

## Technical Cooperation Project for Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in Mongolia

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This is the 4<sup>th</sup> edition of our newsletter that describes the progress of the project activities which started a year ago. This time we will bring you the update on the implementation of the pilot project (PP) on improvement of public cooperation on waste discharging manner and separate discharge in the selected khoroos, and the results of the survey on the waste of electrical and electronic equipment (WEEE) generated in UB.

### 1. Survey on WEEE

WEEE is the abbreviation for Waste Electrical and Electronic Equipment and the term describes loosely discarded and broken electrical or electronic devices. The processing of WEEEs causes serious health and pollution problems as well as involves significant risk to workers and communities and great care must be taken to avoid unsafe exposure in recycling operations and leaching of material such as heavy metals from landfills and incinerator ashes.

Under these circumstances, the JET investigated the current conditions of WEEEs being recycled and disposed in UBC from Jan to Feb 2010 in order for the MUB to develop its policy for WEEE.

#### Objectives

The main objectives of this survey are:

- (1) to understand the current way of discharge, recycle and disposal of WEEEs in UBC and
- (2) to identify the amount and the flow of WEEEs.

#### Target WEEEs and the Scope of the Survey

Although 5 types of EEEs (TV set, refrigerator, washing machine, PC and mobile phone) were initially selected as target EEEs, the mobile phone was deselected since its imported quantities can not be obtained and it is impossible to clarify waste flow in UB city.

#### Current Condition of WEEE Recycling System

According to the interviews, the methods of WEEE recycling in UBC are almost similar for all types of target WEEEs.

The majority of the most common recyclables are metal-containing parts. Generally, metal containing parts are recycled regardless of their functionality as non-functional ones can be sold as metal after segregation. Among non-metal or mixed small parts, any of the functional ones can be used in maintenance as spare parts.



#### WEEE Recycling Processes

The WEEEs generated in UBC are re-used since most of second hand EEEs purchased by recyclers are resold and repaired/resold back to consumers.

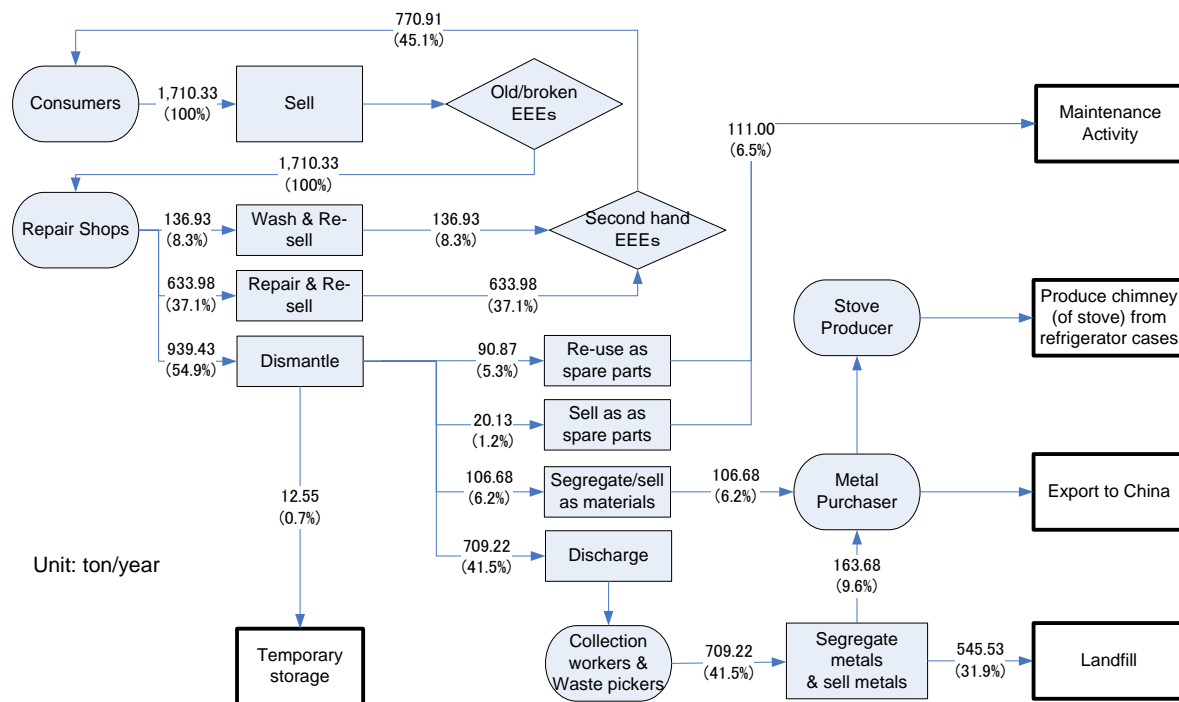


Only those that cannot be repaired are dismantled and some of their parts are recycled. All the metals (copper, iron, aluminum and alloys) segregated from WEEE parts, except iron cases of refrigerators, are exported to China. As iron cases of refrigerators are used as raw material for chimneys of ger stoves, most refrigerator cases are purchased by ger stove producers.

