سیویلیکا - ناشر تخصصی مقالات کنفرانس ها و ژورنال ها گواهی ثبت مقاله در سیویلیکا CIVILICA.com

عنوان مقاله:

Interaction among vehicle to grid and renewable energy with energy storage

محل انتشار: پانزدهمین کنفرانس ملی روز مهندسی (سال: 1397)

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خلاصه مقاله:

Against the worldwide economic crisis, the exhaust emissions and the ever-increasing oil prices, plug-in electric vehicles (PEVs), such as electric cars (BEVs) and plug-in hybrid (PHEVs), could be in the near future a valuable, economic and clean means to provide the power grid with demand response services by either delivering electricity into the grid or throttling their charging rate [1,2]. PHEVs can be charged from house hold electric connection as well as from charging station, even from the car park at day time. Vehicle-to-grid (V2g) enables PEVs to have 2-directional power flows once they are connected to the grid, i.e., they can either inject power to, and draw power from, the grid which adds further complexity to power system operations. PHEVs offer opportunity of storing wind and solar energy at times of excess generation and use the power whenever necessary for the improvement of power quality and stability of that source. PHEVs in a distribution network have the potential to revolutionize Not only how we drive but how we generate and use electricity in our homes and workplaces. Vehicle to grids (V2g) are often mentioned as one of the solutions to the problems of fossil fuel dependence in the transport sector, greenhouse gas emissions, and lacking demand side management in power systems with high levels of renewable energy. Unlike conventional storage capabilities, the grid-connection storage topography of PEVs may change during the daily operation of power systems. PEVs consume energy according to their driving requirements. In addition, the total PEV energy drawn from the grid could be much larger than the energy injected to the grid [3,4]. While most of the previous studies addressed the economic aspects of integrating PEVs to power systems, they lack the transmission system security consideration offered by the PEV interconnection and its daily profile in power systems. The contributions of this paper include the modeling of large scale PEV integration as mobile distributed load and storage facilities and their impacts on the optimal operation of fuzzy constrained power systems. The study considers physical limitations of power systems, hourly load and wind energy uncertainties, and random outages of generation and transmission components in PEV integration. (V2g) technology has drawn great interest in the recent years. Success of the V2g research depends on efficient scheduling of grid able vehicles in limited parking lots. V2g can reduce dependencies on small expensive ... units in the existing power systems as energy storage that can decrea

کلمات کلیدی:

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