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International SAICM Implementation Project (ISIP)

In 2010, in an effort to demonstrate SAICM implementation via IPEN Participating Organizations, IPEN launched an International SAICM Implementation Project, also known as ISIP. ISIP aims to mobilize resources for initial enabling activities pertaining to national priorities, in keeping with the work areas set out in the strategic objectives of section IV of the SAICM Overarching Policy Strategy.

In particular, the ISIP supports the Governance objective of SAICM's Overarching Policy Strategy paragraph 26, which calls for enhanced "cooperation on the sound management of chemicals between Governments, the private sector and civil society at the national, regional and global levels."

In addition, ISIP builds on the 2008-2009 Global SAICM Outreach Campaign to raise awareness about SAICM and strengthen collaboration among the public interest, health and labor sectors.

ISIP Objectives

ISIP's four objectives include:

- Promoting the need for sound chemicals management
- Advancing National SAICM Implementation
- Promoting global SAICM implementation by global civil society
- Building capacity among NGOs developing countries and countries with economies in transition

Title of activity: Analysis of electronic and electric waste disposal system in the Republic of Kazakhstan

NGO: Center "Cooperation for Sustainable Development"

Country: Kazakhstan

Date: November, 2012

Elements of SAICM Covered:

Activities relating to identification and assessment of where issues relating to the sound management of chemicals arise during the lifespan of electrical and electronic products, including the design of such products, green chemistry, recycling and disposal, in particular in the context of the requirements of the Basel and Stockholm conventions, participation in the workshop on electronic waste to be held in the margins of the meeting of the Open-ended Working Group meeting of the Basel Convention and follow up recommendations and options for the SAICM OEWG and ICCM3 (ICCM2 decision II/4)

Description of the current practices for dealing with e-waste and near end of life electrical equipment:
Waste Disposal Practices in Kazakhstan

Control of waste disposal practices in the Republic of Kazakhstan (hereinafter – RoK) is based on requirements of the Ecology Code of RoK and includes blanket and specific controls.

The blanket control is realized within the system of physical and legal bodies' environmental functions and includes the following elements:

- 1) an environmental impact assessment is the procedure that covers assessment of probable impact on the environment and health due to some economic and other activities, drafting of negative impact prevention measures (destruction, degradation, damage and depletion of natural environmental systems and assets), and rehabilitation of the environment;
- 2) an ecological expert evaluation to be carried out in order to define and limit probable negative effects of implementation of any planned management, economic, investment, regulatory and other activities on the environment and health, and also to balance interests of economic growth and environmental protection, to avoid third-parties losses in the course of natural resources use;
- 3) standardization of waste disposal;
- 4) ecology permits for waste disposal;
- 5) industrial environmental monitoring;
- 6) disposal fees;
- 7) reports.

The specific control of waste management in Kazakhstan is implemented in the life cycles of an enterprise at engineering, construction, operation and closing stages. Also, waste management is carried out in the life cycle of wastes themselves: formation, storage, transportation, disposal and burial. Moreover, specific control is assigned for hazardous and domestic waste, and requirements are set for such waste management stages as planning (waste management program), implementation (waste disposal), accounting and reporting.

Situation with electronic waste

Presently there are not any specific requirements set for the EEE waste disposal in Kazakhstan. So these wastes are collected together with domestic waste and disposed at landfills. According to some data, the servicing centers and marts hide generated waste, break it into components and throw it in domestic waste containers.

The global practice of EEE waste handling incorporates the following approaches:

- 1) the cost of waste recycling is added to the production value;
- 2) the waste collection facilities are located in marts and at special-purpose sites within cities;
- 4) municipal services are involved in waste transportation;
- 5) the legal entities are obligated to maintain contracts with recycling companies;
- 6) the principle of extended producer responsibility;
- 7) involvement of servicing centers to waste collection and pre-sorting;
- 8) gathering of out-of-date equipment to the benefit of lower-income populations.

At the same time there are companies in Kazakhstan that collect and recycle EEE waste by sorting EEE components into single pieces and further disposal of such pieces. However, as activities of specialized companies in the area of waste handling are not controlled in Kazakhstan, there are facts that expose dishonest attitudes towards waste disposal. Such companies accept EEE waste for recycling and submit a record on recycling, however actually they send EEE waste to domestic waste landfills that are not intended for components with hazardous substances.

According to annual information of the Kazakhstan Quarterly PC Tracker, the number of computers is growing by 26% every year.. During 1998 – 2008, over 2 million computer units

were delivered to Kazakhstan. According to BRIF Research Group data, every month in Kazakhstan 120-140 thousand cell phones are sold. According to the research results of IDC Kazakhstan Quarterly PC Tracker, in the fourth quarter of 2011 the Kazakhstani personal computers market was supplied with 261.5 thousand units. In comparing with the same quarter in 2010, the market growth amounts to 70.3%. Notebook computers made up 77.2% of the market scope (201.9 th. units), and desktop PC – 22.8% (59.6 th. units).

By Electronics TakeBack Fund's appraisal, there are about 126,000 tons of electronic waste generated in Kazakhstan annually. According to the new electronic equipment importing statistics, the EEE waste generation quantity will grow in future.

Description of health and environmental effects of current waste handling practices:

Currently the most popular practice of electronic waste disposal in Kazakhstan is EEE waste removal to landfills and disposal sites.

Such waste disposal practices cause the following problems:

- 1) contamination of underground water with persistent organic pollutants and heavy metals;
- 2) soil contamination with heavy metals;
- 3) toxic substances ingress to air;
- 4) high number of human sicknesses due to exposure to persistent organic pollution and heavy metals;
- 5) rapid overfill of existing landfills and disposal sites;
- 6) lack of areas suitable for landfills at a proper distance from large cities. Urban development crowds landfills out for long distances. In combination with land price growth this factor increases the cost of EEE waste transportation to landfills;
- 7) a number of precious metals that some EEE consist of must be buried permanently.

Electronic wastes contain such hazardous substances as lead, mercury, antimony, cadmium, hexavalent chromium alloy, brominated fire retardants, polyvinylchloride and other hazardous substances that may build up in a human body, therefore even minor quantities of such substances are hazardous and quite harmful to health. At landfills and disposal sites, heavy metals from electronic waste ingress into soil, groundwater and/or air (if it is burned), thus coming to the human body from food, water and air.

