

Electric vehicle massive resources mining and application

Abstract

As the first international demonstration city of electric vehicles in China, Shanghai leads the country in electric vehicle development and charging infrastructure construction. Taking Shanghai as an example, this report introduces the development history and current situation of electric vehicles in the first stage.

The main body of this report is the introduction of the electric vehicles massive resources mining. Electric vehicles and their charging facilities integrate the power grid, renewable energy network and transportation network to form a smart energy transportation network. The massive resources model is established. Based on this smart network model, several auxiliary services are accessible feasibly. (1) Peak load cutting and valley filling in the power grid. (2) Power grid frequency regulation. (3) Emergency support service of the power grid, including electric vehicles connected power supply for isolated commercial buildings, no power cut in the maintenance of residential areas, and emergency power supply in extreme weather, etc. All of which could be realized with large scale electric vehicle group participation by charging and discharging control.

Currently, the application of electric vehicles massive resources has been in practice, such as the demand response pilot in Shanghai. The pilot results illustrate the fact that the electric vehicle mass resource mining has considerable promotion prospect.