



ROADMAP FOR THE IMPLEMENTATION OF EXTENDED PRODUCER RESPONSIBILITY IN UZBEKISTAN

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Designations and abbreviations

WEEE	-	Waste electronic and electrical equipment
EPR	-	Extended Producer Responsibility
UNITAR	-	United Nations Institute for Training and Research
EEE	-	Electronic and electrical equipment
UN	-	United Nations
CIS	-	Commonwealth of Independent States
JSC	-	Joint-stock company
State Ecology Committee	-	State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection
MSW	-	Municipal solid waste
NGOs	-	non-governmental organization
TN VED	-	Commodity nomenclature of foreign economic activity



Introduction

A great contribution to the development of the system for the collection and processing of waste electronic and electrical equipment (hereinafter referred to as WEEE) is the implementation of the extended producer responsibility mechanism (hereinafter referred to as EPR). However, there is no single way to implement an EPR mechanism, since legal requirements and real conditions differ from country to country, and sometimes even from region to region, which makes it very difficult to compare or compare different EPR mechanisms.

EPR mechanisms can be implemented both through the efforts of individual manufacturers, when each manufacturer is responsible for its category of products, and through collective efforts, and in the form of mixed EPR mechanisms.

This document is a Roadmap for the implementation of the EPR mechanism for waste electronic and electrical equipment in the Republic of Uzbekistan.

In this Roadmap, considering the best international experience and existing conditions in the Republic of Uzbekistan, two schemes for implementing the RRR mechanism are proposed. The proposed schemes will fully allow businesses to most effectively fulfill their obligations for the separate collection and disposal of WEEE, and the Republic of Uzbekistan as a whole to increase the targets for the collection and disposal of waste.

The roadmap was prepared by the Center for Assistance to Sustainable Development with the support of the State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection within the framework of the project “Implementation of the EPR concept into policies and rules for the rational management of electronic waste”, implemented by the International Telecommunication Union and the UN Environment Program.



Brief overview of the current situation in the field of WEEE management in Uzbekistan

Education WEEE

According to the United Nations Institute for Training and Research (hereinafter - UNITAR)¹ in 2019, the average volume of EEE sales in the market of the Republic of Uzbekistan amounted to 5.1 kg per person, and the volume of electronic waste generation in Uzbekistan was 4.2 kg / person.

Figure 1 shows the generation of electronic waste in 2022 by region of the Republic of Uzbekistan, obtained by calculation based on UNITAR data.



Figure 1 - Formation of WEEE in the Republic of Uzbekistan, tons

The level of MSW processing in the country is growing. In 2019, this figure was 19.1%, and in 2021 - 26%. Separate data on the volume of processed WEEE in Uzbekistan are not available.

¹ Project "Regional monitoring of e-waste in the Commonwealth of Independent States (CIS) plus Georgia", 2021



Legislation in the field of WEEE

Uzbekistan has developed legal acts concerning the regulation of certain types of WEEE.

Thus, by the Decree of the Cabinet of Ministers "On streamlining the activities of enterprises for the use and disposal of mercury-containing lamps and devices"² obligations have been introduced for ministries, departments, enterprises, organizations, institutions, regardless of departmental affiliation and ownership, to hand over used and defective mercury-containing lamps, appliances, products, intermediate products and production waste to enterprises and organizations that have the appropriate permits from the State Committee for Ecology of the Republic of Uzbekistan for recycling or neutralization (demercurization) of mercury-containing products.

It is strictly forbidden to make independent disposal or neutralization of mercury-containing products without the appropriate permission of the State Committee for Ecology of the Republic of Uzbekistan.

Regulations on the organization of collection and disposal of used mercury-containing lamps³ it has been established that the collection of exhausted mercury-containing lamps is carried out:

- legal entities that carry out neutralization (demercurization) and disposal of mercury-containing waste, having the necessary technological equipment that has passed environmental and sanitary-hygienic examination (hereinafter referred to as disposal organizations);
- manufacturers of energy-saving lamps, including through points of sale of energy-saving lamps;
- through collection points for household waste using specially installed containers that prevent damage to the lamps and the ingress of mercury-containing substances contained in them into the air, water sources, soil and food products.

According to the Decree of the Cabinet of Ministers "On approval of regulatory legal acts in the field of waste management"⁴ partly regulates the handling of WEEE, including large electronic equipment and end-of-life mercury-containing lamps.

In accordance with the resolution, large-sized household waste includes solid household waste generated as a result of replacing morally and physically obsolete furniture, household appliances (refrigerators, washing machines, televisions, etc.), office equipment (computers, printers, etc.) , technical equipment, vehicles, as well as waste and construction waste generated during the felling and agrotechnical processing of tree and shrub plantations, the size of which does not allow placing them in containers with a volume of 0.75 cubic meters. m.

The removal of bulky household waste is carried out by a service organization for a fee at contractual prices. Consumers are obliged to store bulky household waste in temporary, specially designated places determined by associations of private homeowners, self-government bodies of

²Decree of the Cabinet of Ministers of the Republic of Uzbekistan "On streamlining the activities of enterprises for the use and disposal of mercury-containing lamps and devices" No. 405 dated 10/23/2000

³Decree of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the Regulations on the organization of collection and disposal of exhausted mercury-containing lamps" (No. 266 of September 21, 2011, with the latest amendments of April 30, 2019)

⁴Decree of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of regulatory legal acts in the field of waste management" No. 95 06.02.2019



citizens, managing organizations, and not allow them to be thrown into containers at waste collection points.

