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THE CONCEPT OF GROSS WASTE MANAGEMENT AND THE TRANSITION TO A GREEN ECONOMY IN DEVELOPING COUNTRIES

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ANNOTATION

Awareness of the complexity of the SHW management process leads to the development of the concept of universal waste management (UOW) based on the strategic principles set out in industrialized countries. The principle of waste management is based on the principle that household waste consists of different substances and must be disposed of separately in the most economical and environmentally friendly way, without mixing them with each other.

АННОТАЦИЯ

Осознание сложности процесса обращения с ТБО приводит к разработке концепции универсального обращения с отходами (УОО) на основе стратегических принципов, изложенных в промышленно развитых странах. В основе УОО лежит принцип, согласно которому бытовые отходы состоят из разных веществ и должны утилизироваться раздельно наиболее экономичными и экологически безопасными способами, не смешивая их друг с другом.

Protection of the environment from production and consumption waste, rational and comprehensive use of natural resources, and the implementation of environmentally friendly technologies are inextricably linked. Energy, non-ferrous and ferrous metallurgy, chemical industry and construction industry facilities are the main sources of waste and environmental pollution. At the same time, waste often contains a high proportion of usable secondary resources.

A National Strategy and Action Plan for waste management has been developed in Uzbekistan in cooperation with the United Nations Development Program. This document serves as a strategic direction and a coordinating basis for the work to be carried out in solving waste problems. The strategy is primarily aimed at increasing the effectiveness of public policies and actions in the field of waste management and reducing them, re-using them and secondary processing as much as possible.

The measures taken are aimed at preventing the disappearance of valuable substances and materials along with waste, preventing environmental pollution with toxic industrial and medical waste, and solving the problems of collection and disposal of solid household waste. The step-by-step implementation of the issues provided for in the strategy, taking into account the international obligations of the country, as well as internal characteristics, is carried out with the support of the National Plan.

The growth of the urban population, the concentration of industry in a limited area is causing the deterioration of the ecological conditions in populated areas, especially in large cities.

As in the whole world, the issue of implementation of work related to solid household waste (MSW) is considered urgent in Uzbekistan. Waste is becoming a problem that threatens environmental safety and public health. They have a negative impact on the environment, in

particular land resources, surface and underground water, forests and other plants, as well as animal habitats, air and other objects and components of the environment.

The formation of Solid Household Waste (MSW) depends on many factors, the most important of which are population income, consumer behavior, the appearance of new packaged products on the market, and demographic indicators.

According to the calculations, the annual forecast of the production of MSW in the Republic of Uzbekistan is estimated at 14-14.5 million tons. Taking into account the average population growth rate of 1.5%, it is predicted that this indicator may reach 16-16.7 million tons by 2028.

The simultaneous increase in the number of trade networks (supermarkets, hypermarkets, etc.) along with the growth of GDP per capita leads to an increase in the purchasing power for packaged products, and ultimately the resulting GDP. Urbanization also affects waste generation, with urban residents producing more waste than rural residents.

This rate of growth of the formation of MSW reflects the living conditions of the population and the growth of the republic's economy. However, the need for a systematic, programmatic approach to the modernization and improvement of the system of implementation of work related to the NRC becomes more urgent. Because it is impossible to solve problems in the field without such an approach.

The morphological composition of the MSWs sent to landfills is the following on average in the republic:

o from 10 percent to 25 percent - paper;
o from 35 percent to 45 percent - food waste;
o from 2 percent to 6 percent - wood;
o from 1 percent to 3 percent - metal;
o from 2 percent to 5 percent - flat waste;
o from 1 percent to 2 percent - leather, rubber;
o from 2 percent to 4 percent - glass;
o from 1 percent to 4 percent - plastic;
o 10 percent to 18 percent other inert waste.

Almost all of the generated waste is collected in designated landfills, the number of such landfills in the republic is more than 160. The accumulated MSW from these facilities over the years has led to the fact that most of the landfills are now more than 90 percent full, and in the near future new landfills will be required to bury new waste. Due to the generation of landfill gas, which consists of methane and carbon dioxide, landfills have been the strongest sources of soil and groundwater pollution, and atmospheric pollution for several decades.

In connection with the growing population and needs, the tendency of household waste to grow progressively, as well as from the sanitary-ecological point of view, as well as from the economic point of view, excludes the prospect of using the traditional method of disposal of MSW by collecting it in landfills.

