

CAUSES OF AIR POLLUTION IN TASHKENT CITY AND PREVENTION
MEASURES

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Abstract: *In this article, information is given about the fact that recently Tashkent city has been ranked high among the world's major cities in terms of atmospheric air pollution, that is, on the online index IQAir portal, the reasons for this and preventive measures.*

Key words: *Air pollution, particulate matter, climate change, coal fuel, industrial growth, carbon dioxide, atmospheric air, pollution level, sulfur oxide, carbon monoxide, nitrogen oxide, green zone.*

Our country is carrying out consistent work in the field of environmental protection, rational use of natural resources, and improvement of the sanitary and environmental situation.

At the same time, the results of the analysis carried out in this regard indicate the lack of an integrated approach and strategic planning in the implementation of government functions in the field of environmental protection, as well as the insufficient powers of the environmental authority to effectively carry out its tasks.

Recently, we have seen that Tashkent has ranked high among major cities in the world in terms of air pollution, that is, in the online index of the IQAir portal. According to the IQAir portal, based on indicators recorded by Uzhydromet stations, the concentration of fine dispersed particles PM-2.5 in the air of Tashkent was 212 $\mu\text{g}/\text{m}^3$ on those days when it ranked high, which is a classified indicator. as "very harmful" and 42 times the standard set by the World Health Organization... 4 times more.

According to WHO, PM-2.5 is the most dangerous indicator of air pollution.

Based on these circumstances, according to the Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan

One of the main causes of air pollution is the growing demand for coal in economic sectors, in particular, the transfer of greenhouse farms to the use of coal fuel.

Over the past 5 years, the growth rate of coal consumption in the economy has exceeded 22 percent. During this period, the number of greenhouses increased by 2.5 times, and 60 percent of these greenhouses switched to using coal as the main source of heating. In addition, since 2018, the use of coal at the Novo-Angren CHPP in the Tashkent region has doubled.

Experts say that when burning 10 tons of coal, 220 kg of soot, 360 kg of sulfur oxides, 80 kg of carbon and nitrogen oxides are formed.

It can be said that the second factor in air pollution in Tashkent is the growth of industry in Tashkent. There are more than 97,000 industrial enterprises in Uzbekistan,

of which more than 16,000 are located in Tashkent, which, in turn, leads to an increase in emissions of pollutants into the air around Tashkent.

Another factor of pollution is the sharp increase in the number of vehicles: in 2021, 3.14 million cars were registered in Uzbekistan, and in 2023 their number increased by 32% to 4.6 million. Cars running on AI-80 gasoline emit most of the emissions of carbon dioxide and fine particles PM2.5 into the atmosphere. On average, about 730 thousand cars move around Tashkent every day. In addition, up to 300,000 cars enter the capital from the regions per day.

It can be emphasized that one of the main causes of pollution is the use of fuel oil as an additional fuel by heating plants to provide heat to the population. If in 2018 the Tashkent NPP consumed 118.9 thousand tons of fuel oil, today this figure has exceeded 270 thousand tons (an increase of 2.3 times). Over the past five years, the use of fuel oil at the Angren CHPP has almost doubled.

Recently, the green zone of the city of Tashkent and its environs has decreased. In particular, during the moratorium on cutting down trees and shrubs, about 49 thousand trees were illegally cut down.

Air pollution in Tashkent is determined by the direction and speed of wind, air temperature, solar radiation, amount and duration of precipitation, temperature inversions (a layer of warm air that prevents the vertical dispersion of mixed particles) and other natural factors. The city of Tashkent is surrounded by mountains and located deep. Because of this, because the wind does not circulate, the dusty air flow remains in the city, becomes humid and does not go away naturally.

Forecasters give the following recommendations to residents and guests of the city of Tashkent in conditions of severe air pollution:

- ☒ Try not to leave the house as often as possible.
- ☒ When outdoors, you must wear a medical mask and change it every hour.
- ☒ If you experience shortness of breath, runny nose, wheezing, flu, redness and itching of the eyes, severe itching in the throat, or cough, you should immediately contact an allergist.

It is recommended to rinse your nose and throat with a saline solution, keep the windows closed, and spread wet towels in front of the windows.

Now let's look at the following measures proposed by the Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan to reduce and prevent air pollution in Tashkent:

- ☒ ban on the use of motor fuel of an environmental category below the Euro-4 standard (AI-80 gasoline);
- ☒ in order to reduce vehicle traffic and ensure traffic safety, they are designed to transport goods during peak hours of the day (from 07:00 to 10:00 am and from 17:00 to 20:00).), weighing 3.5 and 12 g, limiting the movement of vehicles weighing more than a ton;

☒ a ban on the movement of all types of vehicles manufactured before 2010, the establishment of benefits, preferences and subsidies for vehicle owners to switch to modern vehicles (electric vehicles);

☒ the introduction in recent years, as an experiment to reduce traffic jams on highways, of the rule for driving cars on “odd and even” days in order to optimize the movement of cars;

☒ organization of vehicle-free zones on significant central streets of the city;

☒ transfer of public transport to fully electric, gas and other alternative fuels, as well as the organization of road infrastructure;

☒ announcement of a moratorium on the construction of all types of construction projects (except for objects of social and state significance);

☒ ban on the use of coal fuel for industrial purposes in areas of the Tashkent region adjacent to the city of Tashkent;

☒ creation of artificial reservoirs in order to soften the microclimate and have a positive effect on the quality of atmospheric air;

☒ a strict ban on the use of fuel oil as a backup fuel in heating centers operating in the city of Tashkent;

☒ creation of “green belts” around the city of Tashkent to reduce wind speed and prevent the movement of soil particles based on scientific and carefully researched findings;

☒ installation of scoreboards and monitors that constantly display air quality indicators.

In conclusion, we can say that at industrial enterprises of the 1st and 2nd categories for environmental impact, in order to protect the atmospheric air of the city of Tashkent, dust and gas cleaning equipment will be installed, and the existing ones will be reconstructed, the introduction of monitoring stations for sources of atmospheric air pollution, the installation of automatic environmental monitoring stations environment. This, in turn, makes it possible to control, analyze, eliminate harmful substances at industrial enterprises and stabilize the environmental situation through digitalization of the environmental situation.

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