According to the Regulation⁵ **on the procedure for handling scrap, waste of non-ferrous and ferrous metals** From June 1, 2019, organizations in the electrical industry are allowed to process non-ferrous scrap and waste generated as a result of their production activities at their own facilities or on a give-and-take basis at specialized manufacturing organizations of the corresponding non-ferrous metals, with the re-engagement of recycled raw materials into production to reduce product costs.

In addition, physically and morally obsolete equipment containing non-ferrous and ferrous metals, written off in the prescribed manner during bankruptcy, liquidation, reconstruction and modernization of organizations, with the exception of those with their own foundry and metal-rolling production (except in cases of bankruptcy and liquidation), is subject to delivery Uzmetkombinat JSC and Uztortsvetmet JSC at a free (contractual) price.

JSC "Uztortsvetmet" should organize in the cities and regional centers of the Republic of Karakalpakstan and regions of the republic specialized collection points for scrap and non-ferrous metal waste from individuals, which are included in the List of household waste and non-ferrous metal waste allowed to be received from individuals. At the same time, electronic and household appliances are included in this list.

Thus, the legal framework of Uzbekistan creates the preconditions for the development of a system for the collection and processing of WEEE. However, further improvement of this system is necessary, including on the issue of introducing the principle of EPR in relation to PPE.

Infrastructure for the collection and processing of WEEE

The Republic of Uzbekistan is in the process of creating an infrastructure for the collection and processing of WEEE. Among the companies that specialize in the processing and disposal of WEEE are Uzmetkombinat JSC, Uztortsvetmet JSC, Toshtrangmetzavod Recycling LLC, Almalyk MMC JSC.

JSC "Uztortsvetmet" an enterprise for the collection of non-ferrous metal waste and their subsequent processing, accepts household non-ferrous metal scrap, including household appliances and equipment, from individuals.

There are 14 branches and 51 collection points of Uztortsvetmet JSC operating in the country. The collected e-waste is manually sorted. Then the components are sent for further processing to specialized enterprises.

Toshtrangmetzavod Recycling LLC accepts and recycles electronic waste. The main activity is assistance to legal entities and government organizations in the write-off and disposal of used electronic equipment. The company has all the necessary permits for the write-off and processing of office equipment, as well as a permit to work with precious metals in accordance with the law of the Republic of Uzbekistan.

JSC "Almalyk MMC" (AMMC)- one of the largest mining and metallurgical enterprises in Uzbekistan. It is a producer of about 90% silver and 20% gold in Uzbekistan, the largest copper

⁵Decree of the Cabinet of Ministers of the Republic of Uzbekistan "On measures to improve the procedure for handling scrap, waste of non-ferrous and ferrous metals" dated June 6, 2018 No. 425



producer in Central Asia. AGMK receives electronic boards for processing from Uzvtortsvetmet JSC. During processing, precious metals are extracted, mainly gold.

JSC "Uzmetkombinat" - is the only authorized body for the procurement (purchase) of scrap and waste of ferrous metals.

These companies mainly serve legal entities and government organizations.

Existing problems in handling WEEE

The current problems hindering the development of a system for the collection and processing of WEEE in Uzbekistan include the following:

1. Lack of national goals for the development of the WEEE management system and clear requirements of the legislation of the Republic of Uzbekistan in the field of mandatory disposal and processing of WEEE waste.

The 2019-2028 Solid Waste Management Strategy does not provide for the need to develop a WEEE management system.

The current legislative acts do not establish clear requirements for handling WEEE. This leads to the fact that most legal entities and individuals are not concerned about the need to transfer WEEE for processing to specialized enterprises.

2. Weak infrastructure in the area of e-waste collection.

The collection points created by Uzvtortsvetmet JSC are not enough to cover the entire population of the country with the coverage of waste collection by EEE. The population does not know where to go and turn in WEEE (monitors, old phones, batteries, etc.) and how to dispose of them.

3. Low public awareness of the hazardous effects of e-waste and existing waste collection and recycling systems.

The population does not realize the seriousness of the consequences that electronic and electrical equipment gets into landfills in the main stream of solid waste. Only a few are aware of the hazardous effects of these wastes. However, very often they are deprived of information about existing collection points for WEEE and are forced to place waste in a common container with MSW.

4. Lack of extended producer responsibility in the country.

Without financial support from manufacturers and suppliers of products, the development of a system for collecting and processing electronic waste is impossible. Therefore, the introduction of extended producer responsibility is one of the priorities in Uzbekistan.

Thus, in order to solve the problem of collection and processing of WEEE in Uzbekistan, it is necessary to take decisive measures in relation to improving legislation, developing the infrastructure for collecting WEEE, raising public awareness and introducing the principle of extended producer responsibility.



Existing mechanisms for implementing extended producer responsibility

General information

The EPR mechanism is used in various countries and industries and has the goal of ensuring the utilization (recycling) of the maximum amount of waste from the use of goods that are subject to disposal after the loss of consumer properties.

Initially, the EPR mechanism began to be introduced into the public policy of some European countries in order to solve the problem of the use and disposal of waste packaging materials, and then many other end-of-life products and goods, such as cars, tires, paper, chemicals, batteries, and electronic and pharmaceutical products.

EPR policy in Europe is developed and implemented in a very heterogeneous manner with a wide variety of implementation models. The basic principle of EPR policy is the same in most countries. The manufacturer or importer pays a fee for the disposal of the packaging of their goods to the state or an authorized EPR operator.

EPR models can be implemented both on the efforts of individual manufacturers, when each manufacturer is responsible for its category of products, and on collective terms. Such arrangements are known as collective EPR programs, which set up Producer Responsibility Organizations (PROs) to collect or dispose of on behalf of producers. That is, EPR organizations collect funds from product manufacturers and send them to the processing and disposal of waste.

