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IMPROVING ENVIRONMENTAL FRIENDLINESS OF PUBLIC TRANSPORT IN ZHYTOMYR BY USING ELECTROBUSES

Public transport in Zhitomir consists mainly of bus network, tram and trolleybus network. The results of the April 2016 research on passenger public transport show that 24% of passengers are transported by electric transport, 12% by road vehicles of M3category and 64% by road vehicles of M2category. In rush hours we observe road congestion in the city center, which reduces the traffic speed, causes traffic jams and increases environmental pollution. One of the solutions to these problems is the introduction of modern environmentally friendly road vehicles – electrobuses, that would gradually replace traditional buses, with all their advantages compared to trolley buses and trams.

The research of passenger trafficking shows that the dominant number of passengers uses road vehicles of M2 category. These buses are of higher speed thanks to their maneuvering and dynamic properties compared to the trolley buses. However, the bus fare is higher and they pollute the environment.

So, the task is to exclude fuel oil road vehicles from city transport system. We consider the following options for alternative road vehicles.

1. Biofuel vehicles. The advantages include the use of renewable energy, but this option also requires proper production facilities, which are currently not available in Zhytomyr. And their construction in its turn requires substantial investment.

2. Hybrid vehicles. Their advantages over municipal electric transport include the move autonomy. Compared to the automobile transport hybrid vehicles are better because of energy preservation in unstable city traffic. However, this kind of transport does not provide absolute environmental safety as it uses ICE generator. 3.

3. Electrobuses are the most environmentally friendly road vehicles. Compared with the existing electric transport in the city, electrobuses have the advantage of independent move, i.e. they enable new routes regardless of the electric network. They also have a higher average technical speed on the routes, particularly in express motion. They are charged mostly at night when the tariff is lower.

In contrast to route vehicles equipped with internal combustion engines, electrobuses are ecological, silent and have reduced exploitation expenses, including the cost and complexity of maintenance and repair. Electrobuses are more economical compared to buses. A traditional bus spends 10 times more money on fuel per day than an electrobus does on energy. Therefore, we can conclude that the high cost of elektrobus will quickly pay off.

So, an elektrobuse is a vehicles with all the advantages of ICE vehicles. Moreover, they have lower operating costs and the lowest pollution.

It should also be noted that electrobuses have already been implemented in the city transport system of Ukraine. In 2016 Kyiv and Lviv ordered elektrobuses from the

native producer concern "Electron". In Europe elektrobuses are already in use. To increase their average mileage there are specially equipped charging stops.

Taking into account European experience of electrobuses use we offer to gradually replace vehicles with internal combustion engines to elektrobuses in Zhytomyr. This will improve the standard of life in our city both economically and environmentally.