Planning networked electric vehicles to improve the operation parameters with a fuzzy approach

milad kramati shijani*,abdolreza tvakoli, hossin afrokhte,

Nowadays with power grids approaching toward intelligent power grids, many challenges has been introduced in operating of these systems. as secure, economical and optimal operation of power systems is of great importance. Some of these factors can be named as stability margin and bus voltage deviations of network. In the meantime electric vehicles has an important role in intelligenting the power systems.According to what had been said above, in this thesis the existence and the effects of electrical vehicle on operational parameter has been investigated and the operational parameters of the power system was improved by using optimal distribution of reactive power. Charging and discharging of plug in electrical vehicle was also planned in order to achieve the optimal operation of power system. IEEE 33 bus network was used for this purpose and the capacity of each PHEV is considered to be 1.82 kW. Optimization algorithm such as PSO, MPSO, GA and DE and also MATLAB software was used for electric vehicle planning.

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