In Europe, especially in the WEEE sector, the use of the EPR organization is dominant and this is the most popular model in the world. The legal status of an EPR organization also varies depending on the specific conditions in a country. EPR organizations can be non-profit organizations or state or semi-state institutions, and can also be commercial firms.

Very often, EPR is implemented as mixed EPR mechanisms, considering national circumstances in countries.



State system for the implementation of the EPR

The state EPR system assumes that producers and importers individually register with the relevant state body in order to comply with the legislation in the field of EEE waste management.

What offers	<ul style="list-style-type: none">• Producers and importers register with a government agency and pay a fee for setting up a WEEE collection and recycling system
Who acts as the organisation of the EPR	<ul style="list-style-type: none">• State authority
Payments	<ul style="list-style-type: none">• Payments for collection and disposal go to the public authority in the form of taxes
Example	<ul style="list-style-type: none">• Japan

Japan is a good example of a public EPR system. In 1991, the Law “On the Promotion of the Use of Secondary Resources” was adopted, which formulated the concept of recycling waste as secondary resources and approved the principle of “extended producer responsibility”.

In 2001, a new Fundamental Law on the Formation of a Society with a Sustainable Material Cycle came into force. This law establishes two main principles of state policy in the field of waste management: "polluter pays" and "extended producer responsibility". According to the first principle, the responsibility for reducing the environmental impact of waste management lies directly with the waste producers: industries, municipalities and citizens. According to the second principle, the manufacturer is responsible for the disposal, intermediate processing and disposal of goods and products at the end of their life cycle. Companies are required by law to design products and select materials that are easy to recycle, provide information on how to dispose of them, and label products accordingly. The law establishes that citizens are responsible for preventing the generation and reducing the amount of waste through a longer use of goods and products in everyday life. They are obliged to cooperate with state and local authorities in order to carry out separate collection of waste, as well as the use of products made from recycled materials.

The EPR mechanism for EEE is implemented on the basis of the Law on Recycling of Household Electrical Appliances, which was adopted in 1998 and came into force in 2001. This law applies to refrigerators, air conditioners, televisions, washing machines. It obliges retailers and municipalities to collect and transport disused appliances to recycling plants that appliance manufacturers are required to build, all collection and transport services being paid by consumers. Along with the Law on the Recycling of Household Electrical Appliances, the Law on the Disposal of Old Computers was passed in 2003. According to the requirements of this regulatory legal act, old computers cannot be thrown into landfills and must be sent to recycling facilities without fail. Consumers can leave computers at



the post office or arrange with postal workers to pick them up from their homes and then deliver them to manufacturing companies. You can also use the services of small pickups, often driving around the streets of Japanese cities.

Collective system for the implementation of the EPR

Collective ERP system, in which producers and importers of EEE comply with the law by registering in the system of collective responsibility of producers - in a non-profit foundation.

What offers	<ul style="list-style-type: none">• Producers and importers establish a fund for collective responsibility. The fund organises collection and disposal on behalf of the producers through contracts
Who acts as the organisation of the EPR	<ul style="list-style-type: none">• A non-profit foundation or other organisation set up by producers
Payments	<ul style="list-style-type: none">• All payments go to a non-profit fund• The amount is charged to producers and importers in proportion to their market share
Example	<ul style="list-style-type: none">• The collective system operates in many countries: Germany, Switzerland, Sweden

Sweden is an example of a collective EPR implementation system. The EI-Kresten organization is a company that manages the entire technological chain from collection to recycling of electronic waste. Household e-waste collection centers are funded by Local Regional Authorities (LRAs). All other e-waste management costs (sorting, recovery, recycling, disposal) are covered by EI-Kretsen and the Association of Electronic Waste Recyclers (EÄF).

The collective system is also being implemented in Switzerland. There are two major producer responsibility organizations in the country, EI-Retur and RENAS, which serve up to 94% of the market. EI-Retur is a non-profit organization created by a number of large associations of manufacturers and importers of electronic and electrical equipment to implement producer responsibility. It uses a well-functioning e-waste collection system and is funded by manufacturers and receives a certain amount of money from the government depending on the amount of e-waste collected. RENAS was created by two associations of manufacturers and importers of electronic and electrical equipment. It attracts about 170 companies (organizations), both private and municipal, to collect electronic waste.

Own EPR implementation system

The own system assumes that producers independently organize the collection and processing of waste without paying any fees.



What offers	<ul style="list-style-type: none">• The producer will organise the collection and disposal of the EE by himself
Who acts as the organisation of the EPR	<ul style="list-style-type: none">• Product producer
Payments	<ul style="list-style-type: none">• No payments
Example	<ul style="list-style-type: none">• France

France is an example of a well-developed domestic EPR system. The EPR principle in the French Environmental Code is stated as follows: "Producers, importers and distributors of products and their elements and materials used in their manufacture are obliged to ensure or contribute to the organization of the prevention and management of waste arising from them."

Under the EPR mechanism in France, EEE manufacturers are liable for end-of-life devices that they put on the market. Moreover, targets have been set for the collection of used equipment, as well as targets for its recycling and recovery.

When purchasing a new EEE in a store or online, each consumer pays an environmental fee, which varies depending on the product purchased and the type of treatment required at the end of its useful life. In accordance with French law, the environmental fee is indicated on the labels and separately from the price of the product.

Under French law, manufacturers, importers and distributors subject to EPR obligations must establish their own system for collecting and processing their products individually.

Individual systems for organizing the processing of waste from manufactured products must be approved by the state. Manufacturers, importers or distributors must demonstrate that they have the technical and financial capability to meet government regulations. Every six years, the submitted individual recycling scheme must be re-approved at the state level.

Even though EPR is individual in nature, product manufacturers have the freedom to choose to organize waste management collectively through an eco-organization.

