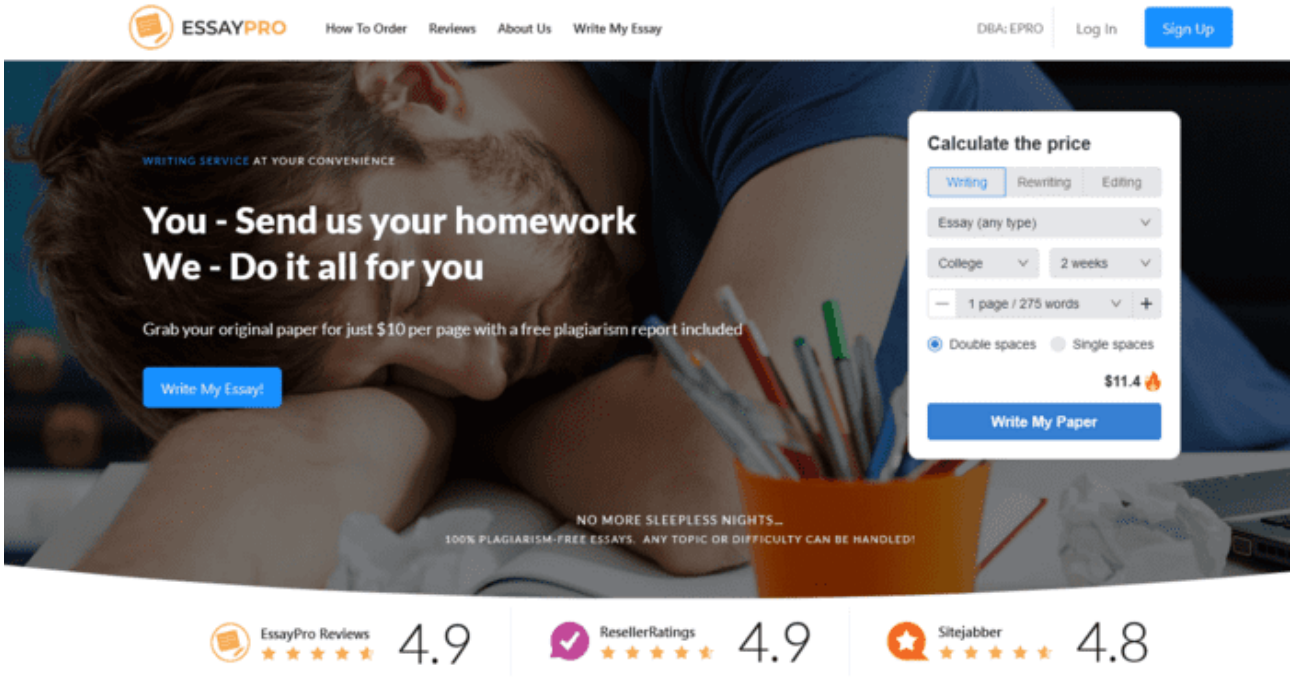
Electrification of Public Buses Essay



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1.1 Introduction

The benefits of introduce Electric Vehicle (EV) into power network have been demonstrated in vast amount of literatures. Functionalities such as damping out the oscillation of electricity quality, responding to demand schedule, acting as the back-up reserve and accommodating the penetration of wind power generation are sufficiently analysed based on the assumption of perfect prediction and management of EV mobility. However, there exist many drawbacks of oversimplified assumption of EV mobility. First, lots of existing models rooted their research within the existing private car ownership models, which generally predict the fleet size in a given area as a function of average car price, average house hold income or even use current vehicles data. But other attributes such as the variation of tax credit and households' multi-purpose trip have significant impacts on people's eagerness to purchase EVs as well. Second, the electricity demand of EVs are predicted on the basis of fixed vehicle usage model that EVs are sometime connected to electric grid without affecting vehicle owners' daily trips. But the truth is vehicle owners may adjust their travel behaviour according to the tariff to minimise their cost. Additional rebates by allowing network operator to access their batteries can also be differential driving force to further change vehicle owners' travel behaviour and parking choice.

On the other hand, lots of gaps need to be filled in, of which one particular filed is the electrification of public transport. Electrified public transport are discussed either in fields like continuous charging on road or the deployment of charging station surround existing routes. At this stage, government and investors need som...

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