator is fulfilling the demand of reactive power for the system analyzed in this paper.

Keywords

Squirrel cage induction generator Static compensator Static load
ZIP and exponential load mode Reactive power compensation

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