



PROBLEMS AND SOLUTIONS RELATED TO THE IMPACT OF MOTOR VEHICLES ON ATMOSPHERIC AIR

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Abstract

According to the World Health Organization in 2018, 7 million people die each year as a result of excessive air pollution. Countries in Asia and Africa are particularly high in this indicator. 25 percent of heart disease, 24 percent of stroke, and 43 percent of lung disease and lung cancer in humans are caused by breathing polluted air. According to the United Nations, nine out of ten people in the world breathe polluted air. 91 percent of the world's population lives in areas with polluted air. At the same time, greenhouse gases emitted into the atmosphere are causing global warming and climate change [2]. In our republic, there are more than 3.5 thousand manufacturing enterprises with 99.5 thousand stationary sources of pollution and more than 2.816 million. mobile sources of pollution, i.e. motor vehicles. From 2010 to 2018, the amount of pollutants emitted into the atmosphere increased by almost 1.3 times and amounted to 2.442 million tons in 2018. Of this, 65% or 1 million 560 thousand tons tons of motor vehicles to his/her credit correct comes . Tashkent in the city and this the indicator is 80% will do . In Uzbekistan population soul to the head the number of cars is steep is increasing . This indicator last year increased by 14.5 % during As of January 1 , 2021 Uzbekistan In the Republic physical to individuals relevant the number of vehicles is 2,955,295 organization In Uzbekistan per 1000 people an average of 84 cars correct comes . Other countries with compared to : USA 910 cars per 1000 people , in Australia - 740, in Italy - 625, in Japan - 591, in Germany - 555, in Russia - 369, in Kazakhstan - 250, in Ukraine - 202, in Azerbaijan - 112 correct



will come It 's personal number of cars and the population is increasing increasing going therefore vehicles Tashkent of the city considered to be the main polluting source of atmospheric air . In the last 10 years in the capital the number of cars is two equally more increased , community transport direction networks past It was created in the 80s of the century , but by that time fate perfect in a way again seeing the fact that it did not come out , in the end city community transport in the system serious problems gathered the rest exists the situation again and again complicating it [4].

Keywords: Atmosphere, nitrogen oxide, motor vehicle, population, hygienic demand, sample sulfur dioxide, carbon monoxide, dust, pollution sources,

Introduction

The increasing number of vehicles, the creation of powerful mechanisms and their widespread use have a negative impact on the generous nature, including atmospheric air, causing its deterioration. Automobiles are currently one of the main causes of air pollution in cities. As a result of the increase in the number of world automobile fleets, the share of vehicles in atmospheric pollution is increasing. Automobiles, diesel locomotives, aircraft, tractors consume a large amount of oxygen and emit carbon monoxide into the atmosphere - 260 million tons, volatile hydrocarbons - 40 million tons, nitrogen oxides - 20 million tons, and harmful compounds of lead. The increase in the number of manufacturing plants and cars is causing an increase in the amount of emissions into the atmosphere. An average car used for 6 years emits 9 tons of CO₂, 0.9 tons of CO₂, and 80 kg of hydrocarbons into the atmosphere [2,5] .

After our country gained independence, as a result of the implementation of comprehensive measures to protect atmospheric air, the total amount of pollutants emitted into the atmosphere decreased by almost two times from 1991 to 2006 (from 3.81 million tons in 1991 to 1.92 million tons in 2006), and the level of atmospheric air pollution in many cities and settlements fully met the requirements of sanitary and hygienic standards. At the same time, the amount of pollutants emitted into the atmosphere increased from 2010 to 2016 and



amounted to almost 2.556 million tons in 2016. The increase in the amount of pollutants emitted into the atmosphere can be attributed to the increase in the number of industrial enterprises and vehicles in the process of rapid economic development. In accordance with the Regulation on the "State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection", approved by Resolution No. 29 of the Cabinet of Ministers of January 15, 2019, it is stipulated that heads of legal entities that have a significant negative impact on the environment must establish points (posts) equipped with means of continuous monitoring of the release of pollutants into the environment at their facilities, exercise control over the work of such points (posts), and systematically submit data obtained from such points (posts) [1].

Purpose of Inspections

Residential premises Retrospective analysis of the ecological and hygienic state of atmospheric air over time and assessment of the level of pollution.