In the case of an eco-organization, producers pay a financial contribution (eco-fee) and transfer their obligation to organize the management of their waste.

Eco-organizations are also approved by the state. Eco-organizations are also required to provide information on the technical and financial possibilities of organizing a waste management system, which should be established in accordance with state requirements and development goals. The maximum period of a work permit is six years. After the expiration of the term, eco-organizations are obliged to re-submit the dossier with a feasibility study to the state.



Mixed EPR Implementation System

A mixed system involves a combination of the systems listed above.

What offers	<ul style="list-style-type: none">• The producer can build an EE recycling plant, contract with a recycling company or join an EPR organisation
Who acts as the organisation of the EPR	<ul style="list-style-type: none">• Producer• Existing ROP organisation
Payments	<ul style="list-style-type: none">• depending on the type of EPR chosen
Example	<ul style="list-style-type: none">• South Korea

South Korea is a good example of a mixed EPR system. In South Korea, in 2003, the law "On the introduction of extended producer responsibility for the disposal of WEEE" was passed. The Ministry of Ecology sets recycling targets by product type, which range from 55 to 70% by product weight. The producer can either build a WEEE recycling plant, contract with a recycling company, or join a Producer's Responsibility Organization (pay a fee).

General conclusions

As international experience shows, the implementation of the EPR mechanism has a great contribution to the development of the waste collection and processing system, in particular WEEE. However, there is no single way to implement an EPR mechanism because legal requirements and actual conditions differ from country to country, and sometimes even from region to region, making it very difficult to compare or compare different EPR mechanisms. However, the successful experience of countries that have implemented the RRR mechanism over the past 30 years shows that in order to implement the RRR mechanism, it is necessary to provide for the following key decisions and practical measures:

1. The EPR mechanism should address products for which separate waste management has clear benefits, such as WEEE, packaging and end-of-life vehicles.
2. The EPR mechanism should apply to both domestic producers and importers.
3. Legislation should provide for the establishment of Producer Responsibility Organizations, through which companies can collectively fulfill their obligations to collect and recycle, or establish their own systems for the collection and disposal of EPR.
4. All producers and importers in the industry (with the exception of those who satisfy the conditions of non-participation in the PPR) should participate in the ownership of the producer responsibility organization and the costs of its operation.



5. Financial contributions should be determined by a simple formula, for example, based on the sales or imports of the goods in question of each company in the previous year.
6. Collection and recycling targets for producer responsibility organizations should be set by the responsible government agency and significant financial penalties should be imposed on the organizations and their shareholding companies if they are not met.



Goals of EPR implementation in Uzbekistan

The main idea of the EPR mechanism is to create an efficient system for collecting, maximizing the use of secondary resources, and reducing the amount of waste for disposal. This is in line with the national waste management policy of the Republic of Uzbekistan, which is defined by the Strategy⁶ on the management of solid domestic waste in the Republic of Uzbekistan for 2019-2028 and is aimed at the formation and development of a sustainable system in the field of solid domestic waste (hereinafter referred to as MSW).

The introduction of the EPR mechanism in Uzbekistan will allow:

- reduce waste generation and reduce the negative impact of waste on the environment;
- move to a circular economy by extracting from waste and reusing the maximum amount of secondary material resources;
- create a convenient infrastructure for the population to collect secondary material resources for further disposal;
- introduce the most recyclable materials into the production process and refuse to use materials that cannot be recycled;
- encourage the use of reusable and sustainable packaging;
- develop the industry for the collection and processing of waste, create infrastructure and facilities for the processing and disposal of waste;
- achieve high targets for waste disposal and recycling.

⁶Decree of the President of the Republic of Uzbekistan dated April 17, 2019 No. PP-4291 "On approval of the Strategy for the management of solid household waste in the Republic of Uzbekistan for the period 2019-2028"



Necessary measures to implement the EPR concept in Uzbekistan

Selection of an effective mechanism for the implementation of the EPR

Currently, Uzbekistan has introduced a recycling fee for wheeled vehicles, self-propelled vehicles and trailers for them. Payments are collected: by the State Customs Committee - when importing to Uzbekistan and by the State Tax Committee - when producing (assembling, manufacturing) in Uzbekistan.

This EPR implementation mechanism is used in some countries. However, international experience shows that it does not allow achieving high efficiency from EPR.

The success of the implementation of the EPR is often ensured by the use of differentiated approaches in relation to different types of goods/waste.

Based on the best international experience, as well as the current situation in the country, it is proposed to introduce another mechanism for WEEE, considering the specifics of WEEE management.

Below are two mechanisms for implementing the EPR for WEEE, based on international experience and the current situation in Uzbekistan. The government of Uzbekistan and stakeholders should choose one of the options for implementing the EPR mechanism, weighing the pros and cons of one or another mechanism.

Mechanism 1: Implementation of the EPR through a government agency

Within the framework of this mechanism, the organization of the EPR is the Fund for Ecology, Environmental Protection and Waste Management, which operates under the State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection.

The State Committee for Ecology sets targets for the collection and processing of WEEE, develops a legislative framework for the implementation of the EPR. The Fund, in turn, is responsible for the creation and development of waste management infrastructure. All payments from manufacturers and importers will go to the Fund.

However, under the state scheme, producers and importers will not be able to participate in the activities of the Fund and in control over the targeted use of proceeds.