#### WEEE Recyclers

The WEEE recyclers in UBC are repair shops or individual repairmen, collection workers, waste pickers and metal purchasers. The repair shops and the repairmen play the main role in WEEE recycling since they purchase old and broken EEEs from consumers, repair





most of the purchased EEEs, resell them to residents and dismantle other EEEs that are impossible to repair.

### Findings

According to the above WEEE Recycling Cycle and WEEE Flow 45.1% in the total WEEEs is re-used, 23.0% is recycled (including stored spare parts) and 31.9% is disposed. Re-use rate of each type of WEEEs is usually high (ranging from 66.9% to 80.2%) except PC. As for PC, the indicator is only 28.6% since CRT monitors that occupy the major part in the weights of TV sets, are usually impossible to re-use.



The total disposed amount occupies 31.9% in the total (545.53 tons). As the amount is estimated by weights of the disposed parts, the majority of the total disposed waste has been resulted from disposed CRTs of PCs and TV sets. The main reasons for the conclusion are (1) all the CRTs of PC cannot be sold and around 80% of those of TV sets are disposed; and (2) a CRT weights more than 10 kg occupying the majority in the weights of TV sets and PCs, according to survey results. Therefore, the sum of disposed amounts of CRTs from TVs and PCs occupy 94% in the total landfill amount

### Recommendations

CRTs contain heavy metals such as mercury that cause serious health problems to human beings, the

major attention should be paid to their disposal. A separate disposal site where hazardous wastes are disposed in safe manner is required to be constructed in order to prevent the negative impacts on surrounding environment. Until such hazardous waste disposal site is ready, these hazardous wastes should be stored in dry places away from the sun light.

There are no manufacturers of the target EEEs in Mongolia; as the result, all of these EEEs are imported from abroad. Therefore, encouraging imports of EEEs that do not contain hazardous substances is needed.

The re-use and the recycle of WEEEs are conducted mainly by individual recyclers. Thus, it is necessary to promote and develop these individuals as formal recyclers by supporting their status such as accommodating low interest rate loans after achieving a complete control on their activities by registering the recyclers, identifying the amounts and the flows of parts dismantled by them and preventing possible illegal dumping.

## 2. Public Cooperation PP on Improvement of Waste Discharging Manner and Separate Discharge

### Purpose of PP

This PP aims to verify the degree of public cooperation on separate storage and discharge, and at the same time to develop the capacity of C/P in raising public awareness through interaction with the apartment residents.

### Implementation of PP

The PP has been implemented since April 2010 in 4 target khoroos (SBD#5 and #7, BZD#1 and #7), and it will continue until the last phase of the Project. The PP implementation can be divided into the following

four phases:

- Baseline survey (collection of the data and information in the target khorooos)
- Public education activities
- Monitoring
- Final evaluation

The activities to be implemented during the PP, and roles and responsibilities of each organization were detailed out among C/P, JET, district and khoroo Governments, WSF, AOU and collection providers.

### Collection of Basic Information

Baseline survey was conducted from May 2010 until early June 2010 to the residents and business entities of the target khorooos with the purpose to identify the current situation of waste management and people's satisfaction level for waste collection services, and to verify the possibilities of introducing waste separation for recycling. The result of the survey can be used for the baseline data and the same survey for the same respondents will be conducted in the end of the PP again to see the progress of the PP.



### Result of the Survey

More than half of the answers showed "satisfied" with the waste collection service in all the target khorooos. Jijuur who clean orts, dust chutes and do the waste management of apartments were evaluated "good" by the residents of all target khorooos. The discharge points of the waste for the residents were varied according to the structure of the apartments (with dust chute or no etc...) and their numbers. There are more dust chutes in SBD#7 compare to other khorooos. Two to three times per week of the waste discharge is the most common frequency of the waste discharge among all the khorooos. More than half have



answered that they did not separate recyclable waste in all the target khorooos. The recycling of household waste largely depends on jijuur or waste collection workers. However, most respondents have answered that the waste separation can be done "easy". So, the willingness for waste separation can be high. Most of them answered that they could store the recyclables in their house about two to three days.