Methods and Materials For Testing

Atmospheric air at gas stations, intersections and car washes in the monitoring area , various pollutants, including nitrogen oxide, carbon dioxide, formaldehyde, lead, dust, as well as the legal regulatory document SanQ and M "REC List of Pollutants in Atmospheric Air of Population Areas of the Republic of Uzbekistan" were used.

Results

We conducted a retrospective analysis of the ecological and hygienic state of the atmospheric air in the monitoring area in the dynamics of 2017-2020 and obtained the following results: The total number of samples taken in 2017 was 1902 (100%), of which 263 (13.8%) did not meet hygienic requirements. If we analyze the samples taken in relation to pollutants: a total of 416 samples were taken for dust, of which 115, or 27.5%, for sulfur dioxide, 75 (18.0%) out of 416 samples, for hydrogen sulfide, 88 (5) (6.25%), for nitrogen oxides, 66 (13.3%) out of 496, and for formaldehyde, 57 (1) (1.75%) out of 496 samples, did not meet hygienic



requirements. The total number of samples taken in 2018 was 1950 (100%), of which 323 (16.5%) did not meet hygienic requirements. If we analyze the samples taken in relation to pollutants: a total of 404 samples were taken for dust, of which 141, or 34.9%, for sulfur dioxide, of which 89 (20.4%) were taken, for hydrogen sulfide, of which 101, or 4 (3.9%), for nitrogen oxides, of which 81 (16.3%), and for formaldehyde, of which 2 (4.5%) did not meet hygienic requirements. The total number of samples taken in 2019 was 1677 (100%), of which 198 (11.8%) did not meet hygienic requirements.

If we analyze the samples taken in relation to pollutants: a total of 370 samples were taken for dust, of which 83, or 22.4%, were found to be non-compliant, 62 out of 330 samples were found to be non-compliant for sulfur dioxide (18.7%), 10 out of 96 samples were found to be non-compliant for hydrogen sulfide (10.4%), 43 out of 322 samples were found to be non-compliant for nitrogen oxides (13.3%), and all samples were found to be non-compliant for formaldehyde and ammonia. The total number of samples taken in 2020 was 973 (100%), of which 130 (13.3%) were non-compliant for hygiene requirements. If we analyze the samples taken in relation to pollutants: a total of 290 samples were taken for dust, of which 55, or 18.9%, did not meet hygienic requirements, 32 out of 196 samples for sulfur dioxide (16.3%), 6 out of 36 samples for hydrogen sulfide (16.6%), 75 out of 188 samples for nitrogen oxides (13.2%), 7 out of 26 samples for ammonia (26.9%), and all samples for formaldehyde met hygienic requirements.

Analyzing the results obtained, the total number of samples taken in 2018, compared to all observation years, did not meet hygienic requirements and amounted to 16.5%. In terms of atmospheric air pollutants, in all observation years, samples taken for dust content did not meet hygienic requirements to the greatest extent (2017 - 27.5%; 2018 - 34.9%; 2019 - 18.9% and 2020 - 18.9%) (Figure 1).

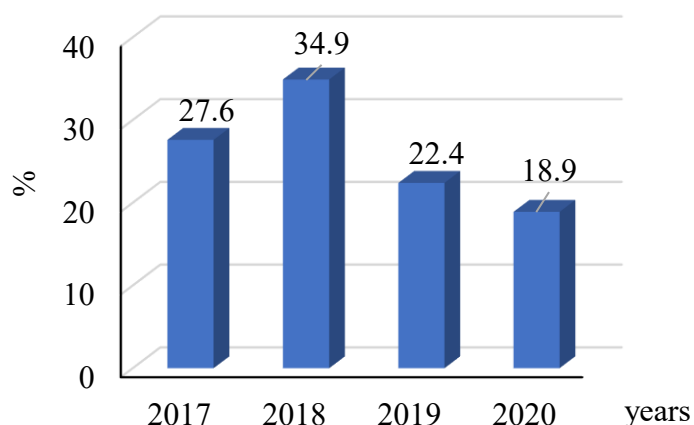


Figure 1. Dust to the norm suitable not coming samples , %

In the samples that did not meet hygienic requirements, sulfur dioxide was found to be the second most common pollutant after dust. In the analysis of atmospheric air pollution with formaldehyde, all samples met hygienic requirements in 2019-2020.

Conclusions

Based on the above, we recommend the following for the sanitary protection of urban atmospheric air: expansion of green areas on the edge of cities and highways. It is desirable to further improve the quality of fuels and to increase the number of environmentally friendly vehicles, including the creation of bike lanes convenient for the general public.

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