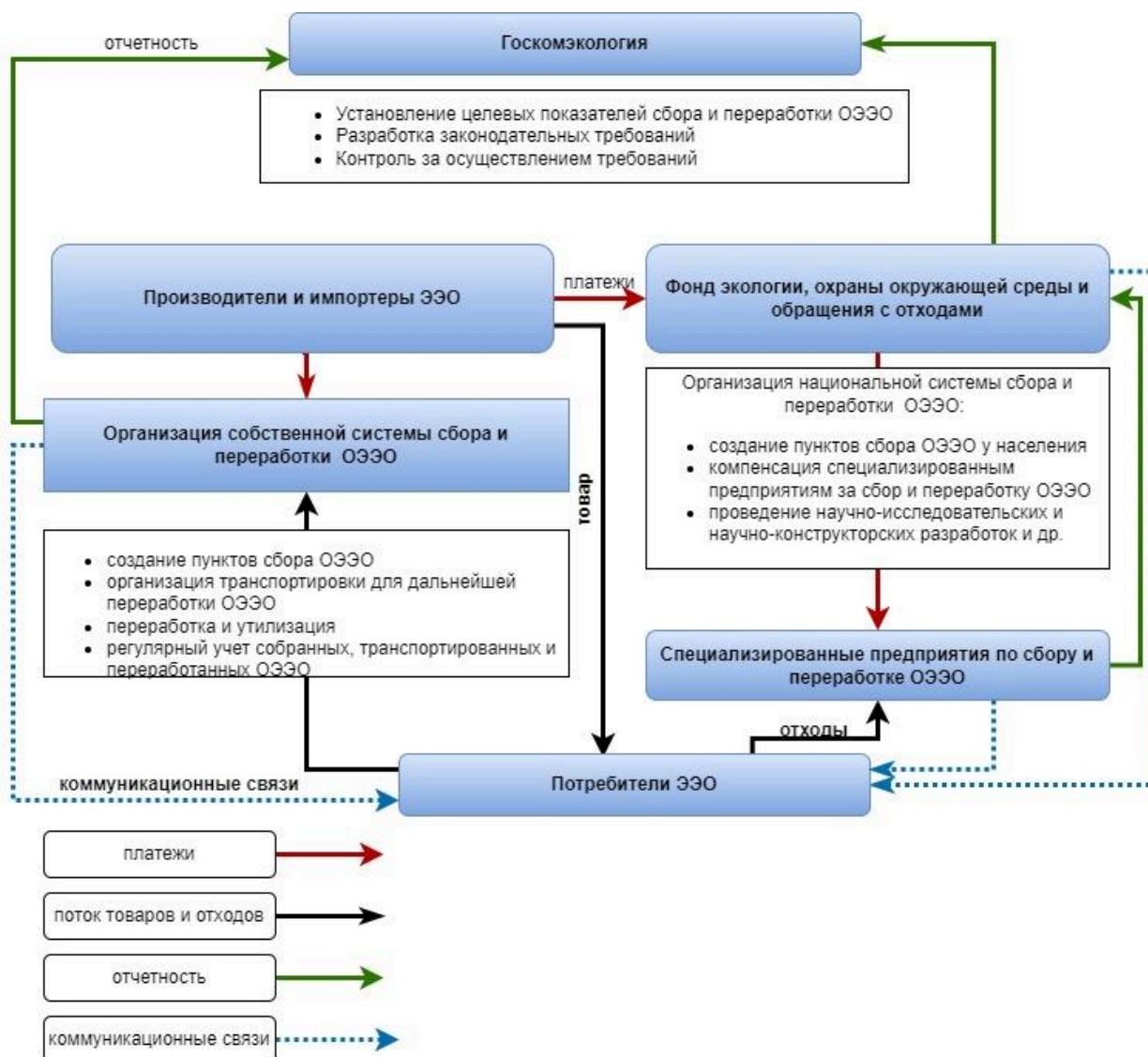


Figure 2 - Scheme for the implementation of the EPR based on the state system

When introducing a state EPR system, it is necessary to enable producers and importers to organize their own EPR system in accordance with the established targets. That is, manufacturers and importers will have the choice to pay a disposal fee to the Fund or organize their own system for the collection and processing of WEEE.

Mechanism 2: Implementation of the EPR through an organization controlled by EEE producers and providers

This mechanism is based on the collective responsibility of producers. In this case, the Association of Electrotechnical Enterprises of Uzbekistan (Association Uzeltekhsanoat) or a newly created organization in the form of a non-profit corporate fund can act as an EPR organization.