If these substances enter the human body, it may be impacted as follows:

1. cadmium – can build up in the liver, kidneys, bones and the thyroid body and cause carcinogenesis disease;
2. antimony – has irritating and cumulative action. While building up in the thyroid body, it arrests functioning and causes hypothyrosis. Symptoms: nose bleeds, antimonial fume fever, pulmonary fibrosis, dermhelminthiasis, sexual dysfunction;
3. lead – builds up mainly in kidneys and causes problems with kidneys and brain diseases. It has a strong effect on children (emotional disorders, learning incapability) and pregnant women;
4. mercury – affects brains, the nervous system, kidneys and the liver. It causes emotional disorders, visual and hearing loop, disordered motor function, anorexy, nausea and respiratory illnesses;
5. brominated fire retardants are extremely toxic compounds, able to affect the nervous and genital systems and cause oncological diseases. Long-term impact may cause disorders of brain and thyroid hormones.
6. Polyvinylchloride (PVC) is made of vinyl chloride polymerization which is a hazardous poison that may destruct the nervous system and cause oncological diseases. In order to make PVC elastic it is supplemented with so called plasticizers: phthalates or phthalate ethers, which if entering the human body, may damage the liver and kidneys, reduce human defenses, cause

infertility and cancer. In the course of production and burning there are dioxins emitted to the air that are toxic even in minor concentrations.

Description of existing legislation on waste management:

RoK legislation in relation to waste disposal

Kazakhstan has joined three international conventions in the area of waste disposal and chemical safety as follows: Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal (Kazakhstan had joined the Convention by Law of RoK No389-II, dated February 10th, 2003), Stockholm Convention on Persistent Organic Pollutants (validated by RoK Law No259-III, dated June 7th, 2007) and Rotterdam Convention on the Procedure of Justified Tentative Agreement in Regards to Certain Hazardous Substances and Pesticides in the International Business (validated by RoK Law No239, dated March 20th, 2007). These conventions control some hazardous substances that are in composition of EEE waste.

At present time Kazakhstan has no specific control of electronic and electric equipment waste. This type of waste is handled on the basis of common regulatory legal acts. Waste related legislation includes norms and requirements of various legislative and regulatory RoK documents as pertaining to waste disposal: Codes, Laws, the Government's decrees, orders of ministers, technical regulations, state standards, interstate standards, regulatory documents etc. In many cases requirements in regulatory documents do not match and contradict each other.

The main regulatory legal act that sets requirements in the area of waste handling is the Ecology Code RoK, approved in 2007.

To establish requirements as pertaining to waste handling and to implement provisions of the Ecology Code of RoK, the Government and competent authorities approved a set of legislative acts. Basic regulatory legal acts and regulatory documents of the Republic of Kazakhstan are listed in Appendix 1 of this report.

Provisions of the Ecology Code of RoK in relation to waste

The Ecology Code of RoK sets a definition of industrial waste and consumer waste. Industrial waste includes remnants of raw materials, materials, other items and products generated in the course of production that had lost its initial consumer attributes completely or partially. Consumer wastes represent remnants of products, items and other substances generating during consumption or operation, and also goods (products) with initial consumer properties completely or partially lost.

Industrial and consumer wastes are split into hazardous and non-hazardous. Hazardous wastes include the following substances:

- explosives;
- highly inflammable liquids;
- highly inflammable solids;
- self-igniting substances and wastes;
- oxidizers;
- organic peroxides;
- poisonous substances;
- toxic substances causing protracted and chronic diseases;
- infective diseases;
- corrosive substances;
- ecotoxic substances;
- substances or wastes that emit fire-hazardous gases if in contact with water;
- substances or wastes that may emit toxic gases if in contact with air or water;
- substances and materials with ability to create other materials with one of properties above.

A hazard level and wastes coding are defined on the basis of the wastes classifier, approved by the environmental protection competent authority.

In accordance with the existing wastes classifier the electronic waste (for instance pc boards, electronic base elements that can generate base and precious metals) are referred to Index G (green list). Glass scrap from cathode-ray tubes and other activated glass are referred to Index (amber list).

The Ecology Code sets the following general requirements (principles) of waste disposal:

- contamination prevention (reduction of waste generation);
- separate wastes collection;
- hazardous wastes certification;
- disposal as deep as practically possible;
- priority of waste disposal and recycling prior to burial;
- burial by an ecologically safe method.

The Ecology Code defines duties of local executive authorities in regards to organization of the rational and ecologically safe system of municipal waste collection that provides for:

- separate collection of components of value;
- temporary storage;
- regular removal of wastes;
- disinfection of municipal wastes;
- cleanout of communities' area.

RoK legislation in regards to black, non-ferrous and precious metals

All types of EEE are manufactured using black and non-ferrous metals. RoK legislation in relation to black and non-ferrous metals wastes handling is controlled by Decree No80 of the Government RoK, dated January 31, 2008, "About approval of Rules for licensing and qualification requirements set for collection (preparation), storage, recycling and sale of non-ferrous and black metals waste and scrap by legal entities".

Besides black and non-ferrous metals, some types of EEE contain precious metals. Such equipment is not subject to any specific control in Kazakhstan. Issues of precious stones and metals handling in RoK are controlled by Law of RoK No57-III "About foreign exchange restrictions and control", dated June 13, 2005. However, this Law does not cover handling processes of wastes that contain precious stones and metals.

Waste disposal accounting

The waste owner must keep records (type, quantity and origin), and also gather and keep information on properties of wastes that pose hazards for the environment and (or) human health. People dealing with waste disposal and generators of hazardous wastes must keep regular records (type, quantity, properties) of generated, collected, hauled, cycled or disposed wastes in the course of the production process. Waste owners must keep all wastes accounting documentation for 5 years.

Waste owners must submit an annual report on the business activity in relation to waste handling to the environmental protection competent authority so these wastes are registered in the State Waste Registry. The environmental protection competent authority is entitled to demand any information from physical and legal bodies on output products and wastes generated during the manufacturing process. Primary statistical data on waste shall be submitted in compliance with state statistics legislation of the Republic of Kazakhstan.

Control over execution of the waste handling legislative requirements

Observance of environmental requirements when handling domestic waste shall be controlled by local executive authorities, the environmental protection competent authority and the sanitary epidemiological state authority.

Observance of requirements on waste disposal at landfills and landfills maintenance shall be controlled by the environmental protection competent authority.

