



Memo for Dialogue forum

Soil & Waste
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Local authority reporting of costs for collection of waste portable batteries and accumulators in 2010

1. Introduction

As from 1 January 2009 producers and importers of portable batteries and accumulators have been obliged to finance the municipal collection of waste portable batteries and accumulators. From the same date local authorities have been obliged to establish collection schemes for waste portable batteries and accumulators in the vicinity of its citizens.

To allow for the calculation of local authorities' costs for collection the local authorities must report costs incurred to the Environmental Protection Agency. Reporting deadline was set at 1 April. In the annual reporting the local authorities have informed about the collection schemes established and they were also asked to inform about the share of households covered by these schemes. This information has primarily been used to calculate costs per household for, for example, a bag scheme.

All local authorities have reported data. The number of local authorities in 2011 submitting data in due time increased, but again this year it was necessary to send out reminders to obtain data from all local authorities.

Based on reported data the Environmental Protection Agency has drawn up this memo presenting this year's results. The memo and its appendices will be used in the discussions to be held in the Dialogue forum including discussions of how to use the year's reporting from local authorities with the best results for inspiration in other local authorities.

2. Results

Municipal reporting of costs

In the reporting form the local authorities were to state total costs for collection of batteries broken down on direct and indirect costs. In addition, the local authorities were asked to state whether it uses actual costs or estimated costs. As to indirect costs the local authorities had the option to use the prescribed overhead rate of 20% of direct costs. It appears from the enclosed table which option each local authority has chosen.

Table 1: Key figures regarding costs for collection

	Total costs (DKK)	Direct costs (DKK)	Indirect costs (DKK)	Population per 1 January of the year ¹	Households per 1 January of the year ²	Average cost per capita (DKK)	Average cost per household (DKK)	Average cost per Collected kg (DKK) ³
2009	15,159,235	12,910,897	2,248,295	5,511,355	2,563,862	2.75	5.91	12.70
2010	15,812,229	13,316,403	2,370,606	5,534,738	2,573,417	2.86	6.14	12.32

¹ Source: Statistics Denmark - © www.statistikbanken.dk/FAM55N

² Source: Statistics Denmark - © www.statistikbanken.dk/FAM55N

³ Calculated from amounts collected by the local authorities. 2009 figures are corrected further to errors found in BAT Statistics for 2009

It also appears that:

- Total costs for collection of portable batteries in 2010 increased by around 650,000 DKK from 2009.
- Costs per capita for collection of portable batteries range from 0.23 DKK to 13.61 DKK
- Costs per household for collection of portable batteries range from 0.49 DKK to 31.61 DKK
- Costs per collected kilogram range from 1.00 DKK to 90.14 DKK. Three local authorities exceed 40 DKK per collected kilogram. Another five local authorities exceed 20 DKK per collected kilogram.

Some of the most expensive local authorities have told the Environmental Protection Agency that in 2010 they were bound by a relatively expensive contract on household collection. Therefore, a decrease in costs in these local authorities is to be expected once these contracts are up for renegotiation.

Collected amounts

Table 2: Collected amounts of waste portable batteries – reported per producer

Tonnes	Municipal collection sites ⁴	Collective collection sites	Producers' own collection	Total collected
2009	1,193.4 ⁵	205.66	1.16	1,400.81
2010	1,283.3	118	1	1,402.3

Source: WEEE and BAT Statistics 2009/ DPA-System, November 2009 and draft WEEE and BAT Statistics 2010

In 2010 1,283 tonnes of portable batteries were collected in the municipal collection. In addition, producers have collected 119 tonnes of portable batteries. A total of 1,402 tonnes of portable batteries have been collected. Generally, this is identical to the result in 2009. The municipal share is larger than the share of producers' own collection. In 2010 an average of 13.09 tonnes of batteries per local authority were collected, which is 0.92 tonnes more than in 2009.

In eight local authorities, no collection of batteries has been registered. All eight local authorities have told the Environmental Protection Agency that they have introduced collection schemes. Batteries collected in these local authorities are presumably included in the producers' reporting of amounts taken back from other municipal collection sites.

It has not been checked where batteries from local authorities without reported amounts have been registered. One reason may be the existence of intermunicipal recycling centres and collection sites for portable batteries. Therefore, reservations must be made regarding statement of registered kilograms of

⁴ It should be noted that there is a minor discrepancy between producers' reporting of collected amounts from municipal collection sites per producer and reporting per collection site both for 2009 and for 2010. In DPA-System's WEEE and BAT Statistics 2009, appendix 1, other issues affecting data for batteries are described.

