

عنوان مقاله:

Proposing an optimization scheme for energy planning in a residential grid-connected micro grid by battery energy storage system

محل انتشار:

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خلاصه مقاله:

This paper proposes a control scheme which minimizes the operating cost of a grid connected micro-grid supplemented by battery energy storage system (BESS). What distinguishes approach presented here from conventional strategies is that not only the price of electricity is considered in the formulation of the total operating cost but an additional item that takes into account inevitable battery degradation. The speed of degradation depends on battery technology and its mission profile and this effect demands for eventual replacement of the stack. Therefore it can be mapped in additional operating cost. By modeling battery degradation as a function of depth of discharge (DoD) and discharge rate and translating incremental loss of capacity in each cycle into associated cost, objective function has been defined and solved using GAMS. Simulation results are presented to verify the proposed approach

کلمات کلیدی:

Energy management, battery energy storage system, DC micro-grid, economic dispatch

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