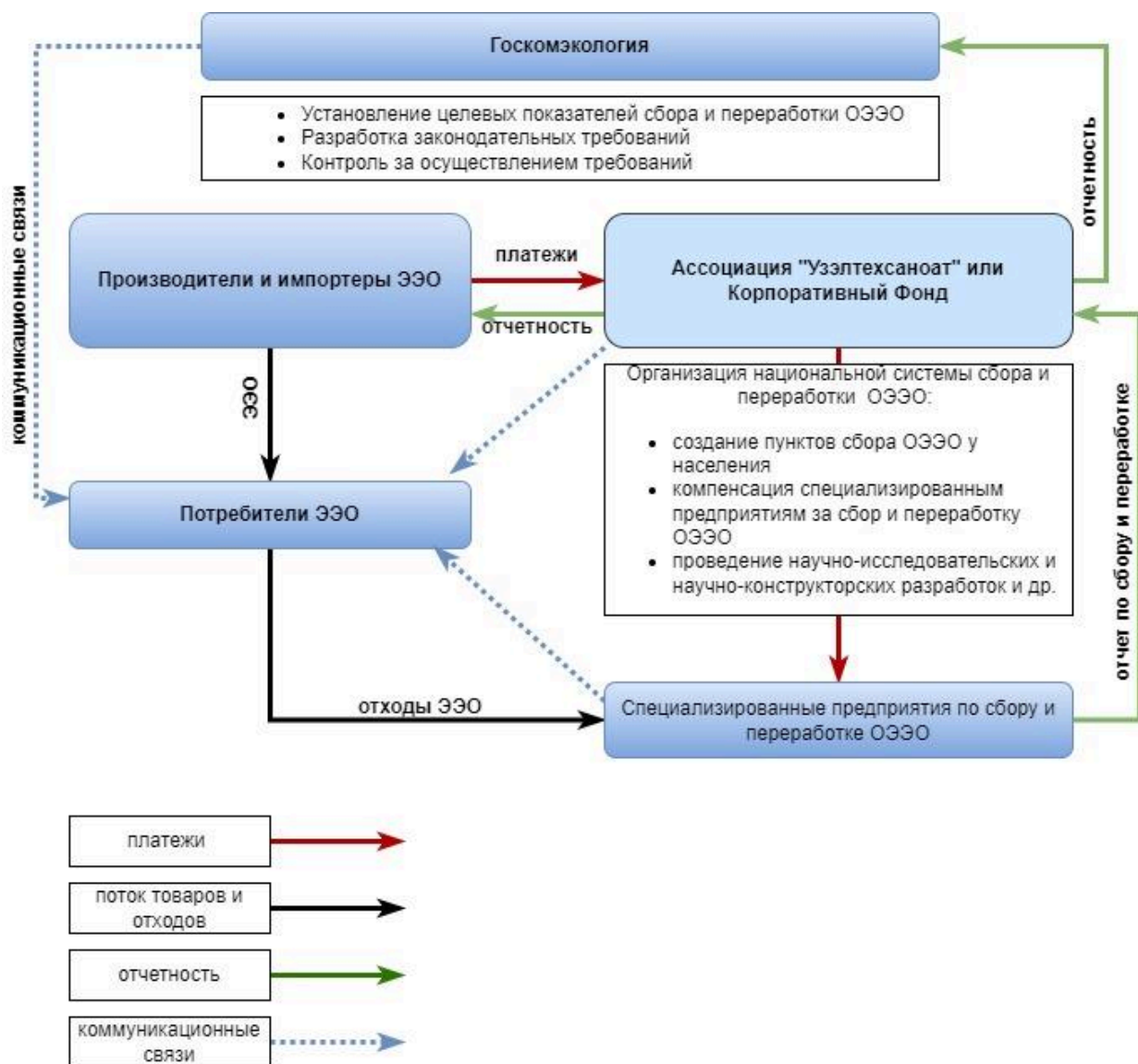


Figure 3 - EPR Implementation Scheme Based on Collective Responsibility

In 2019, the Electrotechnical Industry Development Fund was established under the Uzeltekhsanoat Association, which can allocate grants for scientific and technical developments in the electrical field, finance start-up projects, and more.

Association "Uzeltekhsanoat" or a newly created corporate fund will accumulate the financial resources of producers aimed at the collection and disposal of products and manage these funds. The Association/Corporate Fund must have a Management Board. The Board will exercise control over the activities of the Association in terms of the implementation of the PPR mechanism or the Corporate Fund, in order to prevent misuse of funds and exclude corruption violations.

Association "Uzeltekhsanoat" or the Corporate Fund will attract specialized enterprises for the collection, disposal and / or processing on a tender basis. Specialized enterprises will report to the



Uzeltekhsanoat Association or the Corporate Fund for the results of their activities. Association "Uzeltekhsanoat" or the Corporate Fund, in turn, will report to the Board and the State Committee for Ecology.

Manufacturers and importers will be able to actively participate in the organization of the system for the collection and processing of WEEE, control the targeted spending of funds and the achievement of targets for the collection and disposal of waste. At the same time, the authorized body in the field of environmental protection and ecology will receive timely reports on the implementation of established targets and control the activities of the Association or the Corporate Fund.

With a collective EPR system, it should also be possible for manufacturers and suppliers to organize their own EPR system in accordance with established targets.

Table 1 provides a brief comparative analysis of the two proposed mechanisms for the implementation of the EPR in Uzbekistan.

Table 1 - Comparison of the proposed mechanisms for the implementation of the EPR

Implementation of the EPR through a government agency	Implementation of the EPR through an organization controlled by EEE producers and suppliers
Operator - state organization	Operator - controlled by manufacturers/suppliers
The state sets tariffs for the collection and recycling	The market regulates the amount of payment for collection and recycling
Costs out of control	Controlled costs
State control	Business control

The proposed mechanisms for the implementation of the EPR fully comply with international experience and will improve the system of separate collection, transportation, sorting and disposal of products after they lose their consumer properties.

Introduction of amendments and additions to the legislation of Uzbekistan

It is necessary to revise the current legislation and by-laws in terms of introducing changes and additions on the implementation of the optimal EPR mechanism in relation to WEEE.

In this regard, it is advisable to establish the general requirements for the implementation of the EPR in the Law "On Waste" following the example of the legislation of the European Union, and set out the specific requirements in separate by-laws.

At the legislative level, the basic requirements for product manufacturers should be fixed, which include:



- product design that facilitates rapid disassembly into components and reuse after repair or replacement of individual components;
- collection of used products and waste arising after its use independently or with the involvement of entities that collect, utilize and/or recycle within the targets set by government agencies;
- subsequent management of these wastes;
- financial responsibility for this activity;
- providing information to the public on possible ways of disposal/recycling of products after their use.

The requirements of the EPR should apply to manufacturers (suppliers or importers) putting the relevant products into circulation on the market of the Republic of Uzbekistan. At the initial stage of implementation, the EPR should cover the most common types of products.

- Heating and cooling equipment
- Screens, monitors, equipment containing screens
- Lamps
- Large Equipment
- small equipment
- Mobile information and telecommunication equipment

The list of these products must be approved by a separate by-law.

