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PROSPECTS FOR ELECTRIC VEHICLES IN UKRAINE

We are gradually moving towards the widespread use of more ecological and modern types of transport on electric motors. Electric cars have already become an integral part of our lives, and in the future, this direction will only develop.

The subject area can be divided into three functional groups: electric vehicles (together with hybrids), electric motor vehicles and still exotics such as gyroboards, unicycles, electric skates and gyroscooters.

Electric cars. Electric cars and hybrids were represented both by official importers of car brands offering new equipment, and by grey importers, more specialized in cheaper but used copies. The former include Kia, Hyundai, and BMW importers, while the latter include sellers of old Nissans and Teslas that are not officially delivered to Ukraine. At the same time, the stands of the official Koreans were primarily decorated with hybrid Niro and Ioniq, but the latter was also presented in a fully electric modification, the import of which will begin in our country closer to the end of the year. The i3 displayed at the BMW stand looked beautiful, but it seems that the development and launch of this particular model became one of the main reasons for the decrease in the concern's profit in 2016, recorded against the background of record sales of cars. Even tens of thousands left the showrooms of expensive Bavarian electric cars until they recoup the four-billion-dollar investment in their development.

However, the vast majority of companies that have established their serial production show sales figures for electric cars that are much lower than expected. Despite the powerful PR campaigns that tell about the tenfold increase in sales of cars with electric motors, subsidies and tax breaks, their share of the world market barely exceeded 1 % (!). The reason lies partly in the high cost of such equipment, which makes its purchase economically unattractive.

More than that, the problem of electric cars is not only in the high price: the ideal scenario of their use involves the owner living in a private house, in the yard of which the vehicle can stand all night charging. Residents of high-rise buildings are deprived of the opportunity to charge electric cars at night for obvious reasons. Everyone agrees that the construction of a wide network of charging stations is necessary to create conditions for the normal daily operation of electric cars. Nevertheless, who will pay for this

entire feast and how to compensate these costs for end users is still not very clear. Do not forget that fast charging reduces the problem of traveling long distances, but does not remove it completely.

Electric motor engineering. Against the background of the weak practical appeal of electric cars, electric scooters look like a very promising product. Their assets include a simple design (battery plus motor-wheel), decent enough mileage for local trips on a single charge (50-70 km), silence, especially compared to gasoline counterparts, and a relatively reasonable price (on average from $600 to $1200). All this makes them a better alternative to conventional scooters for people living in the private sector.

The downside is that the charging time is quite long – 6-8 hours. With sufficient efforts and resources spent on popularization, electric scooters have every chance of becoming a very popular product and a justified purchase. They will be more convenient for residents of high-rise buildings equipped with wide elevators.

Other electric transport. With electric scooters and electric bicycles, everything is more or less clear: they are controlled, like their non-self-propelled ancestors, and set in motion, like electric scooters, by a motor-wheel. The batteries are either suspended from the bicycle frame and the scooter platform, or integrated into them. Owners of electric bicycles can move by turning the pedals, electric scooters – by pushing off the ground with their feet. Paradoxically, electric bicycles are often more expensive than electric scooters: those who want to can find the device a little cheaper than $5,000. Electric skates are also controlled like regular skates, but thanks to the electric drive, they are able to ride on a flat surface without the effort of a skateboarder and even climb a mountain.

Gyroscooters and gyroboards are often confused. What they have in common is a horizontal platform with two wheels on the sides, the stability of which is ensured by gyroscopes controlling electric motors. However, in gyroscooters, this platform is solid, and in gyroboards, it consists of two parts and a bridge between them. Forward-backward movement in both cases is carried out by tilting the body, but turns take place differently. In a gyroscooter, by tilting the control handle to the right or left (there are modifications in which you can tilt this "big joystick" not with your hands, but with your knees, which is very convenient). In addition, in order to turn a gyroboard on, it is enough to transfer the weight of the body to one leg, as in alpine skiing. The most difficult thing is to control the unicycle, but it will take a maximum of a few days to master it. The main thing is not to try to stand still as on a gyroboard or a gyroscooter, you need to go immediately.

The battery capacity of most of these devices is designed for 1.5–3 hours of operation. Speed, as a rule, is limited to 18-30 km/h solely for safety reasons.

The practical application of all these devices is limited. In practice, such a scenario is difficult to implement in Ukraine for many reasons. It is possible at production and warehouse complexes or large objects of transport infrastructure, where personnel have to move over long distances during the working day, as well as at exhibitions and during mass events. For everyone else, this personal electric vehicle remains an attraction and a means of active leisure time.