The documents below contain instructions on control, inspection and supervision over appropriate waste removal and safe operation of waste disposal sites in Kazakhstan:

- Instruction on governmental control of environmental protection by officers of the Environmental Protection Central Executive Authority of the Republic of Kazakhstan, No371- , dated September 18, 2000.
- Instruction on governmental control of environmental protection from contamination with industrial waste, No 03.7.0.6.02-94, dated January 9, 1995.
- Instruction on governmental control of waterworks technical condition at waste (products) disposal sites of industrial enterprises of the Republic of Kazakhstan, No 03.7.06.05-96, dated July 2, 1997.
- Guidelines for sanitary and epidemiological authorities and organizations in related to control over environmental protection measures from contamination with solid and liquid toxic waste from industrial enterprises, No3.05.069.97

Draft technical regulations in regards to safe handling of the municipal waste

In order to establish compulsory requirements that ensure health and environmental protection when handling municipal waste, the Ministry of Environmental Protection of RoK has put forward an initiative to elaborate technical regulations for safe municipal waste handling.

The objective of these technical regulations is to establish safety requirements for municipal waste life cycle processes, elaboration of requirements for the Ecology Code on separate waste collection and recycling of valuable components, and also separation and disinfection of hazardous components coming from municipal waste, including EEE wastes.

The technical regulations cover general and specific requirements at all stages of municipal waste life cycle: collection, storage, transportation, treatment, recycling and disposal at landfills.

Municipal waste per types shall be separated immediately at a source of its generation. Primary parts of waste collected separately can be paper and paperboard, packing materials, glass, black and non-ferrous materials scrap, organic waste, and hazardous waste.

Moreover, the technical regulations establish specific requirements for handling of certain types of municipal waste: electronic waste, organic waste, spent chemical power sources and packing waste, for the purpose of special control of these types of waste. Presently in Kazakhstan these wastes are collected jointly with domestic waste and buried at landfills in spite of their hazardous properties and high waste recoverability.

Implementation of the technical regulations highly depends on local executive authorities which, according to the Ecology Code, must ensure an optimum system of waste collection subject to specifics of all regions of the Republic. Implementation of the effective waste collection system can be facilitated by manufacturers and suppliers of such goods that generate hazardous waste during their life cycle. First of all, such goods include accumulators, batteries, electronic and electric equipment. It is required to implement the Extended Producer Responsibility in Kazakhstan, which provides for creation of the used products treatment system. The technical regulations on safe municipal waste handling establish a standard for manufacturers and suppliers of products. It is a voluntary approach and is not obligatory for producers.

Draft state RoK standard in relation to safe electronic waste handling

At present time the Ministry of Environmental Protection of RoK works on preparation of a set of regulatory acts on waste handling, including the draft State RoK Standard (ST RoK) “Electronic and electric equipment waste safe handling methods”.

The draft ST RoK on electronic and electric equipment waste safe handling establishes fundamental provisions and safety requirements for how EEE waste is handled. Provisions of the standard will apply to products and manufacturers regardless of sales methods, including online and electronic sales. The standard must cover all EEE types used by consumers and professional equipment.

The definition of Producer Responsibility in the draft standard is one of the methods of EEE engineering and manufacturing promotion that considers and facilitates its repair, virtual improvement, repeated use, equipment dismounting and disposal. EEE manufacturers must promote engineering and production of such equipment that can be dismounted and disposed in particular for repeated use and disposal of EEE waste, its components and materials.

Separate collection of EEE waste established in the draft standard is the prerequisite for assurance of recycling and disposal of such type of waste in Kazakhstan. Separate collection of EEE waste and its further disposal and recycling will make it possible to achieve the level of human health and environmental protection needed.

Project Outcomes:

Description of the activity conducted:

For the purpose of Project implementation a work plan was developed (Appendix 2). Afterwards all Project activities were carried out according to this plan.

1. Formation of the Work Project Group and duties assignment

In order to analyze the system of EEE waste handling in Kazakhstan in the course of the Project, a Work Group was formed. Initially the Work Group consisted of Vera Mustaphina – Director of “Promotion of Sustainable Development” Center, Yuliya Dushkina – Project Manager, Aigerim Alimbaeva – Project Coordinator, Anuar Temirtashev and Svetlana Smirnova – Executors of the Project. Later, the Work Group member Anuar Temirtashev was replaced with Almat Satubaldin.

Vera Mustaphina was the Project Coordinator. The Project coordination scope included resolution of organizational issues (approval of the project proposal, preparation of a budget, approval and signing of the contract), formation of the Project Work Group, conclusion of contracts with experts – members of the Project Work Group, participation in meetings of the Project Work Group, preparation and editing of the report and elaboration of recommendations.

Within the Project scope coordination Yuliya Dushkina worked on resolution of organization issues, formation of the Project Work Group, generation of an actions plan, and participation in meetings of the Work Group. She analyzed the legislation of the Republic of Kazakhstan, participated in preparation of questionnaires and official letters within the Project, executed a questionnaire survey and interviewing, and developed recommendations and an issue-related report. For the purpose of information gathering on electronic waste harm, she participated in seminars with 10 form students of school No105 and the chemical safety master-class with candidates for the master’s degree and teachers of the Kazakh Economic University named after T. Ryskulov. As part of preparation and conduction of the campaign on separate electronic waste collection, she participated in preparation of agitation materials for the campaign, press releases and the campaign results.

Almat Satubaldin held negotiations with Almaty City Hakimat and Balkhash Alakol Ecology Department, participated in questionnaire preparation, the questionnaire survey and interviewing of electronic equipment suppliers and water recycling specialized enterprises. For the purpose of informational support, he held negotiations with “Center tyazhesti”, “Vse vmeste” and “Alpha” Internet resources, carrying out a social line at these platforms. In order to distribute information on electronic waste harm, he conducted seminars in School No105 and KazNU named after Al Pharabi. As part of preparation and conduction of the campaign on separate electronic waste collection, he worked on organizational issues, searched for additional financing, participated in preparation of agitation materials for the campaign and in the agitation campaign itself and distributed information about EEE waste hazards. Also he took part in drafting recommendations and this report.

Svetlana Smirnova participated in meetings of the Project Work Group, formed a database, and carried out the questionnaire survey and interviewing.

Aigerim Alimnaeva took part in meetings of the Project Work Group, worked out the questionnaire forms, and carried out the questionnaire survey and interviewing of population, in schools and senior colleges. She created a group in “Vkontakte” Social Network in order to contact Internet users.

Nicolai Chmelevskiy is the organizer of the Round table.

