EV Vehicle Charging Station Finder App

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Abstract*: The ever-increasing population of India accompanied by the recent concerns regarding fossil fuel depletion and environmental pollution has made it indispensable to develop alternate mode of transportation. Electric Vehicle (EV) market in India is expanding. For acceptance of EVs among the masses, development of charging infrastructure is of paramount importance. This work formulates and solves the charging infrastructure-planning problem for city, that will develop as a smart city soon. The allocation of charging station problem was framed in a multi-objective framework considering the economic factors, power grid characteristics such as voltage stability, reliability, power loss as well as EV user's convenience and random road traffic. The advent of alternative vehicle technologies such as Electrical Vehicles (EVs) is an efficient effort to reduce the emission of carbon oxides and nitrogen oxides. Ironically, EVs poses concerns related to vehicle recharging and management. Due to the significance of charging station infrastructure, electric vehicles' charging stations deployment is investigated in this work. Its aim is to consider several limitations such as the power of charging station, the average time needed for each recharge, and traveling distance per day. Initially, a mathematical formulation of the problem is framed. In this work is proposed the design of a system to create and handle Electric Vehicles (EV) charging procedures. Due to the electrical power distribution network limitation and absence of smart meter devices, Electric Vehicles charging should be performed in a balanced way, taking into account past experience, weather information based on data mining, and simulation approaches. In order to allow information exchange and to help user mobility, it was also created a mobile application to assist the EV driver on these processes. Then, this problem is optimized by application, with the objective to calculate the necessary number of charging stations then finding the best positions to locate them to satisfy the clients demand. In this paper, the potential need for electric vehicles, charging station infrastructure and its challenges for the Indian scenario are studied. Further more understanding of the topic and searching and locating of the charging stations.*

Keywords: EV Vehicle

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