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Comparative Analysis Maintenance and Repair Costs of Electric, Hybrid and Combustion Engine Vehicles*

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Abstract

As the number of electric and hybrid vehicle users increases, there is growing interest in the topic of maintenance and servicing costs. Many literature sources do not provide information on this topic and only limit themselves to energy costs. However, it is not just energy costs that make up the total cost of owning such a vehicle. What is missing is an analysis of the difference between the cost of maintenance and operation of electric vehicles and that of internal combustion engine vehicles. This paper presents a results of research regarding the repair and servicing costs of electric and hybrid vehicles compared to combustion vehicles. A survey was carried out which shows that the repair costs of electric and hybrid vehicles are more than 20% higher. Repair and servicing of electric and hybrid vehicles should also take into account the repair time (depending on the availability of parts and the repair schedule of the repair shop in question) and the availability of personnel with the appropriate competence for such a repair. The five most frequently replaced items in internal combustion vehicles were: braking system, suspension system, oils and operating fluids and air conditioning. The five most frequently replaced items in hybrid and electric vehicles are: battery replacement or reconditioning, coolant replacement, suspension system, oils and operating fluids, electronics in general and braking system.

Keywords: Electric vehicles, comparative cost analysis, services, repair

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