2. State authorities’ support

For the purpose of extended information distribution and support of state authorities a letter was sent to Almaty City Hakimat and Balkhash Alakol Ecology Department of the Ministry of Environmental Protection of the Republic of Kazakhstan which was approved (Appendices 3 and 4). These two state agencies control issues of waste handling in Almaty City.

3. Analysis of waste handling legislation of the Republic of Kazakhstan

The Work Group members analyzed the legislation and regulatory base of RoK in relation to waste management. The following regulatory documents were reviewed during the analysis: RoK laws and codes, subordinate legislative acts, regulatory documents.

Results of the analysis are described in the paragraph “Description of the existing legislation on waste management”.

4. Creation of target group of participants databases

In order to carry out the questionnaire survey there was a database created containing contact information of target group participants.

The database includes five tabs for the following target groups: EEE suppliers, EEE sellers, EEE repair and service centers, waste recycling specialized enterprises, and governmental organizations (schools, senior colleges).

The group of EEE suppliers consists of: “Planeta Electroniki”, “TECHODOM”, “Sulpak”, “ALSER”, “LogyCom”. EEE repair and service centers that participated in the questionnaire survey: “Ascon-7”, “Technodom Service”, “Vinita System Almaty”. The group of EEE waste recycling specialized enterprises consists of: “RG Servise”, “Altyngo”, “Technopark 2030”.

5. Questionnaires drafting

Each target group has a questionnaire prepared in relation to EEE waste handling aspects typical for representatives of this target group. Questionnaire templates were discussed at the Work Group joint meeting and updated subject to comments received. Appendix 5 displays the questionnaire for the EEE suppliers’ group (suppliers, importers). Appendix 6 contains the questionnaire for EEE repair and service centers’ group. Appendix 7 – the questionnaire for waste handling enterprises’ group. Appendix 8 – the questionnaire for school and senior college students’ group. The questionnaire for Almaty citizens is shown in Appendix 9.

In addition, there was a supplement form prepared for representatives of non-governmental organizations (Appendix 10).

6. Questionnaire survey

The questionnaires were sent via faxes and e-mails to representatives of the target groups covered by the Project. The questionnaires for representatives of specialized organizations were given personally during the meeting held jointly with Balkhash Alakol Ecology Department.

In order to clarify all issues that might occur when filling in the questionnaires, the Work Group members carried out consultations with the target group participants.

Internet resources were used to carry out the questionnaire survey of the public. There were agreements in place with large Kazakhstani web-sites as “Center tyazhesti” (ct.kz), “Vse vmeste” (vse.kz) and “Alpha” (alfa.kz) in regards to informational support of the Project. These web-sites published information on the Project kickoff and placed the questionnaires on their sites. This measure helped involve 133 people to respond to the questionnaire survey via the internet.

We met with 10 form students in school No105 named after O.Zhandosov to analyze EEE waste handling in schools and to spread information on electronic waste hazards to Almaty students. During the meeting with students, hazards of electronic wastes and methods of safe waste handling were explained. Also, students had filled in the questionnaires on EEE wastes handling practices.

In all, during the questionnaire survey 3 questionnaires were received from “Manufacturers (Suppliers)” group, 3 forms – “Service Centers” group, 2 forms – “EEE waste collection and recycling organizations” group, 5 forms – “Governmental organizations” group, 184 responses from the Almaty public, including 133 from Internet questionnaires, 41 – from students and 10 – the public interviewing.

7. Analysis of the questionnaires

All forms received from the target groups’ questionnaire survey were processed and analyzed by the Work Group.

Questionnaire results are listed in the paragraph “Target group exposure”.

8. Preparation and carrying out of “Separate waste collection: the day of old electronics collection” Action

In the course of EEE waste handling analysis and negotiations with waste disposal and recycling companies it was noted that there is a problem with used equipment and mercury-containing waste gathering from the public.

In this effect the Work Group had decided to carry out an Action on EEE and mercury-containing wastes collection from the public so that public attention was given to the problem of hazardous waste disposal and recycling.

The Action “Separate waste collection: DAY OF OLD ELECTRONICS COLLECTION” was organized on May 12, 2012 in Almaty. The local of EEE waste collection site was at the address: Bukhar-zhyrau str. corner of Khamit Ergali str.

The Action was aimed at popularization of waste collection among Almaty public, drawing a public eye to problems of electronic waste disposal and recycling, identification of any problems that may occur when people collect hazardous wastes.

In the process of preparation for the Action there was an agreement made with the Non-government organization “Posadiderevo.kz” on joint management of the Action. This Action was supported by SD “Mineral resources and nature management for Almaty City” (assistance in the

Action organization); IP "RG-service" (acceptance of electronic waste and appliances, financial support); GCP "Almatyecologstroy" (acceptance of mercury-containing waste), JSC "Tartyp" – organization of the wastes collection site. Informational support of the Action was given by Almaty TV-channel and "Vecherniy Almaty" Newspaper.

Under the Action the public donated office equipment for disposal and recycling (computers and components, cell phones, copying and scanning machines etc.), mercury-containing waste (luminescent tubes, energy-saving bulbs, thermometers etc.), home appliances (TV-sets, irons, fans etc.). All wastes were accepted free of charge.

People were invited to the Action via Internet resources in social networks, and by posting the Action posters and news-sheets in senior colleges, schools and micro districts in vicinity to the wastes collection site. Volunteers of NGO "Posadiderevo.kz" had posted 200 posters and 800 news-sheets, carried out an agitation activity with people. Appendix 11 displays news-sheets distributed for the Action.

The Action was covered in mass media: reporters of "Almaty" TV-channel prepared a video clip that was shown in the evening News on May 12, 2012, in Kazakh – 20.30, in Russian – 21.00. Results of the Action were published in "Vecherniy Almaty" Newspaper on May 17th.

This Action helped in information distribution among the public on possibility to and need for separate collection of electronic wastes, and available resources of waste-removal and recycling companies. The Action has resulted in mitigation of negative environmental impact due to reduction of hazardous electronic waste share placed at the landfill. All participants of the Action were granted a diploma and received explanations about separate collection of waste, including electronic and mercury containing wastes.

This Action is the first one not in Almaty only but in Kazakhstan. In future it is planned to conduct series of electronic and other hazardous wastes separate collection actions in all regions of Kazakhstan.

