

## ELECTRIC CARS.

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**Abstract.** *This article discusses one of the greatest inventions of our time, electric cars, and their importance.*

**Key words.** *car, electric car, gas fuel, alternative fuel, alternative fuel, alternative fuel*

Cars produced by UzAuto Motors and almost all cars currently in use around the world are based on internal combustion engines, i.e. cars that run on gasoline, diesel or gas fuel. In short, the era of traditional gasoline and gas-powered cars is coming to an end! Another two decades and they will give way to electric cars.

Remember, 10-15 years ago when mobile phones were becoming popular, the handset market was full of Nokia, Siemens, Motorola, Philips, Sony Ericsson, etc. You didn't even hear about Apple and Xiaomi devices at that time. The reason is very simple: the above companies, which had a place in the market in the era of simple push-button phones, could not make popular offers for the market in the era of smartphones, and now you can hardly find them in the market of mobile communication technologies. In 2010-2012, the era of push-button phones has already ended and the era of smartphones has begun. A similar situation is expected to happen with the car market (and it has already started).

Today's energy problems in Uzbekistan demand the transition to alternative fuel types for cars. As a solution to this problem, electric cars are now being mass-produced. In particular, there is a need to convert existing internal combustion engine vehicles into electric vehicles. Therefore, solving problems in this area is very urgent today. The automotive industry of Uzbekistan is currently developing and being updated, new models of cars are being produced every year. At the same time, the observed fuel shortage in our country indicates the need to produce cars that run on alternative fuels. This, in turn, showed the need for the production of electric cars and the re-equipment of existing cars running on internal combustion engines into electric cars.

Tesla started conquering the market with electric cars. In the last quarter of 2019 alone, the company sold 104,891 electric cars. And Tesla is not alone in this regard. Most people think of Tesla first when they think of an electric car. But electric cars are already in the catalogs of Jaguar, Audi, Mercedes and Porsche. So





far, only the model produced by Porsche has appeared on the market cheap enough to compete with Tesla and promises technical advantages (in particular, the Porsche Taycan model can be charged to 80 percent in just 22 minutes, and it takes 1 hour to fully charge - you coffee your car will be ready to go again by the time you finish drinking).

Based on the current conditions in our country, the president of our republic signed the decision "On measures of state support for the organization of the production of electric cars" on the development of the industry. According to it: in order to reduce the amount of harmful gases released into the air by actively introducing "green" technologies in all sectors, supporting the production of electric cars and their components:

Industrial production of electric cars is supported by the state through:

- Until January 1, 2030, electric cars produced in the republic will be exempted from the disposal fee, as well as their components, equipment, raw materials and spare parts for servicing. The amount of the disposal fee is 9 million soums for electric cars and 36 million soums for hybrid cars, 337.5 billion soums from the preferential disposal fee for 15 thousand cars planned to be produced in 2024, 48.4 billion from the customs duty is expected to amount to soum;

- customs duty and disposal fee for electric cars in the case of a complete set (SKD) or finished car (CBU) of no more than 10,000 units (50% of production capacity) per year until the mastering of the production process (no more than 24 months) import is allowed without payment. Customs fees will be reduced by 800 dollars (disposal fee) for 1 electric car, and 6.9 thousand dollars (disposal fee - 3.2 thousand, customs duty - 3.3 thousand) for 1 hybrid car. The allowance for 10,000 cars is 450-550 billion soums.

- compensation from the state budget will be paid in the first 36 months of the loan in order to cover the loan interest of no more than 360 million soums, which exceeds 15%, but does not exceed 10 percentage points.


- The compensation payment will be 59.1 million soums for 1 car for 3 years, and 591.2 billion soums for 10 thousand cars. The monthly payment of the loan will be reduced to 1,642 million soums (from 8.7 million soums to 7 million soums).

- If we start to compare the internal parts of an electric vehicle with a conventional one, they are not much different. Its operation is very similar.

The main elements that make up this electric car are:

- Electric motor. It is responsible for converting electrical energy stored in batteries into kinetic energy. With this, the car can move. Engines can also do the





opposite, that is, on downhill slopes, they use the captured kinetic energy and store it in the form of electricity.

- Drums. Something that collects electrical energy used to run a motor. There are some vehicles that have an auxiliary battery to keep them grounded.

- Loading port. What happened to the plug that connects to the power source that recharges the car battery?

- Transformers. They are responsible for converting the parameters of electricity into what is needed to charge the batteries. There are vehicles that run on alternating current and others on direct current. They also serve to cool the car, prevent spills and explosions.

- Controllers They regulate the input of energy to the battery. In this way, you can balance the charge appropriately to extend its useful life and not degrade it.

Electric vehicles have some advantages over other vehicles. They are as follows:

- Reduce noise pollution in cities because they are quieter. If all vehicles in the city center were electric, there would be no such noise. Of course, an electric taxi drove past you today and you didn't even hear about it. Noise also affects people's health. Therefore, it is important to reduce it.

- They do not pollute, which improves air quality in cities. During their use, they do not emit harmful gases that pollute the air in cities and increase the effects of climate change and global warming. Thousands of people die every year from respiratory diseases as a result of air pollution.

- Zero emission capability. To generate electricity, if we use fossil fuels, we emit gases not in use, but in production. Therefore, electric cars have the ability to be zero emissions. This happens when renewable energies like solar and wind are used to generate electricity.

- The engine is just as powerful and cheaper. They usually have almost the same power as conventional ones and are more compact and reliable. The problem is the autonomy of the battery. There are no elements that cause the engine to fail.

- More efficiency and less consumption. The efficiency of electric cars reaches 30% compared to 90% of conventional ones. They consume less and we save more. To perform the same effort, they require less energy, only batteries provide this energy for a short time.

Currently, and despite the fact that they are developing a lot, they have many disadvantages. Some of them are:

- Little autonomy. As mentioned several times throughout the post, the limited autonomy of these vehicles slows down its development. It is impossible to go on





long trips without spending hours recharging the battery. For example, to travel from Seville to Madrid, you would have to stop about five times to charge. Each charge is a few hours of waiting. Therefore, a relatively short trip becomes very long.

- Not enough charging points. There are still not enough charging points to be fully independent.

- Low power. The power of the car is very limited. It is being studied how to increase it, because it is harmful for the car. Drivers cannot speed or approach normal vehicles.

- Batteries are very expensive and do not last more than 7 years.

With all this information, you can learn more about electric cars and prepare for the future that awaits us.

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