

MOTOR TRANSPORT IS THE MAIN SOURCE OF AIR POLLUTION IN UZBEKISTAN

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Abstract: Recently, the most pressing problem in Uzbekistan is air pollution from road transport, as one of the most important elements of the functioning of the city. The article discusses the causes of air pollution by road transport, as well as ways and measures to reduce the concentration of harmful substances in the atmosphere.

Key words: environmental protection, road transport, sources of air pollution, vehicle fuel, dust, exhaust emissions.

Introduction

In recent years, funds allocated from the State budget for the construction and maintenance of highways have been increasing in the country from year to year. As a result of the attention paid to this area, great changes have occurred.

The length of the highway network in the Republic of Uzbekistan today is 209,496 km (public roads - 42,869 km, inter-farm rural roads, cities, towns, villages and auls - 141,882 km, departmental and inspection roads - 24,745 km).

In total, in 2017-2022, at the expense of the republican and local budgets, 80,531 km of roads were built, reconstructed and repaired, as well as 1,265 bridges and overpasses were reconstructed and repaired [1].

195 km of the A-380 highway "Guzar - Bukhara - Nukus - Beineu", 140 km of the A-373 highway "M-39-Gulistan - Buka - Angren - Kokand and Andijan - through Osh" highway, 179 km of the M-39 highway "Almaty - Bishkek - Tashkent - Termez, 71 km of the M-37 highway "Samarkand - Bukhara - Turkmenbashi", 21 km of the Karshi - Shakhrisabz highway, which are considered international transport corridors of the Republic of Uzbekistan.

A new road with a length of 19.2 km (with overpasses and bridges) was built, passing through the territories of the Kibray and Yukorichirchik districts of the Tashkent region. At 117 km and 121 km of the M-34 Tashkent - Dushanbe highway, 2 overpasses with a length of 235 pm, passing over the railway and highway, were reconstructed.

Along with this, overpasses were built on 935 km of the A-380 "Guzar -

Bukhara - Nukus - Beineu” highway over the railway, at the intersection of the “Gulistan - Akhangaran” highway and 4P-20 “Korasuv - Buka - Bekabad”. During 2023-2027, at the expense of the republican budget, it is planned to build, reconstruct and repair a total of 92,183 km of roads, more than 1,532 bridges and overpasses.

Currently, 5 projects of international financial institutions are being implemented to improve the highway system in the amount of \$834.5 million. Thanks to this, by the end of 2026, 993.4 km of roads will be put into operation in the republic, including 754 km with cement concrete and 239 km with asphalt concrete pavements.

Also, during 2023-2027, at the expense of international financial institutions, 5 projects worth \$920.9 million will be implemented, 177 km of highways and 1947 km of local roads will be repaired and put into operation [2].

In recent years, attention has increased to issues of bringing highways into compliance with the requirements of international standards. In addition, work has been carried out to introduce modern standards in the field of design, construction, reconstruction, repair and maintenance of highways [3].

As of January 1, 2024, the number of private cars in Uzbekistan amounted to 4.02 million units. The number of light vehicles reached 3.75 million units (an increase of 10.6%), cargo vehicles - 240 thousand units (+9.5%). Next come minibuses, buses and specialized transport - more than 20 thousand vehicles.

In 2023, 418 thousand passenger cars were produced, which is 27.4% more than a year earlier. The most popular model was the Chevrolet Cobalt, which was produced in 118 thousand units (+16.1% per year). Damas came in second place with almost 90 thousand cars. Third place went to Lacetti-Gentra (82.1 thousand units), whose production UzAuto Motors stopped this year [4].

Currently, in the transport industry of Uzbekistan there are about 400 motor transport enterprises engaged in freight transportation. With the development of market relations, the number of small and medium-sized motor transport enterprises with a small number of cars has increased. The average age of vehicles is 12 years, including 60% of the fleet has been in use for over 15 years, all of them are completely worn out and are subject to write-off. Moreover, most vehicles do not meet the international Euro 4 standards related to permissible axle loads and environmental restrictions, and, as a result, are not allowed to operate in Europe. All of them are used mainly for transporting goods to Russia and other CIS countries. The vast majority of trucks are privately owned. Objectively, today the vehicles available in Uzbekistan 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 Uzbek vehicles are used to transport goods (such as cotton, construction materials, consumer goods and agricultural products) within the country [5].

