Fuzzy Logic based Coordinated Control of Battery Energy Storage System and Dispatchable Distributed Generation for Microgrid - DTU Orbit (10/02/2019)

Fuzzy Logic based Coordinated Control of Battery Energy Storage System and Dispatchable Distributed Generation for Microgrid

Microgrid is an efficient solution to integrate renewable energy sources (RES) into power systems. In order to deal with the intermittent characteristics of the renewable energy based distributed generation (DG) units, a fuzzy-logic based coordinated control strategy of the battery energy storage system (BESS) and dispatchable DG units is proposed in this paper for the microgrid management system (MMS). In the proposed coordinated control strategy, the BESS is used to mitigate the active power exchange at the point of common coupling of the microgrid for the grid-connected operation, and is used for the frequency control for the island operation. The effectiveness of the proposed control strategy was verified by case studies using DlgSILENT/PowerFactory.