The realization that the process of dealing with MSW is complex leads to the development of the concept of Total Waste Management (TWM) based on the strategic principles outlined in industrialized countries. The rule that household waste consists of various substances and should be disposed of separately in the most economical and ecological way, without mixing them with each other, is the basis of the Environmental Protection Act.

The main principles of CS:
o There are parts that should be used in the MSW approach.
o The problem of dealing with MSW, even if it is the most modern, cannot be solved by choosing a single technology, but taking into account the organizational-management, social and economic aspects (regulators), it can only be solved by combining several technologies that complement each other. can help.
In general, the hierarchical structure of (TWM) has the following several levels:
o waste reduction;
o yellowing;
o recycling;
o destroying.
A hierarchy should be considered, firstly primary waste reduction, followed by secondary reduction measures, secondary use and recycling of the remainder of the waste, and lastly, measures to eliminate fragmentation and destroy or bury waste that cannot be recycled for secondary raw materials.
A holistic approach to the problem of dealing with MSWs should be based on long-term strategic planning. This ensures the necessary flexibility of the programs in case of possible changes in the volume and tracking of waste in the future and in case of the emergence of new technologies. The concept of TWM cannot be adopted uniformly for all cases, as each region will have its own conditions. This means that each region, district, specific place of residence of the population should adopt its own municipal system of solving the problem of dealing with TWM. It should be shaped by taking into account local specific conditions and resources, following two important principles:
o The strategy and purpose of dealing with MSW in "locations" should be based on the general hierarchy of TWM;
o the plan of action should be based on a preliminary study of the waste stream, an assessment of the available options, and include the implementation of small "experiments" that allow for the collection of information and experience, that is, local experience is gained through the development and implementation of small plans.
The participation of municipal authorities, as well as all groups of the population (that is, in fact, the "waste producers" themselves) is a necessary element of any program to solve the problem of waste.
In the period of 2019-2028, a strategy for the implementation of work related to solid household waste was developed in the Republic of Uzbekistan.
In our country, a consistent policy is being implemented in the field of ensuring environmental protection, rational use of natural resources, as well as improving the sanitary and ecological condition of the regions.
In particular, in 2017-2018, large-scale work was carried out to improve the infrastructure of the system for the implementation of work related to solid household waste, 13 sanitary state unitary enterprises and their 172 branches in districts and cities, as well as 9 work related to household waste complex implementation clusters were established. The measures taken made it possible to cover almost half of the population with sanitary cleaning services.

At the same time, the insufficient provision of solid household waste collection and removal services in rural settlements, the unsatisfactory condition of the infrastructure in the field of solid household waste management, the non-compliance of the existing solid household waste landfills with sanitary requirements and environmental standards. -requires the adoption of measures.

The problems in the field of implementation of works related to MSW are extremely urgent, because their solution depends on the creation of favorable conditions for improving the environmental condition, increasing the living standard and quality of the population.

The main problems that hinder the development of the system of implementation of work related to the MSW are manifested in the following:

regulatory legal documents regulating the field of waste-related works are not improved and do not comply with international standards;

in rural settlements, services for collection and removal of MSW are insufficiently provided (40-50%), and these services are almost completely unavailable in remote rural settlements;

The infrastructure in the field of implementation of work related to the MSW is in an unsatisfactory state;

The field of implementation of work related to the MSW is not sufficiently financed both at the state level and at the level of the private sector;

Public-private partnership is not sufficiently developed in the field of implementation of work related to the MSW;

The payment discipline of the population for the services provided for the collection and removal of MSW is low;

There is a low level of public participation in the current system of the implementation of works related to MSW, including their sorting;

the participation of the private sector in the field is insufficient;

the environmental culture of the population is not sufficiently developed.

To help define new approaches in the field of implementation of work related to MSW, to create effective, reliable and socially acceptable complex services for the collection, transportation, disposal, processing and burial of MSW, to reduce the harmful effects of MSW on citizens' health and the environment, to enable the useful contents of MSW to prevent the formation of MSW by extracting it at a high level, to attract them to the economic cycle for the production of goods (products) using modern technologies as a source of additional raw materials, materials, semi-finished products, as well as to ensure the safe burial of MSW.