⁵ In the draft WEEE and BAT statistics for 2010 the figure for 2009 has been readjusted downward, since a data entry error has been found for one local authority. The adjusted figure is used in this statement.

portable batteries collected per local authority. Thus, some local authorities may stand for larger or smaller amounts than the actual collection in their territory.

A concrete example of this is batteries collected in the City of Frederiksberg. Frederiksberg cooperates with the City of Copenhagen and the Municipalities of Dragør, Tårnby and Hvidovre, and the result for all these local authorities is that they collect 249 grams per citizen, which is slightly above the national average.

For 2009 the Environmental Protection Agency estimated together with DPA-System, the latter receiving data on collected amounts from producers, that data regarding local authorities where batteries were collected were subject to uncertainty, since producers had not systematically over the year registered their collection from the correct collection sites. DPA-System has told that the data basis in this respect is better in 2010.

Data from best local authorities

Discussions have been held in the past in the Dialogue forum about the expediency of studying those local authorities that collect most waste batteries per capita and that do so in the most cost-effective way.

Therefore, data have been processed to show, in appendices 2-4, which ten local authorities have collected the most batteries per capita and have the lowest costs per capita and per kilogram. Appendices 2-4 are found in a separate document.

However, it should be noted that among those local authorities that collect the largest amount of batteries there will be batteries from some of those local authorities that have registered no collection. This is included in the tables by entry of the average collection per capita in the waste management company in which each local authority participates.

The ten local authorities with the highest collection have average costs per capita of 3.22 DKK, which is above the national average. The four local authorities with the highest collection are all below the national average cost per capita. These are the Municipalities of Mariagerfjord, Lyngby-Tårnbæk, Norddjurs and Høje-Tåstrup. If average data for the waste management companies they are part in are studied, the result is balanced, as in this case only the Municipalities of Mariagerfjord and Norddjurs are above the national average. The Municipality of Mariagerfjord with 563 grams has the highest collection per capita and it is with 1.81 DKK scoring the second-lowest cost per collected kilogram.

Of the ten local authorities with the lowest cost per collected kilogram five are above the national average of 232 grams per capita. These are the Municipalities of Mariagerfjord, Rudersdal, Nyborg, Lemvig and Vesthimmerland.

It cannot be seen directly from the tables which collection schemes give the best result as this would require a detailed study.

2. Quality assurance of data

In the reporting forms the local authorities have reported their *direct costs*, *indirect costs* and *total costs* for 2010. In addition, they were asked to state whether the figures entered are *actual* or *estimated costs* and they were asked to inform about the established *collection schemes*.

After a scrutiny of the returned reporting forms follow-up questions were sent to 50 out of the 98 local authorities.

The quality assurance was made by making a first screening in which reports from those local authorities that had replied adequately and that had not stated any costs were entered directly in the final form without further handling.

If a local authority had stated actual costs the Environmental Protection Agency generally used this figure without further questions. This was not the case, however, if the stated costs deviated significantly from the average or from the costs reported in 2009. In these cases follow-up questions were asked; information received has primarily been used under section 3, where the Environmental Protection Agency has searched for information that can be used for mutual learning among the local authorities.

It is seen that there are mainly three types of reasons why the Environmental Protection Agency had to ask for follow-up information from the local authorities:

- No justification of estimated costs.
- Large deviation between reported costs in 2009 and 2010.
- Unclear expenses.

The approach in the search for further information was to send out a number of follow-up questions to the information stated in the reporting forms. Again, it was necessary to remind the local authorities for replies, and in several cases the Environmental Protection Agency had to contact the local authorities by telephone in order to obtain the desired replies.

In several cases the replies led to an adjustment of the municipal reports either because the local authority found a calculation error or because it had stated costs that must not be included in total costs. In several cases the replies led to repeated contact to the local authority for more details; this was done by telephone.

3. Information for mutual learning among local authorities

A review has been made of battery collection schemes in the local authorities. The local authorities in general have many different schemes and many different associated costs. This is naturally due to several issues such as different service level, geography, demography etc. in the different locations.

Table 1: Number of different battery collection schemes

	Number of local authorities
Bag scheme	67
Box scheme	17
Container scheme	51
Special trash truck	17

The above table 1 shows the number of local authorities divided on types of battery collection schemes. In addition, all local authorities collect batteries at their recycling centres. Furthermore, the local authorities may have other schemes of varying kind.