9. Holding of the Round table "Improvement of electronic wastes collection and disposal system in Kazakhstan"

On May 18, 2012, the Round table "Improvement of electronic wastes collection and disposal system in Kazakhstan" was held with the purpose to discuss problems of EEE wastes handling, to prepare recommendations on electronic waste collection and disposal improvement and also to inform representatives of industrial enterprises on the Project "Analysis of electronic and electric equipment wastes handling system in the Republic of Kazakhstan".

The Round table included representatives of state authorities, EEE waste handling specialized organizations and industrial enterprises. The list of participants is given in Appendix 12.

In the Round table discussions were held about legislative requirements RoK in the area of wastes handling, results of the Project, and results of the Action on separate electronic waste collection held on May 12, 2012. Also in the course of the Round table there were EEE wastes collection and disposal specialized companies introduced, they spoke on possibilities of EEE waste collection and disposal in Almaty and also in the whole area of Kazakhstan. Appendix 13 contains the program of the Round table "Improvement of electronic waste collection and disposal system in Kazakhstan".

During the Round table the current problems with EEE waste collection and disposal were discussed. The main problem is regional separateness of EEE wastes disposal enterprises. Mainly the specialized organizations are located in Almaty City and Almaty Oblast; meanwhile, other regions of Kazakhstan have much less of such companies. EEE wastes hauling from one region to the other is quite an issue due to the large area of Kazakhstan (RoK area occupies 2 mln. 724.9 th. km²). The other problem of the acceptable EEE wastes collection and disposal system in Kazakhstan is poor information distribution among the public in relation to the harms

of electronic waste, and that it is needed to separately collect such waste and pass it to the recycling specialized companies. Also, one more problem is the presence of dishonest companies that collect EEE wastes for disposal purposes; however, actually 100% of such wastes are sent to landfills or disposal sites, or they throw crushed EEE wastes to domestic waste containers.

In the result of the discussion of the existing problems of EEE wastes collection and disposal, the Round table participants made a list of recommendations shown in the paragraph “NGO Recommendations for next steps” of the Report.

10. Drafting recommendations on improvement of electronic waste collection and disposal system

Within the scope of target groups representatives questioning and interviewing, meetings with governmental authorities and EEE wastes recycling specialized companies, the Action “Separate waste collection: DAY OF OLD ELECTRONICS COLLECTION,” the Work Group members prepared recommendations on improvement of the EEE wastes collection and recycling system.

Recommendations on improvement of the EEE wastes collection and recycling system are listed in paragraphs “Impact on target policies” and “NGO Recommendations for next steps” of the report.

11. Drafting the issue-related report

Results obtained during implementation of the Project on analysis of EEE wastes handling system in Kazakhstan are compiled in the form of this report.

Description of results of target groups questioning

1. EEE manufacturers and suppliers

In Kazakhstan, Joint Stock Company “LG Electronics Almaty Kazakhstan” deals with manufacturing electronic equipment. This company produces TV-sets and washing machines by assembly of pre-fabricated parts supplied from Korea.

According to the contract with components suppliers, all parts with defects are sent back to the manufacturer in Korea. “LG Electronics Almaty Kazakhstan” passes its own equipment, if failed, to the specialized companies. The company does not deal with replacement of broken electronic and electric goods with new ones or failed EE with other goods. Also “LG Electronics Almaty Kazakhstan” does not accept any failed or broken EEE from the public.

According to information from the company, there were 686.4 kg of computer equipment, 1235 pcs mercury containing bulbs in 2011 and 832 mercury containing bulbs during January – May 2012. There is not any division (department) of electric and electronic equipment disposal (repeated use) in “LG Electronics Almaty Kazakhstan”. Computer products of “LG Electronics Almaty Kazakhstan” are disposed by “Technic Destroy” Company. Electronic wastes are not removed to landfills and/or disposal sites. Further, the company plans to utilize EEE through waste disposal specialized companies only.

The majority of electronic equipment is imported to Kazakhstan from other countries. Quite often equipment suppliers deal with equipment manufacturing for the Kazakhstani market or pass this right to dealers.

EEE dealing companies have contracts for EEE recycling and disposal with suppliers and service centers or special agreements for EEE recycling, disposal or return. In shops, their own equipment, if failed, is sent for repairs. Equipment units beyond repair are stored at the warehouse for further sending to EEE wastes recycling specialized organizations.

Some marts do not employ a service of broken EEE replacement with a new one. At the same time, other marts do replacements on the basis of Law of the Republic of Kazakhstan No274-IV "About consumers' protection", dated May 4, 2010. The similar situation is typical for replacement of failed equipment. Some marts do not do any replacement, meanwhile other marts employ this service based on the Law of the Republic of Kazakhstan "About consumers' protection".

Broken or failed EEE are accepted for repairs right in marts (if there is such a service) or the consumer contacts the authorized service center on his own.

Companies dealing with EEE sales have no divisions or departments for EEE disposal and recycling. At the end of EEE life cycle, marts send wastes for disposal and recycling to EEE wastes handling specialized organizations. We learned via questioning the EEE-selling companies about the volume of electric and electronic waste that the amount they send to landfills amounts to 100 %.

In future these companies plan to employ EEE wastes disposal and recycling specialized companies.

2. *EEE repair and service centers*

The questioning results demonstrate that EEE repair and service centers do not have contracts in place for EEE wastes disposal and recycling with EEE manufacturers. After repairs are done the service centers return home appliances to clients. Failed EEE beyond repair are also returned to the client. According to questionnaires from service centers they do not have any electronic and electric equipment waste generated as repaired equipment and equipment beyond repair are returned to clients, and they send their own EEE waste to manufacturers.

3. *EEE waste handling specialized enterprises*

Waste handling specialized enterprises dealing with EEE wastes collection, transportation, recycling and utilization receive fixed assets written off from organizations and also waste of service centers. These organizations accept waste from governmental organizations free of charge, and EEE wastes from private companies for a fee. Certain specialized companies accept electronic waste from the public. Acceptance of EEE wastes for recycling is executed as per acceptance acts. The specialized companies carry out their own activities without any support from the government.

Presently there is one station of electronic waste collection in Almaty located in the office of "RG-Service" Company that deals with electronic waste recycling. Almaty residents may come to the office and pass EEE waste for recycling for a fee.

"Altyngo" specialized company sends hazardous components of electronic waste (power batteries, plastic and elements with precious metals) to Europe for recycling. According to information of the company as of 01.01.2011, the ending inventory was 112,000 kg, 329,618 kg were accepted to the stock in 2011, including 342,477 kg recycled; as of 2012 the ending inventory was 99,142 kg.