In the future (after several years of operation of the EPR mechanism), the list of products can be expanded. The list of products must include the name of the product and the HS code. This will allow the products to be more clearly identified.

In order to avoid duplication of obligations under the EPR in relation to the manufacturer and supplier or importer of the same product, the EPR must be implemented for the same product either by the manufacturer or by the importer if the products are imported to the market of Uzbekistan, or by the supplier if it is determined by the terms of delivery manufactured, imported products.

Formation of target indicators for the effectiveness of the EPR

The EPR principle cannot completely solve the problem of WEEE and does not assume the full responsibility of producers and importers for the waste that is generated after the use of products.

In the global community, EPR is introduced gradually in accordance with the targets set at the national or regional level for specific types of products. Gradually, with the development of infrastructure and the establishment of a WEEE management system, it is allowed to increase the targets.

It is recommended to set targets for different groups of electronic and electrical equipment. Table 2-3 presents the targets set by Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012.



Table 2 - Minimum waste recovery targets in force in 2012-2018 in the European Union

EEE categories	Minimum waste recovery targets	
	August 13, 2012 to August 14, 2015	August 15, 2015 to August 14, 2018
Large equipment, vending equipment	- 80% to be recovered - 75% to be recycled	- 85% to be recovered - 80% must be prepared for reuse and recycled
Information and telecommunications equipment, household appliances and photovoltaic panels	- 75% to be recovered - 65% to be recycled	- 80% to be recovered - 70% must be prepared for reuse and recycled
Small appliances, lighting products, electric and electronic instruments, toys, sports and leisure equipment, medical products, control and monitoring instruments	- 70% to be recovered - 50% to be recycled	- 75% to be recovered - 55% must be prepared for reuse and recycled
Discharge lamps	80% to be recycled	80% to be recycled

Table 3 - Minimum waste recovery targets set since August 15, 2018

Categories	Targets
Heating and cooling equipment and large equipment	- 85% to be recovered - 80% must be prepared for reuse and recycled
Screens, monitors, equipment containing screens	- 80% to be recovered - 70% must be prepared for reuse and recycled
Small-sized equipment and Small-sized information and telecommunication equipment	- 75% to be recovered - 55% must be prepared for reuse and recycled
Lamps	80% to be recycled

Target indicators for the collection and processing of WEEE in Uzbekistan should be set by the State Committee for Ecology, and if they are not met, significant financial sanctions should be imposed on organizations responsible for fulfilling EPR obligations. At the same time, waste collection targets should be based on the amount of EEE produced, it is also necessary to take into account differences in the life cycle of products, the presence and absence of EEE with a long life cycle. According to current estimates, a collection rate of 85% of the number of EEE produced is generally equivalent to



a collection rate of 65% of the average weight of EEE placed on the market over the previous three years.

Target indicators can be set only after analyzing the data on the volume of EEE production in the Republic of Uzbekistan and discussing with all interested parties, in particular manufacturers and importers.

Development of infrastructure for separate collection, transportation, sorting and disposal of products

The implementation of the EPR does not remove the responsibility for the collection and disposal/recycling of waste from the state. It is necessary to legislate the responsibility for the formation of infrastructure for the collection, disposal and / or processing of waste and the promotion of waste disposal and reduction of their generation for local authorities or other state bodies.

In many European countries, collection centers for household e-waste are organized or funded by local regional authorities, and all other costs for handling e-waste (sorting, transportation, recovery, recycling, disposal) are covered by the EPR organization or by the producers themselves.

The role of the state is to create the necessary infrastructure for the separate collection and disposal/recycling of waste, as well as to stimulate the activities of enterprises for the collection and disposal of waste and encourage the population to return the used EEE to producers or processors.

Separate collection of WEEE is a prerequisite for ensuring the special treatment and processing of WEEE. Consumers should actively contribute to the collection of WEEE. To do this, suitable places for the return of WEEE must be established, including public collection points that allow the public to return waste.

As part of infrastructure development, it is necessary to:

1. Organize (expand) accessible WEEE collection points that will accept household appliances (TVs, tape recorders, electric toys, irons, energy-saving lamps, batteries, hair dryers, kitchen equipment, including refrigerators, etc.), org. equipment (computers and components, cell phones, tablets, copiers, scanners, toners, etc.), mercury-containing waste (fluorescent lamps, energy-saving lamps, thermometers, etc.).

2. Organize mobile WEEE collection points. These points are very important for that group of the population that does not have the opportunity to bring old and broken equipment to the collection point on their own. Mobile collection points are specially equipped vehicles that can come on call and pick up equipment free of charge. This method is suitable for residents of remote areas, the elderly and people with disabilities.

3. Place eco-boxes, specialized containers, special nets in public places (for example, in large supermarkets, shopping and entertainment centers, electronics stores) to collect electrical equipment, used batteries and light bulbs.

Capacity Building and Awareness of Stakeholders

For the effective operation of the ERR mechanism, it is necessary to identify all stakeholders, determine their roles and responsibilities at the beginning of the implementation of the ERR mechanism. It is necessary to legally establish and distribute responsibility between manufacturers and authorities for certain categories of WEEE.



Key stakeholders include: State Ecology Committee, authorities, manufacturers/importers, retailers/shops, WEEE consumers, WEEE collection and processing companies, and NGOs.

Table 4 shows the area of responsibility of stakeholders in the implementation of the EPR mechanism for WEEE.