Below is given a review of the different battery collection schemes in the local authorities. For those schemes that are most homogeneous across the local authorities the Environmental Protection Agency has chosen to compare costs specifically. This is done since it gives the local authorities a good benchmark for the cost of similar schemes elsewhere. It should be mentioned that many local authorities have other collection schemes that are estimated to be efficient both in terms of collection of batteries and costs associated with the schemes.

The local authorities were not asked to state the costs of each scheme. The Environmental Protection Agency has particularly reviewed battery collection in bag schemes, at recycling centres and in

container/box scheme. Those local authorities for which it was possible to isolate costs associated with the schemes have been included in the comparison. Generally it has been assumed that the estimate in the local authorities of costs associated with the schemes is correct despite the fact that different local authorities have used different estimates. These differences in estimates are discussed briefly for each collection scheme. General results of the review are shown below:

Table 2: Battery collection schemes and costs per capita

Scheme	Number of local authorities	Average per capita	Highest per capita	Lowest per capita
Bag scheme	38	1.23	9.94	0.16
Recycling centre	37	0.48	1.7	0.09
Container/box scheme	17	0.84	3.07	0.15
Other schemes	7	0.32	4.04	0.14

Bag scheme

For bag schemes it was possible to isolate costs for 38 municipal schemes. These have been compared on costs per capita in relation to the share of the territory that the scheme was stated to cover. Average cost per capita in the 38 local authorities amounts to 1.23 DKK. This covers significant price differences ranging from the most expensive bag scheme amounting to 9.94 DKK per capita to the cheapest at 0.16 DKK per capita. It should be mentioned, however, that there are differences in the frequency of collection among the local authorities, but they have all been estimated to have a sufficient service level.

Relatively many local authorities have used actual costs in their statement of costs for their bag schemes. Others have used estimates. Some have stated a price per collected kilogram and in these cases prices range from 10 DKK per kilogram to 33.08 DKK per kilogram. Other local authorities have estimated costs associated with their bag scheme as a share of total collection of domestic waste. These shares have been estimated in the different local authorities to range from 0.5 % to 2 % of total costs associated with collection of domestic waste.

Recycling centres

For collection at recycling centres it was possible to isolate costs for 37 schemes. It should be mentioned that some local authorities have chosen not to calculate and include costs for their recycling centres. These local authorities have not been included in this comparison. The comparison has been conducted as described above with the presupposition, however, that recycling centres cover all residents in the municipality. Average costs per capita in the 37 local authorities amount to 0.48 DKK. This covers significant price differences ranging from the most expensive recycling centre scheme amounting to 1.70 DKK per capita to the cheapest at 0.09 DKK per capita. The share of costs for batteries at the recycling centres has been calculated in different ways. Some local authorities have recorded the time spent on batteries at the recycling centres. Other local authorities state the share of costs for batteries at the centres as a proportionate share, typically 0.1 %.

Container and box schemes

It was possible to isolate costs for collection in box and container schemes for 17 local authorities. Average costs per capita for the 17 local authorities amount to 0.84 DKK per capita. This reflects a range from the most expensive with 3.07 DKK per capita to the cheapest accounting for 0.15 DKK per capita. The local authorities have here used estimates such as proportionate share of collection together with paper and glass. These estimates range from 5 % to 33.33 % of paper and glass collection. Others use a proportionate share of collection of hazardous waste. Here the estimates range from 5 % to 20 % of hazardous waste collection.

Other schemes

As mentioned above, a large number of other schemes do not belong to these types of schemes. This covers, for instance, collection in special trash trucks and collection through caretakers in blocks of flats.

Estimates for the proportionate share of trash truck collection range from 2 % to 10 %.

Conclusions

It appears from the above that there are different ways in which the local authorities collect portable batteries. There are also certain differences among the costs associated with the different collection schemes in the different local authorities. This may be due in part to different service levels in the local authorities, differences in estimates and in contractual obligations. The local authorities should therefore be in a position to utilize the possibility of comparing costs associated with different schemes with other local authorities, for instance in cases where the authority is to negotiate a new contract with a waste management company.

Alternative conclusions:

- The local authorities using bag schemes amounting to more than the average of 1.23 DKK per capita should check solutions in municipalities having costs below the average.
- The average price for the bag scheme might be considered in contract negotiations with waste management companies.
- A simple way for the local authorities to calculate batteries' costs at the recycling centres might be to use 0.1 % of total costs for the recycling centre.