During EEE recycling the specialized companies separate such useful elements as plastic (ABS), black and non-ferrous metals. Afterwards these elements are sent to industrial enterprises for repeated use. Also, the process of EEE recycling generates such hazardous elements as picture tube glass, power batteries and accumulator batteries that are hardly deactivated. There is an operating plant on lead accumulators recycling in Kazakhstan. It is located in Taldykorgan Almaty Oblast, and there is one more under commission in South Kazakhstan. However the problem with power batteries and picture tube glass still exists. The specialized companies have to place these wastes in landfills.

As part of the Project there was a meeting held jointly with Balkhash Alakol Ecology Department of the Environmental Regulation and Control Committee of the Ministry of Environmental

Protection with representatives of EEE wastes handling specialized companies. This meeting was attended by representatives of three specialized companies dealing with waste disposal and recycling: Roman Mukhin “RG-service”, Oleg Borisovich Zaitsev “Altyngo” and Chingiz Madridovich Rysbekov “Technopark-2030”.

This meeting made it possible to clarify the current situation with EEE wastes handling, to discuss the main problems that EEE wastes disposal specialized companies deal with, and to plan for first steps of the segregate wastes collection system and further wastes utilization and recycling in Kazakhstan.

During this meeting the following main problems with EEE wastes utilization and recycling were found:

- 1) difficulties with recycling of hazardous components of electronic equipment (displays, power batteries);
- 2) difficulties with broken glass marketing;
- 3) unavailability of regulatory documents for EEE waste recycling process;
- 4) lack of concern of small and medium-sized businesses and physical bodies to recycle EEE waste (large companies deal with it mainly);
- 5) no assistance from the Government (grants, preferences, regulatory legal acts etc.).

4. Governmental organizations (schools, senior colleges)

For the purpose of governmental organizations questioning the following schools and senior colleges of Almaty City were selected:

1. KGU “Lyceum No 134” of Almaty Municipal Department of Education High School No105
2. GU “Gymnasium No111”
3. IT University
4. JSC International University of Information Technologies
5. NAO University of International Business
6. JSC Kazakh Economic University named after T.Ryskulov
7. NAO Almaty University of Power and Communication.

Results of governmental organizations questioning are listed in Table 1.

As it is seen in the table below almost all governmental organizations (schools and senior colleges) have lots of used computers and TV-sets, and a bit less of refrigerators. Electronic equipment is subject to regular renewal by writing off of old equipment and its replacement with new units. At the same time only three organizations of six have contracts for EEE wastes disposal. Other three organizations do not have any contracts; however, it is planned to introduce such agreements.

So it can be said that presently governmental organizations have a large number of used electronic and electric equipment. It is also verified by independent surveys performed by EEE wastes handling specialized organizations.

Due to unavailability of clear legislative requirements, control of state authorities and poor information distribution among the public in regards to harm of electronic equipment, the situation with EEE wastes disposal has not been resolved yet.

Table 1 – Results of governmental organizations questioning concerning the EEE wastes disposal system

No	Name of organization	EEE available			EEE renewal	EEE generated annually in average	What happens with old EEE	Contracts in place	Wastes placed at landfills	Future plans
		computers	refrigerators	TV-sets						
1	KGU “Lyceum No134” Almaty Municipal Department of Education	127	3	5	no	no	Written off	yes. “SNAN PLUS” LLP	no	unknown
2	GU “Gymnasium No111”	+	+	+	After writing off of old equipment and sending it to the utilization company		Old equipment is written off and sent to the utilization company	No, but it is planned	no	To conclude a contract
3	JSC International University of Information Technologies	+	-	+	No old equipment	Not yet	Repair in service centers	Not yet	no	To conclude a contract with a utilization and recycling company
4	NAO University of International Business	+	+	+	Equipment is purchased once a year	Not more than 50 units	Sending for parting to the partner company	Contract for parting with RG Service Company	no	To use the current method
5	JSC Kazakh Economic University named after T.Ryskulov	+	-	-	Selling to individuals	8-15 PC units	Selling to individuals	contract No46/12 – , dated 7.05.12, with GKP “Almatyecologostroy” for utilization of used mercury containing lamps and EEE waste		To conclude contracts with specialized companies
6	NAO Almaty University of Power and Communication	+	+	+	Writing off of old equipment and purchasing of new advanced equipment	computers - 40	Stored in special-purpose premises temporarily	no	Stored 0.83 ton of waste at the temporary storage	To conclude a contract with a utilization and recycling company

5. Population of Almaty City

5.1. Social interviewing on Internet sites

The questionnaire survey by Internet interviewing covered 133 people, including 125 adults, 8 students and 2 retired persons.

Figure 1 represents a scheme with data that describe the frequency of EEE replacement (computers, refrigerators, TV-sets, cell phones) by people.

Frequency of EEE replacement

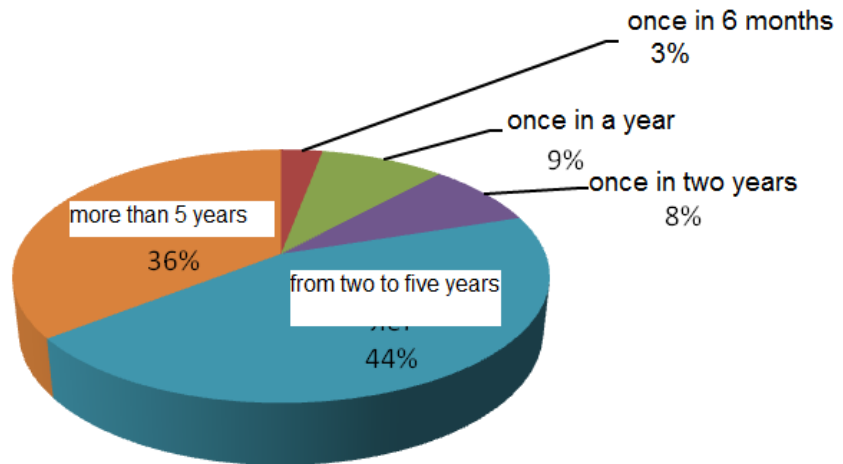


Figure 1 – the scheme which replies to the question: “How frequently do you replace your EEE?”

Figure 2 represents a scheme indicating what people do with EEE waste.

