

A financing system for battery recycling in Switzerland

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Abstract

The household battery recycling procedures presently in progress in Switzerland are illustrated. Particular attention is devoted to the description of the country's organizations for providing an efficient battery disposal plan. The financial aspects of this plan are also outlined.

Keywords: Recycling; Batteries; Switzerland

1. Initial situation

Swiss legislature stipulates that manufacturers and dealers of batteries are required to take back all types of used batteries, free of charge, and to dispose them of according to the regulations on dangerous waste. This stipulation has resulted in a disposal system based on collection points provided by local authorities, major distributors and the trade, from where used batteries were previously transported by a special waste disposal company to a dump in formerly East Germany. It is estimated that approximately half of the 3500 tons of batteries annually supplied to the market were disposed of in this way. Using this method, disposal costs amounted to approximately CHF 770.00 per ton and were met by the collection points or their organizations.

2. Ban on exports resulted in a cost explosion and market distortion

Since the beginning of 1991, no more export permits have been granted for used batteries. As a result, Switzerland had to find its own disposal facilities. A national 'recycling industry' has thus been developed, such as Batrec in Wimmis and Recymet in Aclens.

The environmental-friendly processing of used batteries in Switzerland, however, has resulted in higher costs than was the case with battery dumping. The price charged for battery disposal nowadays has risen to CHF 4750 per ton.

As has already been mentioned, collection points assumed all responsibility for the disposal of used batteries in the past. Owing to the increase in costs, however, these collection points could no longer assume these high costs without a fairer distribution of the cost, as consumers frequently do not

return their batteries to the outlet when they have bought them. Consequently, some retailers have considerably more returned batteries than they sell; in contrast, others — although required to do so — only take them back when expressly asked to and thus have minimal return rates. Local authorities were also reluctant to meet the increase in costs. What could be done?

3. Foundation of BESO and its contractual partners

As a result of this new situation, the branch realized that something had to be done: on the advice of a neutral consultant — ATAG Ernst and Young — and in agreement with the environmental authorities, the trade decided to secure future funding by means of an 'advance disposal levy' (VEG). A support organization was therefore founded in November 1991: BESO Batterieentsorgungs-Selbsthilfeorganisation (self-help organization for battery disposal), with the legal form of a cooperative organization. A neutral person was elected as president. Board members were both from the manufacturing and import circles and also from the trade, which plays an important role in collecting used batteries. A representative of the environmental authorities also participates at meetings as advisory. The office, of which the author is the manager, is run by ATAG Ernst and Young in Berne.

At its inception, the members comprised all members of the Swiss battery association, other Swiss manufacturers, leading distributors, as well as the department stores association. Today, BESO has almost 90 members recruited from all areas of business in which batteries are used, for example toy importers, equipment producers, camera and video camera importers and importers in the field of electronic entertainment.

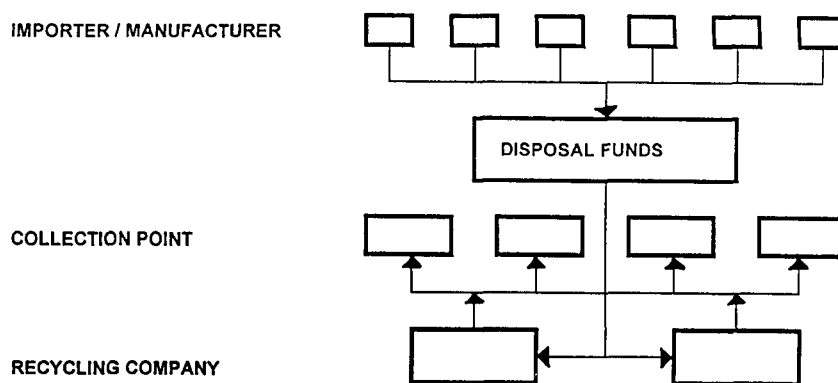


Fig. 1. Advance disposal levy — flow of funds.

After its formation, BESO placed maximum priority on discussions with disposal companies. This resulted in a contract being signed with two recycling companies which had all the necessary permits from the authorities for conducting their business, which guaranteed environmentally compatible recycling. These companies were Batrec and Recymet. Among other things, these contracts stipulate that all used batteries can be supplied to the recyclers at an agreed price.

4. Structure and method of the advance disposal levy

Since 1 January 1992, the financing of battery and small accumulator disposal was achieved by an advance disposal levy. This means that a fee, which corresponds to the anticipated cost of disposal, is imposed on the manufacturer or importer when the product is first sold in Switzerland. This sum is passed on unchanged along every link in the trading chain right down to the consumer, i.e. it is not included when calculating margins. In this way, each battery that comes on to the market already has the 'right' to an environmentally compatible disposal.

The advance disposal levy is foreseen in the draft for the new law on environmental protection as a possible means of financing disposal costs. Since it is draft legislature, however, the advance disposal levy appears to be both voluntary as well as pioneering in nature, since, to our knowledge, such a system has never been introduced, anywhere, before.

The objective of making the levying of disposal costs not influencing the market means that an objective, implementable figure in direct relation to disposal cost must be used as a calculation basis. In the case of batteries, this factor is weight since disposal costs are charged per ton. A request made to BESO that charges be regulated according to the toxicity of their contents was not given consideration as this type of calculation would have introduced a political dimension, that of a regulatory tax. Because of its cooperative nature, BESO cannot and will not become involved with such topics.

In order to impose an advance disposal levy, three parameters should be known: (i) disposal costs per ton; (ii) return rates, and as previously mentioned, (iii) individual battery weight.