Road transport in Uzbekistan accounts for about 6% of foreign trade and 88% of domestic passenger and freight traffic. The private sector accounts for 90% of domestic freight and passenger transport. The annual growth rate of volumes of motor transport services is 20%.

The poor condition of roads not only increases overall transport costs by 20-30%, but also reduces the service life of vehicles. Therefore, the restoration of the national road network has become one of the main priorities of Uzbekistan.

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As of January 1, 2023, the number of passenger cars owned by individuals in the city of Tashkent is 562.1 thousand. The city receives about 50 thousand more cars from other regions and states every day [7].

Compared to 1991 (393 thousand tons), the volume of pollutant emissions from motor vehicles in Tashkent has remained almost unchanged, although the emission rate per vehicle unit has decreased significantly from 2.62 tons to 0.88 tons per year.

This was achieved to a large extent by updating buses and freight transport. In recent years, the most harmful emissions are characterized by pollutants from stationary sources and vehicles [8].

According to preliminary estimates, in 2023 there will be a total volume of emissions of 2138.3 thousand tons, of which 1279.9 thousand tons are emissions from motor vehicles and 858.4 thousand tons from industrial enterprises. At the same time, factors such as low ventilation of atmospheric layers in cities, a large number of transports, large-scale construction, lack of green spaces, meteorological conditions and anthropogenic load lead to high air pollution.

Regional analysis shows that the highest air emissions were registered in the Tashkent region (679.7 thousand tons). The share of motor vehicles amounted to 252.1 thousand tons, industrial enterprises - 427.6 thousand tons.

Conclusion

In Tashkent, emissions into the atmosphere amounted to 417.6 thousand tons, including 396.6 thousand tons (95%) from vehicles and 21 thousand tons (5%) from industrial enterprises.

The Ministry of Ecology, Environmental Protection and Climate Change of Uzbekistan proposed measures to quickly bring atmospheric air in Tashkent to

normal. The Ministry of Ecology has planned a number of works to protect the environment. At industrial enterprises of environmental impact categories 1 and 2, dust and gas cleaning equipment will be installed, and existing ones will be reconstructed and modernized.

Monitoring posts for sources of air pollution will be introduced in these areas, and automatic stations will be installed to monitor the environment.

In addition, the Ministry of Ecology suggests [9]:

- a ban on the use of fuel, in particular, AI-80 gasoline, an environmental category below the Euro-4 standard;
- restriction of the movement of vehicles weighing more than 3.5 and 12 tons, intended for the transportation of goods, during rush hour - from 7:00 to 10:00 and from 17:00 to 20:00 - on the territory of Tashkent in order to reduce traffic congestion and ensuring traffic safety;
- ban on the movement of all types of vehicles manufactured before 2010, provision of benefits, preferences and subsidies to vehicle owners when switching to electric vehicles;
- introduction as an experiment of a rule for driving cars on “odd and even” days to optimize car traffic in order to reduce traffic jams on highways;
- organization of vehicle-free zones on the central streets of the city;
- transfer of public transport to the use of electric, gas-cylinder fuel and other alternative fuels, as well as the organization of road infrastructure;
- announcement and compliance with a moratorium on the construction of all types of facilities (except for facilities of social and state importance);
- a ban on the use of coal for industrial purposes in areas of the Tashkent region adjacent to Tashkent;
- creation of artificial reservoirs in order to ensure the stability of the microclimate, which has a positive effect on the quality of atmospheric air;
- ban on the use of fuel oil as a reserve fuel at heating plants operating in Tashkent;
- creation of a “green belt” around Tashkent to reduce wind speed, prevent the migration of soil particles based on scientific and carefully developed methods;
- installation of scoreboards and monitors that constantly publish atmospheric air quality indicators.

The Ministry of Ecology also named the main factors of air pollution in Tashkent: emissions from vehicles running on low-quality fuel, the use of coal and fuel oil at thermal and power plants, construction work without master plans and cutting down trees.

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