EEE wastes handling

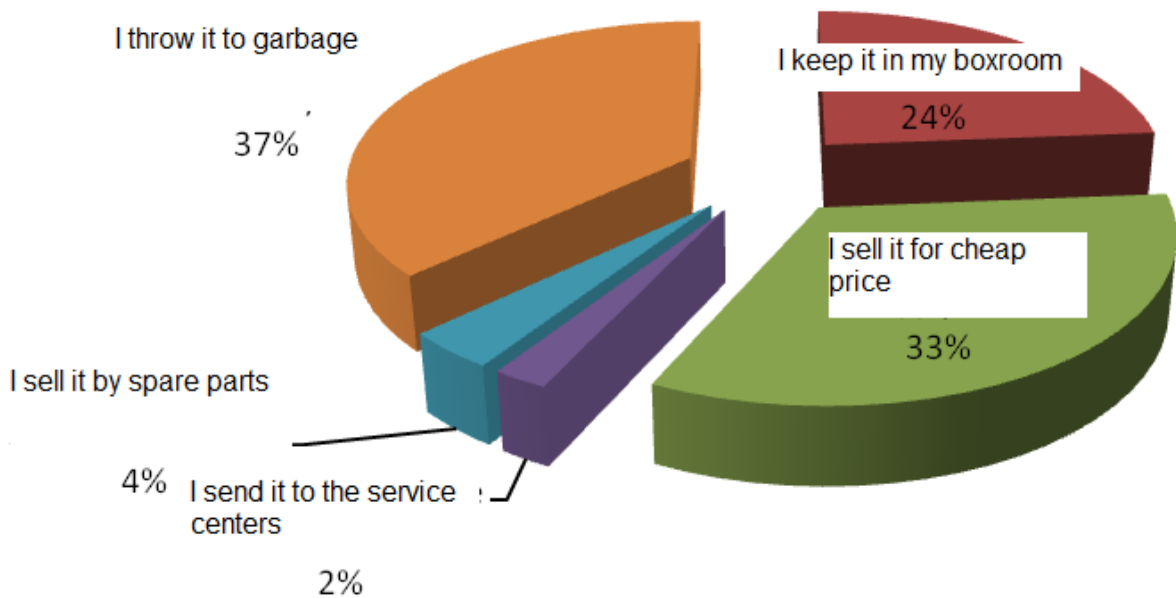


Figure 2 – the scheme which replies to the question: “What do you do with failed EEE?”

Figure 3 represents data reflecting how people feel about the EEE wastes handling issue.

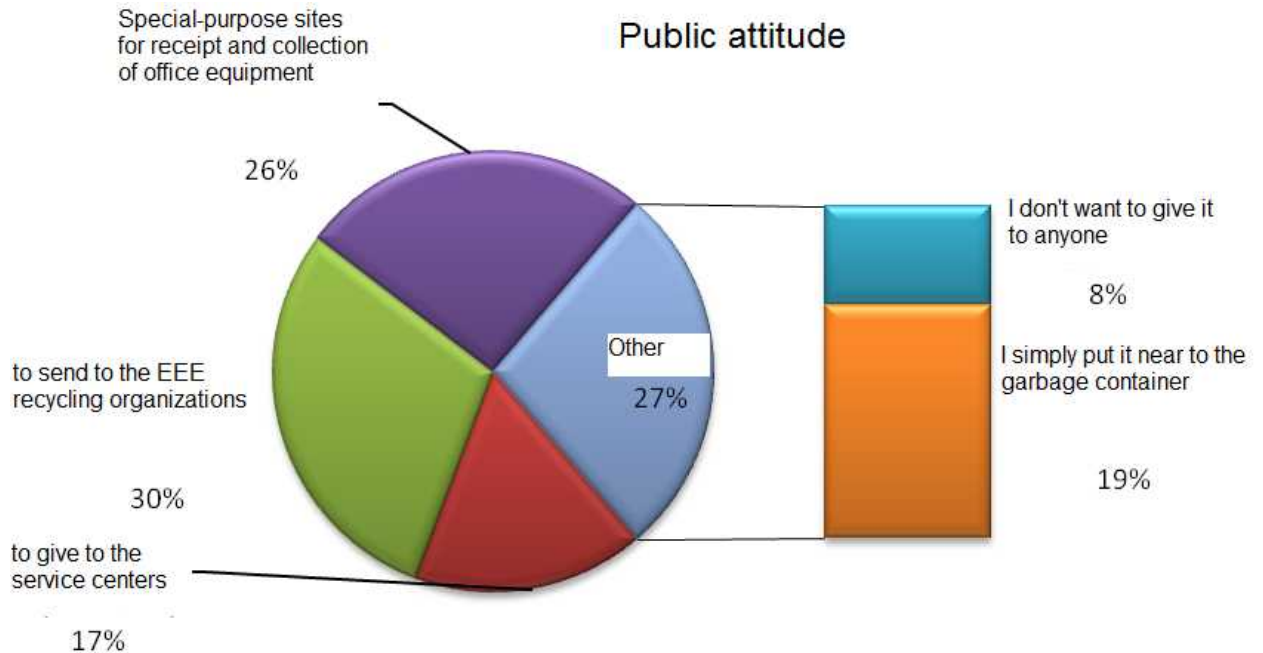


Figure 3 – the scheme which replies to the question: “Where do you want to give broken and beyond repair equipment?”

Analyzing the data above it can be noted that presently the majority of Almaty residents throw old equipment to the garbage (37%) or re-sell to other people (37%), and just some of them (2%) pass it to the service center. Others keep it in boxrooms at home (24%). However, just some of the interviewed residents (27%) don't want to deal with separate collection and will continue throwing EEE waste to the garbage (19%) or keep it at home (8%), the other residents are ready to deliver old equipment to the specialized recycling locations (30%), to pass it to the drop-off stations (26%) or to the service centers for repair or further disposal (17%). Thus, positive indicators of the public readiness to assist the recycling companies is obvious; however, all conditions should be provided.

Also under implementation of the Project there was “Green House” group created (<http://vk.com/club35792756>) in “VKontakte” social net. This group contains video clips with western EEE wastes handling practices and also links to materials and articles about EEE wastes handling. Additionally, there are topics for conversation created. Currently 49 people are subscribed to this group. Questionnaire forms for the public were posted in the group. 15 people participated in the questionnaire survey.

5.2 Interviews of students

Results of students interviewing have also noted that young people have a positive attitude to resolution of EEE wastes disposal and recycling. Among 41 interviewed children, 24 are ready to send the used equipment for recycling (although now most of them just throw it to garbage), re-sell to other people or keep it at home.

