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METHODS TO REDUCE EMISSIONS FROM VEHICLES AND THEIR IMPLEMENTATION

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Emissions from motor vehicles are the main source of urban air pollution.

The main methods of reducing emissions from road transport include:

1. Methods of architectural planning:

- rational planning of road traffic flows;
- rational planning of decisions and master plans of residential areas;
- creation of sanitary protection zones and others.

2. Organizational and technical methods:

- equipment of vehicles by means of remote and automatic control;
- improvement of technology of repair and maintenance of vehicles;
- use of vehicles with reduced emissions, changing the structural elements of machines;
- use of environmentally friendly fuel for cars and others.

According to another classification, the main methods of protecting the environment and human health from the negative effects of pollution emissions from vehicles can be summarized as follows.:

- legislative (adoption of regulations on the limitation and regulation of emissions of vehicles);
- organizational (the organization of rational movement, decrease in intensity of traffic flows, roadside checks with use of control and measuring equipment for control of emissions of motor transport, preventive maintenance of the rolling stock, repair of roads, etc.));

- reduction of emissions at source (replacement of diesel vehicles with electric vehicles and others).

The development of alternative modes of transport, as well as the increased use of public transport, is a very effective measure to reduce emissions. The development of Cycling can be proposed as an alternative to road transport. Cycling is very common in developed countries of Europe: the Netherlands, Germany, Belgium, France and others, as well as in the United States and Japan. Developed and tested methods and technical solutions to reduce emissions of road transport in the city

- planting trees and shrubs, turf grasses, reclamation of soils -improvement of system of monitoring of atmospheric air;

- transition to the service of the city population on buses of medium and high power with modern economical engines of Euro-standard;

- development and reconstruction of the city's road network (ensuring non-stop movement of vehicles through the construction of interchanges at different levels, tunnels and pedestrian crossings, increasing the number of lanes on roads, the elimination of narrow entrances and exits from roads, the organization of one-way traffic in areas of urban development with a narrow roadway, having the developed nature of the plan);

- allocation in the Central part of the city of territories with a ban or restriction of movement of heavy vehicles;

- carrying out fuel quality checks at petrol stations (periodic inspections of petrol stations carried out by the owners of petrol stations, revealed the excess of exhaust emissions in raids on toxicity and smoke).

Let us dwell on the last point, as the most unmanageable on the part of the driver and which requires control by the state at the legislative level.

Throughout the world, the qualitative composition of the produced and sold fuel is controlled on a state basis.

In Europe, these are International (foreign) standards of which are widely known and popular, for example:

- SN NS-EN 228:2012 +NA: 2013 Automotive fuels-Unleaded petrol – Requirements and test methods (Automotive fuels – Unleaded gasoline – Requirements and test methods);

- SN NS-EN 590:2013 +NA: 2013 Automotive fuels - Diesel petrol – Requirements and test methods (Automotive fuels – Diesel – Requirements and test methods).

Today, the international standard EN 15940 for diesel fuel, which is synthetic and is made from renewable raw materials by Hydro treating, also attracts attention. Standard EN 15940 ensures the quality of the fuel that automakers simplifies the approval process for the use of fuel for the particular engine.

From 01.01.2016 on the territory of Ukraine in the direction of integration into the European Union, and the Paris agreement on climate change, under the auspices of the United Nations Organization des Nations unies (UN), which was signed in the spring of this year, began to operate the following basic state standards for fuel:

- DSTU 7687: 2015 " gasoline automobile Euro. Technical conditions"
(replaces DSTU 4839:2007);

- DSTU 7688: 2015 «Euro diesel fuel. Technical conditions»
(replaces DSTU 4840:2007).

These standards are designed to ensure the implementation and application of Technical regulations on the requirements for motor gasoline, diesel, marine and boiler fuels, approved by the Cabinet of Ministers of Ukraine on August 1, 2013 № 927. The new standards conform to the standard European technical requirements approved in the European Union for gasoline and diesel fuel of Euro5 class - standards SN NS-EN 228:2012 +NA: 2013 and SN NS-EN 590:2013 +NA:2013 respectively.

A thorough analysis of the existing standards, it can be argued that the European and Ukrainian standards for fuel are not significantly different now, but there is a main difference - in European standards, more stringent requirements for cleaning fuel from particles that pollute the environment.

Naturally, the source of fuel consumption on the car is an internal combustion engine, it follows that to optimize the transportation process by limiting fuel consumption is one of the most important tasks for the Carrier

The implementation of complex of measures on reduction of emissions of motor transport will give a significant reduction effect.