Table 4 - Table of areas of responsibility of stakeholders in the implementation of the EPR mechanism for WEEE

No.	Subjects of the EPR	Roles and responsibilities
1.	State Ecology Committee	<ul style="list-style-type: none"> • Development and adoption of legislative acts for the implementation of the EPR mechanism • Development and approval of the EPR implementation scheme • Development and approval of targets for waste collection and recycling • Creation of a list of manufacturers/importers of products subject to the EPR mechanism • Creation of a list of goods subject to the EPR mechanism • Establish requirements for manufacturers and importers for their own EPR system • ensuring compliance with the requirements of the EPR • WEEE collection and disposal control • Maintain data on WEEE collectors and processors • Dissemination of information about the EPR mechanism
2.	Local authorities / khokimiyats	<ul style="list-style-type: none"> • Facilitate the creation of enterprises for the collection and disposal of WEEE • Provision of land plots for the installation of containers for separate collection • Creation of conditions for the development of entrepreneurial activities in the field of waste management • Informing the public about separate collection
3.	Producers/importers of EEE	<ul style="list-style-type: none"> • Registration in the list of manufacturers of products subject to the EPR mechanism • Ensuring the organization and functioning of its own or collective WEEE management system (depending on the type of EPR) • Ensuring product labeling • Provision of data on production volume • Providing data on the collection and processing of WEEE
4.	Retailers / EEE shops	<ul style="list-style-type: none"> • Ensuring acceptance of WEEE under appropriate conditions • Consumer information
5.	Companies dealing collection and processing WEEE	<ul style="list-style-type: none"> • Registration in the database of waste collectors and processors • Collection, sorting, disassembly and recycling of WEEE • Providing reports on the volume of collection and disposal of WEEE
6.	EEE consumers	<ul style="list-style-type: none"> • Participation in the existing system of separate waste collection



7.	NGOs	<ul style="list-style-type: none"> • Aiding state bodies in informing the population about separate collection, about waste collection points, information about the EPR mechanism
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At the stage of establishing a system for the collection and processing of WEEE, it is important to increase the capacity and awareness of stakeholders. Table 5 provides a list of stakeholders and issues that need to be considered during various meetings, trainings, seminars, round tables, etc.

Table 5 - Capacity Building and Stakeholder Training

No.	Parties concerned	Issues to Consider in Training and Capacity Building
1	Decision-makers in the formation of policy and legal requirements for the management of WEEE: government agencies, manufacturers and suppliers of WEEE, industry associations.	International requirements for the management of WEEE, effective waste collection and recycling systems, as well as mechanisms for implementing extended producer responsibility in various countries.
2	E-waste generators, specialized waste management companies, service centers	Safe handling of WEEE at various stages of the waste life cycle.
3	NGOs	Handling WEEE, informing about problems, risks and government actions in this area.
4	Population	Negative consequences for the environment and human health associated with inefficient management of WEEE (information companies, pilot projects).

Ensuring transparency, control and accounting for the fulfillment of the requirements of the EPR

A reporting system should be established to collect data on products subject to the EPR mechanism, and data on the collection and disposal of waste from these products, identifying waste streams, if necessary, as well as other necessary data.

Ensuring equal treatment of producers of products, regardless of their origin or size, without imposing a disproportionate regulatory burden on producers of a small number of products, including small and medium-sized enterprises.



Action plan for the implementation of the EPR concept in Uzbekistan

No.	Events	Deadlines	Performers	Completion Form
Introduction of amendments and additions to the legislation of Uzbekistan				
1	Consultation workshop with all stakeholders to discuss the mechanisms for the implementation of the EPR in Uzbekistan	September 2022	State Committee for Ecology, international experts	Seminar Report
2	Establishment of a Working Group to discuss the EPR mechanism and amend the legislation	October - November 2022	State Committee for Ecology, Association Uzeltekhsanoat	Minutes on the establishment of the working group, minutes of the first meeting
3	Preparation of the Draft Law "On Amendments and Additions to the Law "On Waste" in the part of the EPR	January 2023	State Ecology Committee, international, national experts	Version of the Draft Law
4	Preparation of draft Rules for the implementation of the EPR, including national targets for the collection and processing of WEEE, and a list of products that fall under the requirements of the EPR	March 2023	State Ecology Committee, international, national experts	Project Rules for the implementation of the EPR and the list of products that fall under the requirements of the EPR
5	Approval of the Draft Law on the Introduction of Amendments and Additions to the Law "On Waste" and the draft Rules for the implementation of the EPR and the list of products that fall under the requirements of the EPR in accordance with established procedures	March - June 2023	State Ecology Committee	Final version of the Draft Law and Rules



6	Conducting round tables, meetings to discuss the EPR mechanism with the participation of all interested parties	October 2022 – June 2023	State Committee for Ecology, Association Uzeltekhsanoat, stakeholders	Event logs
Development of infrastructure for separate collection, transportation, sorting and disposal of products				
1	Introducing amendments and additions to the law "On Waste" within the competence of local authorities in order to secure their competence to allocate land plots for the construction and (or) placement of municipal waste management facilities, including for the arrangement of container sites and collection points for secondary raw materials; ensuring the creation and operation of the necessary infrastructure for business entities engaged in the activities of separate collection and disposal / processing of waste, as well as stimulating the activities of enterprises for the collection and disposal of waste.	March 2023	State Ecology Committee, khokimiyats	Updated version of the Waste Law
Capacity Building and Awareness of Stakeholders				
1	Consulting seminars, round tables for government agencies, manufacturers and suppliers of EEE, industry associations.	2022-2023	State Committee for Ecology, stakeholders	Reports
2	Training seminars for WEEE educators, specialized waste management companies, service centers.	2022-2023	State Committee for Ecology, stakeholders	Reports
3	Carrying out an information campaign, implementation of pilot projects for the population about the negative consequences for the environment and human health associated with inefficient management of WEEE.	2022-2023	State Committee for Ecology, stakeholders	Reports