Electronic Scap Project Weiz 1996

Contractor:	Montan University of Leoben
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Participants:	Waste disposal companies Waste Management Association Weiz
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1. Summary

In 1994/95, two model studies for the collection of used electric and electronic devices were made to create a decisional base for possible future electronic scrapping. One of these studies was made in Weiz/Styria. Used electric and electronic devices were collected by using the four lines of waste material collection centres, retail trade for electric and electronic devices, collection of bulky waste and flea markets. After preliminary sorting, the used electric and electronic devices were disassembled in disassembly factories in order to recycle materials to bring them back to the raw material cycle as far as possible. In view of a future regulation of electronic scrap, the practised collecting system in several collecting lines has basically stood the test. Details might still have to be improved.

2. Starting Position

In Austria, there are about 80,000 Mg used electric and electronic devices every year. As a rule, these devices are collected as part of household or bulky waste and are put on the landfills without any further pretreatment or are recycled as waste iron along with other types of scrap. This practise is not very recommendable, in particular in view of the components contained in the used electric and electronic devices, which often must be classified as being hazardous waste, e. g. capacitors containing PCB's (polychlorinated biphenyls), mercury switches or equiped printed circuit boards. On the other hand, used electric and electronic devices offer a high potential as material providers. As a continuous increase of used electric and electronic devices may be expected for the years to come, this problem will definitely be aggravated even more in future. These were the main reasons why the legislator turned to this problem and elaborated the "Verordnung über die Rücknahme und Verwertung gebrauchter elektrischer und elektronischer Geräte" ("Regulation on taking back and recycling used electric and electronic devices"). Before the introduction of this regulation, experience was to be collected in practise oriented model studies.

3. Goals

The results of the model study Weiz were to serve as a decisional base for the creation of the "Electronic Scrap Regulation" or voluntary arrangements, deliberations on the required organisational and funding structures having to be integrated. The essential goals of the model study consisted in studying the feasibility of the selected structures and their acceptability among the population as well as the readiness of the population to participate. On the other hand, the composition of electronic scrap and the possibilities for disassembly and recycling were to be lighted.

4. Procedure

The actual model study Weiz had been scheduled for 11 months, i. e. from February 1, 1995, to December 31, 1995. However, preliminary work had already started earlier. The final evaluation of the project lasted till March 1996 after the used electric and electronic devices that had been collected by late December 1995 had been picked up, processed and documented in the course of January 1996.
When the organisational structure of the model study was fixed, utmost importance was attached to utilising existing structures of waste treatment and to incorporating them into the project. It was already before the project that used electric and electronic devices had been collected in the District of Weiz in several Waste Material Collecting Centres and taken back by some retail traders for electric and electronic devices. AGS Company also had already gained experience in the disassembly of devices with screens.
In the model study Weiz, a survey on the material and capital flows was made for the two collecting lines of waste material collecting centres and trade.
The used electric and electronic devices were handed over to the traders for electric and electronic devices and transported to the recycling companies from there either by Müllex Co. or directly. There they were disassembled or freed from pollutants and the disassembled fraction was either recycled or put on the landfill. In the collecting, transporting and recycling companies, all the data were documented and sent for evaluation to the "Amt der Steiermärkischen Landesregierung" ("Styrian Provincial Government") or directly to the "Institut für Entsorgungs- und Deponietechnik" ("Institute for Waste Disposal and Landfill Technology").
The companies responsible for picking up the used electric and electronic devices charged the collecting centres with the fixed share of the treatment cost. The communes and the Waste Management Association resp. were refunded by the Styrian Provincial Government, the commmercial enterprises could charge their costs to the account of the "Wirtschaftskammer" ("Chamber of Economics").

5. Result / Benefits

The total number of used electric and electronic devices that were collected amounted to 15,883 pieces, i. e. 194,349kg, i. e. 2.34kg per inhabitant. By considering the refrigerators that were not part of the project and by extrapolating the result to one year, this means 3.04kg per inhabitant.
According to the volume, the total quantity collected was subdivided as follows: 69% large devices, 17% small devices and 14% screens. As for the number of pieces, the small devices, above all small household appliances and entertainment electronics, dominate. As for the collecting lines, the total quantities collected amount to 65% for the waste material collecting centres, to 24% for trade for electric and electronic devices, to 5% for the collection of bulky waste and to 6% for the flea markets.
In the recycling companies, 156.6 Mg of used electric and electronic devices were freed from pollutants and disassembled or shredded. The lowest disassembly times were reached for large devices with 0.06min/kg, the longest ones for film and photo apparatus with a mean time of 1.8min/kg.
The share of hazardous waste in all the electronic scap amounted to 0.4 weight per cent. The large household appliances were loaded least, the large special devices were loaded most.
In general, the practised collecting system with several collecting lines has stood the test, details still having to be improved.