When budgeting disposal costs, the initial calculation was based on estimates, the price being set at CHF 4000.00 per ton. (Actual costs today amount to CHF 4750.00). With an anticipated return rate of used batteries amounting to 80%, this results in a contribution from the advance disposal levy of CHF 3200.00 per ton, or CHF 3.20 per kg. This rate is transferred to the individual battery weight, and an average value was calculated for normal standard types and weight categories created for company-specific products. In the most commonly sold sizes which in terms of units corresponds to about 60% of the market, the advance disposal levy for carbon-zinc batteries represents CHF 0.05; in the case of alkali manganese combinations this figure is CHF 0.10.

In practice, the invoicing procedure is as follows: BESO members inform their sales offices each month and, on the basis of this, receive a bill. The funds received go into a disposal fund and serve to meet the bills from the recycling companies, which also include the cost of any sorting out and preparatory work of the advance disposal points. The organization and calculation of these stages is a matter for the recyclers and BESO is thus not directly affected (Fig. 1).

At the start of its activities, BESO's great financial burden was the old scrap; this should be explained in more detail. When the advance disposal levy was imposed, a change in the system for reclaiming disposal costs was involved, since the necessary funds are not due when the used batteries are disposed of, but at the time when the batteries are purchased. This new system implied that those batteries that were already in use or, as used batteries, had not been returned for disposal — the old scrap as such — remained unfinanced. This was estimated at approximately 1000 tons or more than CHF 4.000.000. When the advance disposal levies were calculated on the basis of 80% return rate, and this target ought to be reached with time, there were certain financial reserves in comparison with the actual collection result, which made it possible to compensate for the return of old scrap and because the disposal price which was greater than budgeted.

5. Disposal route for used batteries

BESO considers that the current collection concept is practical and sees no reason to make any major changes. In con-

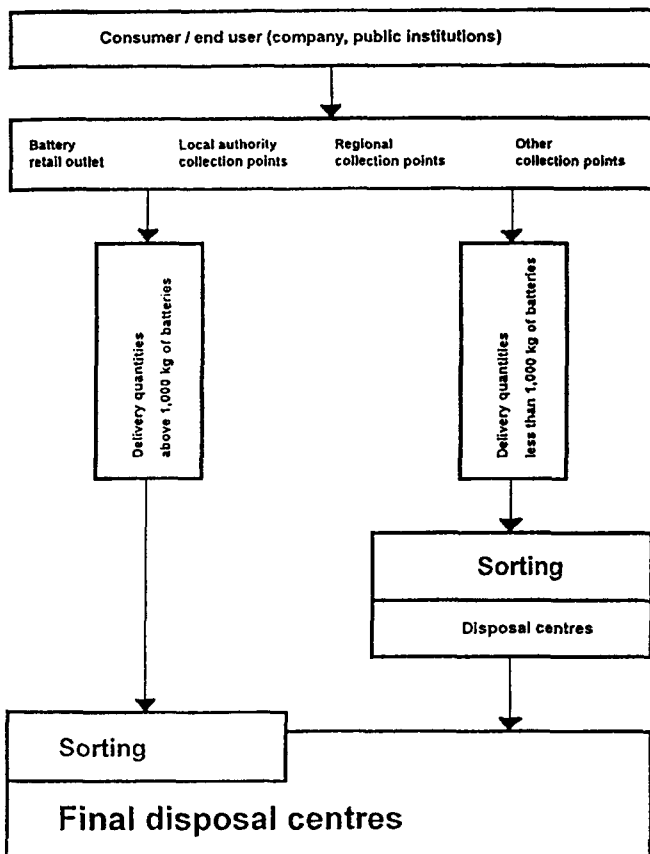


Fig. 2. Rough outline: route for the disposal of used batteries/small accumulators.

trast, it wants to support actively the anticipated collection target of 80% of batteries sold. In particular, BESO hopes that — thanks to the new possibility of returning used batteries free of charge — local authorities will also continue to support the collection of batteries actively. Measures to increase return rates by means of information, advertizing and improved facilities for return are in the course of preparation.

As one can see from Fig. 2, consumers can return their used batteries to retail outlets or the collection points provided by local authorities, to regional or other collection points. Quantities greater than 1000 kg can be delivered directly to the disposal companies; smaller units of weight are accepted at disposal centres. The terms of delivery and a list addresses of disposal centres can be obtained from BESO.

6. Experience with the advance disposal levy

The advance disposal levy has proved to be a valuable financial method, and has been accepted in manufacturer's and trade circles. However, BESO has problems with 'joy-riders', people who are not willing to cooperate.

According to our estimates, more than 90% of first-time battery purchases are recorded by BESO which, given the voluntary nature of the scheme, can be considered as a good score, although a few importers are refusing to cooperate, particularly in those cases where the advance disposal levy contribution is very high in relation to the price of the product. In several cases, the battery cost might almost be as high as the advance disposal levy, particularly in the sector for the construction of site illumination or grazing fence batteries. This results in a biased view and unrest in the relevant market segments if batteries are offered that are not subject to an advance disposal levy, but which are disposed of using the BESO system, the cost being borne by this organization. Counter actions against these 'black sheep' are possible but, in practice, their implementation is complex and expensive. A solution can only be provided by a legal obligation to pay advance disposal levies.

It has proved worthwhile that a special organization has been created for the advance disposal levy which, independent of the branch associations, can pursue its activities purely as a self-help organization. This gives the organization transparency and independence; independence also from the recycling companies, which, is necessary.

7. Summary

The prerequisites necessary for a successful advance disposal levy based on BESO's experience, are the following key factors:

- (i) the advance disposal levy should be imposed and in direct relation to the cost of disposal;
- (ii) the flow of goods and funds must be transparent;
- (iii) the charge collected must be clearly earmarked and its purpose determined;
- (iv) the organization responsible for imposing the charges must be independent of the trade and recyclers, and
- (v) outsiders must be forced to participate or be excluded from the system.