

### **Références:**

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## **PROS AND CONS OF ELECTRIC TRANSPORT**

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The Industrial revolution happened in XVIII century. Since that many inventions were introduced to the world. We cannot imagine our life without different accessories. One of that accessories, which was invented in 1886, was a car. For more than a century millions of cars were produced.

Of course, the process of car production can't be ecological and it has huge impact on the environment. Not only the production of cars pollutes our atmosphere but cars themselves.

After the economic crisis in 1980th many ecological standards and norms were introduced and factories had to follow it. Since that time these standards became only stricter, cars became more effective and the consumption of fuel, just as CO<sub>2</sub> release, became lower.

In comparison, before the crisis heavy metal lead was added to petrol in order to increase the effectiveness of engines. Of course the effectiveness increased but smoke from the engine happened to be toxic, many people got different illnesses and many children were born with anomalies.

Excessive consumption of natural resources is a big problem for mankind. Scientists are constantly looking for alternative energy sources. Cars are not exception. Cars emit 70 % of carbon dioxide from all transport on the planet. Smog is a big problem in cities. Since the beginning of the 21st century, manufacturers have begun to invent alternative-powered vehicles. In addition to internal combustion engines (ICE), there are electric engines, hydrogen engines (which is also an internal combustion engine) and hybrid engines, which consist of ICE engine and electric, for example.

Electric vehicles are getting the most publicity right now. It is believed that by 2050 humanity will produce only electric cars, and cars with ICE will be banned

in many big cities, etc. Today you cannot drive an old diesel car into the center of some European capitals. Is it justified? Are electric vehicles really that green?

Let's get down to business.

We all know that electric cars don't release carbon dioxide which has a good impact on our atmosphere.

What are the disadvantages of electric vehicles?

The batteries for electric cars use a lot rare materials which can be found in a few places on Earth (lithium, copper, cobalt, aluminium, nickel, etc.). Chile produces the largest amount of lithium (8,800 tonnes per year), with other big producers including Argentina and China, while Bolivia has the world's largest known reserves. There are rich cobalt deposits in countries like the Democratic Republic of Congo, where it lies on the surface and is picked up by miners who include women and children. Cobalt is toxic to humans and most of these miners work with little or no protective equipment.

It has been suggested that we will struggle to create large numbers of electric cars in Europe in the near term, simply because we don't have sufficient access to sources of lithium to make the batteries and we don't have the factories to make them in either.

To get a real idea of how much greenhouse gas is emitted during the manufacture of an electric car, you have to look at how its components are sourced and made. The raw materials for making the car have to be mined, and the process of mining creates a lot of greenhouse gases. Then the raw materials have to be refined before they can be used, which again emits more greenhouse gas. Then more greenhouse gas is emitted in the manufacturing process.

Of course the above is also true when manufacturing a petrol or diesel car. In fact, taking into account the whole production process, making a petrol or diesel car releases about 7 to 10 tonnes of CO<sub>2</sub>.

Making electric car releases roughly the same amount of CO<sub>2</sub>, but then you have to add in the production of the battery. Estimates suggest that 150 kg of CO<sub>2</sub> are released for every 1 kiloWatt hour (kWh) of battery capacity. For an electric car to have a decent range (say 300 miles) between charges, it needs a battery that's at least 60 kWh in capacity. This means that a further 9 tonnes of CO<sub>2</sub> will be emitted during the making of an electric car, giving a total of 16–19 tonnes of CO<sub>2</sub> emitted. So at this point, an electric car seems worse for the environment than a fossil fuel one.

The environmental impact of an electric car can increase or decrease considerably depending on how the electricity that charges its battery is made. A coal-fired power station emits 800–850 grams of CO<sub>2</sub> per kWh (recent estimates suggest this may be lower, at 650 g per kWh), whilst a cleaner, gas-fired power station emits 350–400 g CO<sub>2</sub> per kWh. Using renewable energy, like solar panels or wind turbines, around 36 g CO<sub>2</sub> is emitted per kWh, taking into account the emissions created during their manufacturing process. If a car is recharged

using renewable energy, its negative impact on the environment is far lower than if it's charged using electricity from a coal-fired power station.

Another important factor is recycling. With cars with internal combustion engines, everything is clear – they can be handed over for recycling. Everything is more complicated with electric vehicles. The most important element of an electric car, the battery, cannot simply be thrown away after use due to the presence of toxic substances inside. At present, the disposal of lithium-ion batteries is a big problem, as it is a cost-intensive process.

What to do?

My idea is to develop the systems of hydrogen and hybrid engines. If these industries are sufficiently developed, they will outperform electric vehicles and petrol engines in terms of efficiency. The main problem is it's pretty hard to make hydrogen and make it all work. Also, it costs a lot.

What about Belarus?

Fortunately, our government supports green transport, benefits are given to the owners. By the way, many power stations were built to make life easier for owners. There are 680 of them all around Belarus. In 2022 there more than 10 000 electric cars in Belarus. For example, in 2021 there were only 4000.

I personally think that electric cars will be widely spreaded all over the world but there will be problem with the utilization of batteries and the whole production of batteries.

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### **GREENWASHING**

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This article is based on the coverage of an essential issue of consumer deception. Today more and more brands are becoming more environmentally friendly: sorting garbage or going to the store with eco-bags has become a habit of many buyers. However, not all products that are positioned as “green” are eco-friendly – sometimes their intentions are only limited to rant. This phenomenon is called “greenwashing”.

It would be most correct to define the term “greenwashing” as a process of conveying a false impression or misleading information about how a company's products are environmentally sound. Greenwashing is an unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly or have a greater positive environmental impact than what is true.