

## ROAD TRANSPORT - MAIN POLLUTANT ENVIRONMENT

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**Abstract:** at present, in the transport industry of Uzbekistan, there are a huge number of road transport enterprises engaged in freight transportation. With the development of market relations, the number of small and medium-sized road transport enterprises with a small number of vehicles has increased. However, the impact of vehicles on the environment is one of the most pressing problems of our time.

This article examines the impact of vehicles on the environment, as well as identifies the causes of air pollution in vehicles. Measures are proposed to help reduce emissions of harmful substances that pollute the atmospheric air.

**Keywords:** vehicles, environmental protection, carbon monoxide, aldehydes, soot, nitrogen oxides.

## АВТОМОБИЛЬНЫЙ ТРАНСПОРТ - ОСНОВНОЙ ЗАГРЯЗНИТЕЛЬ ОКРУЖАЮЩЕЙ СРЕДЫ

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**Аннотация:** в настоящее время в транспортной отрасли Узбекистана насчитывается огромное количество автотранспортных предприятий, занятых грузовыми перевозками. С развитием рыночных отношений увеличилось количество малых и средних автотранспортных предприятий с небольшим количеством автомобилей. Однако влияние автотранспорта на окружающую среду является одной из самых актуальных проблем современности.

В данной статье рассмотрено влияние автотранспорта на окружающую среду, а также выявлены причины загрязнения воздуха автотранспортом. Предложены мероприятия, способствующие снижению выбросов вредных веществ, загрязняющих атмосферный воздух.

**Ключевые слова:** автотранспортные средства, охрана окружающей среды, окись углерода, альдегиды, сажа, окислы азота.

Currently, in the transport industry of Uzbekistan, there are about 400 road transport enterprises engaged in freight transport. With the development of market relations, the number of small and medium-sized road transport enterprises with a small number of vehicles has increased. The average age of vehicles is 12 years, including 60% of the fleet has been in operation for more than 15 years, all of them are completely worn out and subject to write-off. Moreover, most vehicles do not meet the international Euro 4 standards related to permissible axle load and environmental restrictions, and, as a result, are not allowed to work in Europe. All of them are used mainly for the transportation of goods to Russia and other CIS countries. The overwhelming majority of trucks are privately owned. Objectively, the vehicles available in Uzbekistan today are not able to compete in the international market, and its operators cannot compete with operators from Iran, Turkey, Kazakhstan and Russia. As a result, most of the Uzbek vehicles are used to transport goods (for example, cotton, building materials, consumer goods and agricultural products) within the country [1].

Automobile transport accounts for about 10% of foreign trade and 88% of domestic passenger and freight traffic. The annual growth rate of the volume of road transport services is 20%.

Poor road conditions not only increase overall transport costs by 20 - 30%, it also shortens the life of vehicles. Therefore, the restoration of the national road network has become one of the main priorities of Uzbekistan.

As of January 2017, the total length of highways in Uzbekistan is 183 thousand km, of which 42.5 thousand km are public main roads.

Motor transport emits 200 pollutants into the air, including carbon monoxide, aldehydes, soot, nitrogen oxides. Accumulating in the surface layer (the breathing zone of people), these substances react under the

influence of ultraviolet rays, becoming the initial products for the formation of new, sometimes even more toxic compounds.

As of January 1, 2020, Uzbeks owned 2 million 580 thousand 133 cars. Of these, 44% run on gasoline, 15% on diesel fuel and 41% on gas fuel. Almost 91% of the volume of transport greenhouse gas emissions is accounted for by vehicles [2].

Currently, more than 450 thousand vehicles are registered in the city of Tashkent. The city receives about 50 thousand more cars from other regions and states every day.

About 75% of the vehicles registered in the capital operate on gasoline and diesel engines, and 25% on gas. When working on diesel fuel, 208 kg of pollutants are emitted from one ton of fuel, when working on gas - 3 times less.

Compared to 1991 (393 thousand tons), the volume of pollutant emissions from vehicles in Tashkent remained almost unchanged, although the rate of emissions per vehicle unit decreased several times from 2.62 tons to 0.88 tons per year. This was achieved to a large extent due to the renovation of buses and trucks.

According to the Tashkent City Department for Ecology and Environmental Protection, the volume of emissions of pollutants into the air in the city of Tashkent last year amounted to about 426 thousand tons. At the same time, the share of motor transport accounted for 395 thousand tons, or more than 90% of emissions.

On the scale of Uzbekistan, the total volume of emissions in 2018 amounted to 2 million 449 thousand tons, of which 60% is accounted for by road transport, which is more than 3 times higher than the standards set in developed and developing countries [3].

The level of urban air pollution is measured by the Air Pollution Index (API). API values less than 5 points correspond to a reduced level of pollution. API is calculated by comparing the observed concentrations of pollutants with the maximum permissible concentrations (MPC) established for them, the values of which are higher than 1.0 are potentially hazardous to public health.

Over the past 10 years, the level of air pollution in all cities of Uzbekistan has been reduced. The lowest values of ISA-1.10-2.63 are typical for such cities as Denau, Kokand, Gulistan, Samarkand, Sariasia. Higher API values - 4.30-5.30 are observed in Almalyk, Angren, Bukhara. In other cities, the API is in the range of 3.20-3.97. Since 2006, the API indicators in the city of Tashkent have fluctuated at the level of 3.32-4.96 points.

According to the Tashkent City Department of Ecology and Environmental Protection, in the first quarter of 2019, the MPC for nitrogen dioxide in the capital amounted to 0.8 (0.97 for the same period in 2018), sulfur dioxide - 0 (0.6), ammonia - 3.0 (2.3), nitrogen oxide - 0.2 (0.29), dust - 0.7 (0.96), carbon monoxide - 0.7 (0.65), hydrogen fluoride - 0.6 (0.58), formaldehyde - 0.016 (0.024).

According to the measurements of Uzhydromet, over the past 10 years, background dust pollution exceeding the average daily MPC by 1.3-2.7 times, and nitrogen dioxide by 1.3-2 times is typical for Tashkent. The excess of the MPC during the year in 10.4-42.7% of cases is recorded in a hot, dry, windless summer-autumn period.

Currently, 95% of the world's population "breathes" air that is unsafe for health. For example, according to the UN, in 2012, more than 7 million people died from diseases caused by air pollution. The WHO estimates that air pollution caused more than 4 million premature deaths in 2016. Inhaled substances and particles of polluted air have a negative effect on the respiratory, cardiovascular, and immune systems [4].

In Tashkent, urban transport is the main mobile source of pollutants, in particular nitrogen dioxide. So, in 2018 - 2019, carried out as part of Operation Clean Air, it turned out that about 6% of the capital's vehicles emit exhaust emissions with increased toxicity and smoke.

In recent years, the situation with atmospheric air pollution has remained stable due to the re-profiling or relocation of production facilities outside the city, the absence of large stationary industrial polluting sources, as well as measures for landscaping the territory.

According to the Tashkent City Department for Ecology and Environmental Protection, 43.6% of the total area of the city of Tashkent is under green space. One person has 69 m<sup>2</sup> of green spaces at a rate of 50 m<sup>2</sup>.

In addition, since March 1, 2007, the import into Uzbekistan of used vehicles for the transport of passengers and medium-duty trucks has been prohibited, and since January 1, 2010 - all vehicles whose engine toxicity level does not correspond to the Euro-3 environmental class.

Thus, the transport industry is the most important component of the country's economy. However, the functioning of transport is accompanied by a significant negative impact on nature and is one of the main air pollutants.

Since the ecological problem of motor transport is of a global nature, its solution remains very urgent.

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