عنوان مقاله:

Optimal Management of Electric Vehicle Charge Stations with Compressed Air Energy Storage (CAES) in Electric Distribution Systems

محل انتشار:

اولین کنفرانس پیشرفت های اخیر و روندهای آینده در صنعت خودرو (سال: 1399)

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خلاصه مقاله:

Electric vehicle industry has drawn lots of attention in recent years due to the problems with the supply of fossil fuel, environmental pollutions, and developments in manufacturing electric vehicles. This industry has grown increasingly throughout the world. The necessity of building fast-charge stations is one of the main challenges in this industry. Fast-charge stations can make electric vehicles an appealing transportation option for consumers by providing cheaper and faster chargers in comparison with household chargers. Thus, the objective function for optimizing the electric vehicle charge stations in the presence of compressed air energy storage (CAES) is minimizing all costs, which are related to the objective function. This objective function is solved by particle swarm optimization (PSO) optimization algorithm. Simulations are carried out in IEEE 69-bus standard distribution system to provide the results.

The results show a 16% reduction in operating costs of electric vehicle charge stations in the presence of the CAES

کلمات کلیدی:

charge stations, network loss, PSO algorithm, dynamic study, CAES