عنوان مقاله:

Day-Ahead Scheduling of Distributed Energy Resources in MMG Based Reconfigurable Distribution Network

محل انتشار:

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خلاصه مقاله:

The number of challenges, including: depletion of fossil fuel resources, stricter regulations on environmental emissions, lower efficiency, a need to enhance the security and the quality of power supply, emerging technologies of electrical vehicles (EVs) and ever increasing expansion of renewable energy resources (RERs) are the vital drivers to the smart grids (SGs). Micro Grid (MG) as the building blocks of SG structure is envisaged with ever increasing Distributed Energy Resources (DER) e.g. distributed generation (DG) especially RERs, demand response (DR) and EVs with grid-able capability (V2G). By increasing the DERs penetration, distribution network operator (DNO) will need precise scheduling techniques in order to guarantee demand satisfaction in possible lowest costs and accepted reliability level. This paper solves the day-ahead scheduling of Multi-MG (MMG) based reconfigurable distribution networks with high penetration of DERs problem. The genetic algorithm is chosen to minimize the proposed eco - reliability cost function. Moreover, to quantify the influence of different load models, a 33-node distribution network is adopted with a load class mix of residential, industrial and commercial loads. Eventually, the obtained results are .reported which demonstrated the efficiency of the proposed method

کلمات کلیدی:

Multi-Micro Grids; Electrical Vehicle; Demand Response;Renewable Energy Resource; Genetic Algorithm