5.3 Population survey

The population survey by written interviewing (10 people) has proved the data above as well. In particular four people of ten keep broken equipment at home, four people sell it at cheap price, one person passes it to the service center, and only one person from ten throws used electronic equipment to the garbage. Meanwhile, seven people of ten would like to pass electronic equipment to the specialized recycling centers. As a solution of the problem with constantly growing volumes of electronic waste the public suggests that we should build a wastes recycling plant.

Impact on target groups:

Implementation of the Project impacted on representatives of all target groups participated.

EEE suppliers and manufacturers and also EEE repair and service centers paid their attention to the problem of consistently increasing volumes of electronic wastes. Trade organizations found out about operating enterprises that deal with EEE wastes collection and recycling, and in future they plan to cooperate with such enterprises.

State authorities controlling the wastes disposal activities were informed on problems the wastes recycling companies face, established relations with such companies, and plan to further cooperate in relation to EEE wastes collection and recycling issues.

EEE wastes recycling specialized companies had an opportunity to declare their own presence and acquired support from the state authorities – Balkhash Alakol Ecology Department and Mineral Resources and Environmental Control Department of Almaty Hakim, established a partnership with PF “Center “Promotion of Sustainable Development” and OO “Posadiderevo.kz”. In the course of the Round table the specialized companies got acquainted with RoK legislative norms and requirements in relation to wastes disposal.

In cooperation with the target groups under the Project some companies and state authorities developed contracts with the EEE wastes utilization and recycling specialized companies. Also, they made plans for EEE wastes disposal accounting and control. During the Action “Separate wastes collection: Day of old electronics collection” “RG-Service” recycling company acted as the company collecting EEE wastes for recycling whereby it demonstrated an active position in the issue of electronic wastes collection and recycling system developing.

Also, the service centers paid attention to the problem of electronic waste collection and utilization and found out about availability of wastes disposal companies.

As a result of the interviewing and the Action on separate collection of electronic waste, Almaty residents found out about potential hazards associated with EEE waste for human health and environment and about availability of specialized companies that deal with EEE wastes collection and recycling.

Impact on target policies:

The policy of wastes disposal in RoK is implemented by the Ministry of Environmental Protection. The performed analysis of electric and electronic wastes handling system in Kazakhstan resulted in the following recommendations related to the target policy of the Ministry of Environmental Protection:

- introduction of the Expanded Producer Responsibility principle in to the Ecology Code RoK;
- drafting of actions to introduce the principle of the Expanded Producer Responsibility to be laid out in subordinate legislation;
- introduction of a state standard RoK on safe EEE wastes handling;

- introduction of motivating actions for the specialized companies, such as application of tools of the State Program on Accelerated Industrial Development, support from the Social Business Corporation, etc;
- conduction of large-scale campaigns on information distribution among the public on negative impact of electronic waste and the promotion of separate wastes collection;
- implementation of public control over waste collection and recycling activity.

Outreach to stakeholders:

Wide public attention was drawn to the Project when performing the EEE wastes handling system analysis. Under the Project scope there were agreements made with volunteers of “Posadiderevo.kz” and “RG-Service” wastes utilization and recycling specialized company in regards to cooperation in environmental education and organization of EEE wastes collection from people in the whole Republic of Kazakhstan.

Many of EEE manufacturers (suppliers) have planned for the future activities to establish the EEE wastes collection and utilization. For instance “Planeta Electronica” Trade House has been interested in conduction of series of Actions on EEE wastes separate collection on the basis of their own shops.

Many social and commercial organizations have shown their desire to join the movement for establishment and development the environmentally sound system of EEE wastes disposal. It is planned for further work in this direction.

Deliverables, outputs and/or products:

Implementation of the Project has resulted in as follows:

- 1) Performed analysis of EEE wastes handling legislation of RoK;
- 2) Evaluated the EEE wastes disposal practices by the following groups:
 - a) EEE manufacturers (suppliers, importers);
 - b) EEE repair and service centers;
 - c) EEE recycling companies;
 - d) Governmental organizations (schools, senior colleges etc.);
 - e) Almaty City residents.
- 3) Prepared recommendations on improvement of EEE wastes disposal system in Kazakhstan;
- 4) Jointly with Balkhash Alakol Ecology Department held the meeting with representatives of the EEE wastes handling specialized companies;
- 5) Organized and carried out the Action “Separate wastes collection: Day of electronic wastes collection” in Almaty on May 12, 2012.
- 6) Met with 10 form students of Gymnasium No105 named after O.Zhandosov and students of KazNU named Al Pharabi, informed the students on potential hazard of electronic wastes and the safe handling practices;
- 7) Held the Round table “Improvement of electronic wastes collection and disposal system in Kazakhstan” with participation of state authorities, wastes disposal specialized companies and industrial enterprises (May 18, 2012);

Drafted the report with basic conclusions and results of the Project implementation.

Communication efforts:

In order to communicate information to the public on the Project progress the following efforts were taken:

- mailing about the Project start date as per the non-governmental organizations database;
- distribution of information about the Action “Separate wastes collection: Day of old electronics collection”;
- published 5 notes in mass media about the Action “Separate wastes collection: Day of old electronics collection” (Appendix 14);

- prepared a publication for “Ecolog” Newspaper;
- planned to mail about the Project completion;
- planned to post the Project report at the web-site of SF “Center “Promotion of Sustainable Development”.

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NGO Recommendations for next steps:

In the purpose of the EEE wastes disposal system improvement the Center “Promotion of Sustainable Development” has drafted the following recommendations during the analysis of current situation with EEE wastes handling:

- to amend the existing RoK legislation in relation to the Extended Producer Responsibility and more strict requirements for EEE wastes disposal;
 - to work out regulatory acts (rules, guidelines etc.);
- to modify the system of standardization and certification (the qualification requirements standard for wastes collection and utilization specialized companies and further certification of such companies according to this standard and introduction of the EEE wastes disposal practices standard);
 - to implement some motivating actions for wastes utilization and recycling specialized companies;
 - to carry out actions on separate EEE wastes collection among the public;
 - to implement projects on EEE manufacturers and suppliers support in Kazakhstan;
 - to organize stations of old electronics collection based in trade and service centers that can accept EEE wastes from residents free of charge;
 - to implement “green” procurement systems for governmental organizations (procurement of salvageable materials).