

Renewable Integration Algorithm to Compensate Photovoltaic Power Using Battery Energy Storage System

Authors : Hyung Joo Lee, Jin Young Choi, Gun Soo Park, Kyo Sun Oh, Dong Jun Won

Abstract : The fluctuation of the output of the renewable generator caused by weather conditions must be mitigated because it imposes strain on the system and adversely affects power quality. In this paper, we focus on mitigating the output fluctuation of the photovoltaic (PV) using battery energy storage system (BESS). To satisfy tight conditions of system, proposed algorithm is developed. This algorithm focuses on adjusting the integrated output curve considering state of capacity (SOC) of the battery. In this paper, the simulation model is PSCAD / EMTDC software. SOC of the battery and the overall output curve are shown using the simulation results. We also considered losses and battery efficiency.

Keywords : photovoltaic generation, battery energy storage system, renewable integration, power smoothing

Conference Title : ICRESA 2017 : International Conference on Renewable Energy Systems and Applications

Conference Location : Paris, France

Conference Dates : June 25-26, 2017