عنوان مقاله:

Optimal planning of electric vehicle charging in the smart grid considering erosion and power losses in the battery

محل انتشار:

دهمین کنفرانس منطقه ای سیرد (سال: 1401)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

Although the widespread consumption of fossil fuels has brought rapid economic growth in advanced societies, the release of pollutants resulting from the increase of carbon dioxide in the earth's atmosphere has caused consequences such as global warming. One of the new ways to deal with this challenge is the use of electric vehicles. In this paper, a new optimal management model is introduced for electric vehicle charging/discharging, considering the effect of battery erosion and internal resistance modelling. To study the impact of electric vehicles in the distribution network and calculate the value of losses, several scenarios with different penetration percentages are implemented on the IEEE ۳۱-bus distribution network. From the obtained results, it can be concluded that the presented method, taking into account the internal resistance of the battery, can create significant savings by optimizing the exchange of vehicle power with the grid.

کلمات کلیدی: