

3. The construction of automobiles became accomplished and much cheaper in production than their rivals’.

In 2008 a company appeared and claimed that their electric vehicle would change the automobile industry forever. This is “Tesla Motors” and their sports car “Tesla Roadster”. After seeing the presentation of this car the other companies, which were producing cars with ICE, noticed the danger to their sustainability. Under these conditions, the globally- known companies GM and Nissan decided to take part in the competition and produced Chevrolet Volt and the Nissan Leaf, the cars on electricity.

A new model of Tesla in cyberpunk style was presented by Elon Musk in November 2019. This model is called “Cybertruck”. Solar panels are embedded into the car roof, and the founder of Tesla claims that it can accumulate solar energy for 15 miles per day, which is enough for commuting. In addition, the range of the “Cybertruck” varies from 250–500 miles (400–800 kms), depending on configuration selections.

According to the analysis of the present-day conditions, it is possible to state that cars on electricity can exist in the Republic of Belarus. The facts in favour of using e-cars in Belarus are as follows:

1. The Belarusian nuclear power station will give a chance to decrease the level of electricity tariffs for charging cars, which will make the market of e-vehicles more attractive.
2. The amount of charge stations in Belarus is growing at a steady rate.
3. The number of consumers of e-cars in Belarus is increasing.
4. The deterioration of ecological situation causes the increase of people’s awareness in favour of using e-cars.

To conclude, e-mobiles can potentially leave ICE cars out of competition and curb the process of global contamination.

**V. Chaschina**

**В. Чащина**

БГЭУ (Минск)

*Научный руководитель Н.И. Гуринович*

## **FINANCIAL EFFICIENCY ASSESSMENT OF THE BIOENGINEERING IN THE REPUBLIC OF BELARUS**

### **Оценка финансовой эффективности биотехнологий в Республике Беларусь**

In the 21st century at least 20% of the produced goods volume will include biotechnologies. By the end of 2020, the global biotechnology market will be about 600 billion USD.

**The objective of this research** is to clear out major sources of financing and development perspectives of bioengineering in our country.

Bioengineering is a discipline, that explores the field of engineering, biology and medicine that promotes the health of mankind through various engineering developments with the achievements in biomedical science and clinical practice. It also refers to modifications of biological organisms for human needs, starting from the modification of plants and animals through artificial selection. The main aim of bioengineering is to improve the quality of food and increase the productivity of living organisms.

Due to the fact that most of the innovations in Belarus are developed in government institutions, the main source of financing is the republican budget and republican centralized innovation fund. Grants and loans are provided for some specific researches. The National Academy of Sciences of Belarus is the main research center of this kind of technologies. The Institute of Bioorganic Chemistry, the Institute of Genetics and Cytology and other organizations of the Ministry of Health, the Ministry of Education, the Ministry of Agriculture participate in biotechnological research.

According to the report of the National Academy of Sciences main significant developments are:

- tests that measure sensibility of leukemic cells to different drugs;
- production regulations probiotal feed additives;
- methods assessing the risk of pregnancy loss and finding the most widespread chromosome diseases and malformation syndromes during pregnancy and many-many others.

The planned total fund of the program “Science-oriented technology and technical equipment 2016–2020” for the all period is 237. 692 mln. BYN. In fact, for 2016–2019, about 113.53 mln. BYN out of 199.246 mln. BYN of the programme was spent on the subprogramme “Innovative bioengineering technologies”. In percentage terms it is about 57%. From 113.53 mln. BYN almost 50 mln. BYN was republic budget resources and more than 60 mln. BYN accounts to independent means. Due to this numbers scientific and technical potential of our country seemed to be insufficient to have an impact on technological modernization of the national economy.

In Belarus the research and development intensity of the GDP is 0.6% (for comparison: Sweden – 3.2%, Poland – 1.1%). During the history of the independent Republic of Belarus this criterion has never been more than 0,88% in 1996. Standing at such a low point shows the lack of financing for strategic decisions.

As the result, created studies can't find commercialization and technology transfer from research to production.