Jerzy Czaplejewicz

ELECTROMOBILITY IN PRACTICE

Every second, of all chimneys and exhaust pipes on Earth, more than 1,000 tons of carbon dioxide !!!! Let's calculate how many thousands of tonnes of CO2 we produce every minute, hour and day! The numbers are amazing! They also give us a simple message about the scale of the problem, especially when we press the gas as much as the factory has given.

Car manufacturers have taken seriously the obligation to reduce greenhouse gas emissions in information practice, shown as CO2 emissions.

The information that comes to us shows that, in general, they devote the most attention to the use of electricity to drive. Apart from the so-called carbon footprint drives using electricity to reduce CO2 emissions are the right direction. Electric vehicles can be divided into several groups, namely:

- hybrid drives - use together combustion engines and electric motors in various systems. The hybrid system can be called a transition system or rather "introducing" the complete elimination of internal combustion engines. From the point of view of road users at the current level of electromobility development, relatively logical and practical, but still an intermediate stage of implementing the so-called clean drives.

- only electric drives - the most visible and publicized in the media is a group of direct electric drives using only electricity stored in car batteries. Tesla cars are the flagship example. The pros and cons of such drives have been discussed for a long time but most manufacturers are expanding their portfolio of electric-powered vehicles. Renault in Poland (ZOE electric car sales leader in Europe), apart from cars with electric motors, is also developing, among others base of chargers, among others near railway stations, Poczta Polska ordered 20 electric Nissan e-NV200 Volkswagen bravely declared that it would take action to completely switch to electric drives. The main obstacles to the development of this group are still modest structure of charging points, long charging time, short range on one charge and high price of the vehicle (already mitigated by government subsidies). We will consistently try to present next models of electric vehicles with passenger and delivery vehicles as well as progress in eliminating obstacles to the development of this group of vehicles.

- indirect electric drives, mainly using hydrogen - now a group, still marginal, but growing in strength and in my opinion having enormous potential, and in the opinion of many is the future of the automotive industry. It is a group of drives using hydrogen as a direct "raw material" for electricity production. Hence, hydrogen propulsion is often referred to in media coverage. Hydrogen is not burned (although such solutions are implemented) but serves as a raw material used in fuel cells to produce electricity, which in turn drives the vehicle's

electric motors. The advantage of this solution is the almost unlimited availability of cheap hydrogen and the speed of refueling. The disadvantage is the short period of hydrogen storage in the tank. The development of this type of drive requires, among others development of hydrogen storage systems. In principle, one can be tempted to say that this is the most ecological propulsion system because instead of exhaust gases it emits only water and especially if hydrogen is obtained from surpluses produced in renewable energy systems. This drive focuses on, among others Toyota (FCHV-adv), Hyundai (NEXO) and Honda delivering the Mirai model to the market and recently even trucks under the name Project Portal and UNO tractor. The UNO tractor also has an additional installation for hydrogen production by water electrolysis. It is to be tested in an ecological transport zone. It is worth following the development of this type of drive.

Autor : Jerzy Czaplejewicz