Its main tasks in achieving the goals of the strategy are:

Improvement of the legislative framework in the field of implementation of work related to the MSW;

improvement of sanitary cleaning industry;

Improving the field of waste disposal and processing;

introducing methods of collection and processing of special MSW (mercury-containing waste, tires, batteries, used oils, packaging waste, etc.) by applying economic mechanisms to the sector;

Improvement of the system of price formation in the field of implementation of works related to MSW;

Creation of conditions for attracting investments in the field of implementation of works related to MSW;
increase the resource capacity of the National People's Republic of China;
Development of the environmental education and training system in issues related to the implementation of work related to the MSW;
To increase the capacity of personnel in the field of implementation of work related to MSW.
The main principles of the strategy are as follows:
Compliance with requirements of legislation in the field of environmental protection at all stages of strategy implementation;
In order to reduce the negative impact of MSW on the environment, to carry out work related to MSW while ensuring control over all processes;
introduction of the "polluter pays" principle, which stipulates that the expenses for the implementation of waste-related works will be covered by the waste generators, and determines the need to create appropriate legal and economic bases;
openness and transparency of the process of providing services in the field of implementation of work related to the MSW on the basis of selection.
Stages of strategy implementation.
The stages of strategy implementation include the following periods:
the first stage (2019-2021) — to improve the legislative framework and economic regulatory mechanisms in the field of implementation of work related to MSW, to ensure the effective organization of services for the collection and removal of MSW, to develop the material and technical base and infrastructure of sanitary cleaning, payment discipline creation of methodical and information support for the development of the environmental education system in the field of strengthening, implementation of work related to the MSW;
the second stage (2022-2028) — development of infrastructure for the sorting of household solid waste, optimization of landfills, construction of reloading stations and waste processing facilities, improvement of activities of clusters for integrated implementation of waste-related works, their potential for processing solid household waste development, as well as achieving the following target indicators:
to reach 100% coverage of the population with solid household waste collection and removal services;
ensure processing of at least 60% of generated solid household waste;
increase the volume of processing of specific solid household waste (waste containing mercury, tires, batteries, used oils, packaging waste, etc.) up to 25%;
reducing the amount of solid household waste sent to landfills by up to 60 percent;
aligning the condition of all landfills with the established requirements, complete recultivation of closed landfill lands;
up to 35% use of alternative energy sources in the objects of work related to solid household waste;
to provide 100 percent monitoring of landfill conditions (control over the condition of underground (seepage) water and atmospheric air).
Ensuring the implementation of the above works, saving resources and reducing the generation of waste, changing the system and structure of the implementation of work related to MSW

towards disposal and recycling, preventing damage to the environment as a result of pollution with waste, waste disposal, processing and creation of necessary conditions to ensure the improvement of environmental, technical and sanitary-hygienic safety of technologies for neutralization are the results of the Strategy.

The solution of tasks related to the development and improvement of the technological base in the field of implementation of works related to MSW will lead to a constant increase in the quality of sanitary cleaning services and the introduction of environmentally and economically effective technological solutions for the disposal, processing and neutralization of MSW.

Optimizing and modernizing the facilities for the placement of MSW ensures their environmental safety and prevents the existing MSW in these facilities from having a negative impact on the environment and the health of citizens.

Comprehensive measures of state support, including economic and legal mechanisms of promotion, allow to ensure the attraction of necessary and sufficient investments in this area and have a positive effect on the socio-economic indicators of the republic's regions.

The operation of the industrial infrastructure ensures that the valuable secondary resources disposed of from the MSW are attracted to economic circulation as much as possible, the production of marketable, new competitive, high-quality ecological products from the secondary resources, the increase of its share in the total circulation of goods, and the saving of natural raw materials from non-renewable sources.

The energy use of the non-renewable part of MSW ensures its preservation by replacing natural raw materials from non-renewable sources, as well as the gradual transition from landfilling MSW to industrial processing.

The creation and implementation of educational programs for the purpose of popularizing scientific knowledge in the field of implementation of work related to the MSW will undoubtedly lead to the formation of public opinion. This will serve to introduce modern systems of implementation of work related to MSW more quickly, as well as to reduce the volume of their formation. At the same time, the developing ecological culture helps to take care of the environment and becomes an obstacle in the way of violations in the field of nature protection.

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