



Battery swapping stations for electric vehicles

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Abstract

The electric vehicles operation is inefficient in some commercial segments due to the low performance of public charging infrastructure and the limited capacity of electric vehicle batteries. For vehicle fleets of taxis and courier and logistics companies, the battery swapping system is a suitable model for replenishing energy in the vehicle. Battery swapping stations enable the vehicle to be serviced in less time than it takes to refuel at a petrol station. The long battery charging at a battery swapping station is cheap and it slowly reduces the battery service life. Disadvantages of battery swapping systems, consisting among others in the heterogeneity of types of batteries used in electric vehicles, limit the expansion of these systems for passenger vehicles. In the world, China is the only region where battery swapping stations are gaining importance, and the network of stations here will be substantially developed. The submitted paper summarizes the qualities and disadvantages of battery swapping stations and discusses developments in the construction of these stations in the regions of China and Europe.

Keywords: battery swapping, electro mobility, car industry in China, charging technology, freight electric vehicle