As for the business entities, the respondents of all the target khorooos were satisfied with the current waste collection

Төр хэлний цэг	Байр №	Хог ачиж гаргах цаг
22	Да.Лх.Ба	8:30-9:00
19,21,17,17a,18	Да.Лх.Ба	9:00-9:30
Сансар-23,20,20a,105	Да.Лх.Ба	9:30-10:00
14,15,16	Да.Лх.Ба	10:00-10:30
101,102,103	Да.Лх.Ба	10:30-11:00
27,28	Да.Лх.Ба	11:00-11:30
23,24,25,26	Да.Лх.Ба	12:30-14:00
30,32	Да.Лх.Ба	14:00-14:30
41,42	Да.Лх.Ба	14:30-15:00
33	Мн	8:30-9:00
57,58,59	Мн	14:00-15:00
5a,6a	Мн	15:00-16:30
201,202	Бн	10:30-11:00
57,58,59	Бн	14:00-15:00
29	Нн	9:30-10:00
8,9,11	Нн	10:00-10:30
38	Нн	10:30-11:00

services. Restaurants and bars were generating kitchen waste mostly; other businesses were discharging paper (cardboard) mainly. As for the current status of recycling, restaurants and bars were recycling glass bottles and pet bottles, while other businesses were not keen to recycle.

### Public education activities

#### AOU meetings

The weekly meetings were organized by EPWMD and JET inviting WSF, PSD, collection providers, the khoroo governors and the representatives of AOU in each target khoroo since the mid of April. The priorities to tackle were to improve waste discharging manners of residents and collection manners of service providers, and to promote community recycling at sources.



#### PR tools

In the AOU meetings, the waste collection time schedule has been fixed based on the result of the time & motion survey and also the waste discharging rules have been discussed and agreed among those AOU directors. JET and EPWMD prepared the following PR tools for the residents and Jijuur through the discussion at AOU meetings.

Common PR tools for all target khorooos were prepared such as brochures, big sacks for Jijuur to storage recyclables, and stickers placed on collection trucks that sound



music with the messages about the proper discharge.

### Progress and monitoring

#### Closure of Dust Chutes

There are many apartments with dust chutes in UB. Residents can discharge waste into dust chutes anytime, any type of waste without separation and without putting into plastic bags. Dust chutes are not match to today's life styles. There are many cases of blocking up the waste, getting worms and flies, bad odor in summer, and cases of fire too. There are constant complains about them from the residents, and the collection operation is in-efficient.



In order to ensure a proper sanitary and efficient waste collection, it is important to have a short time gap between waste collection by collection vehicle and putting out the waste by the residents. It's essential to achieve those two things at once that are 1.collection vehicle comes on time, regularly, and 2.residents put out waste on designated day and time.



Closure of dust chutes has been discussed at the AOU meetings, and based on the decision of AOU leaders, the dust chutes were closed. AOU leaders closed the dust chutes by plastic tapes,

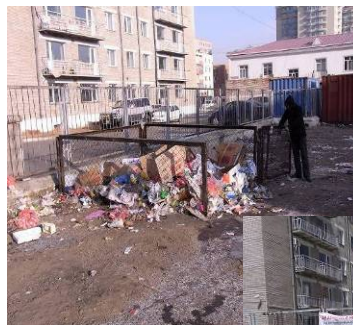


ropes and cloth etc, while JET made the notice or mini poster with logos of JICA and Ulaanbaatar city to inform about closure.



It's a great improvement in SBD#7. There was no defined waste collection schedule and the accumulated waste was collected randomly before implementation of the PP. During the pilot project, JET supported making the collection schedule for

WSF and EU (collection service provider), and supported familiarizing the information through AOU about the fixed waste collection schedule, discharging manner and waste separation for residents of the



apartments.

Once success of the closure of dust chutes was observed at an apartment, other apartments



followed the procedure and closed their dust chutes. As a result, collection time was drastically reduced from 2 hours/collection point at maximum to 2 minutes at minimum.

#### Recycling amount by Jijuur

Amount of recyclables collected by Jijuur has been counted to evaluate the progress of waste separation at source. There are three ways to grasp the recycling amount, 1. by the monitoring sheet distributed to selected Jijuur, Jijuur record the amount every time they go and sell recyclable, 2. by estimation the amount from the data of separate collection on Saturdays at BZD#1, and 3. by estimation from the data of paid amount at the recycling shop at Apt.5a in SBD#7.

In any form of counting, it has been for only 1 month since the first distribution of PR tools to inform the residents about waste discharging manner and waste separation, thus it cannot be observed the remarkable increase of recyclable amount. It's necessary to follow the progress of monitoring.

### 3. Important Event and Activity

- AOU meetings at each PP target khoroo: re-start from October.
- Monitoring of separate collection by Jijuur.
- Monitoring of waste collection by new schedule in SBD7
- Collection of basic information of ChD12 to for Time & Motion survey in Ger area.

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