

# Description on the Calculation Method

## Waste Electrical and Electronic Equipment (WEEE)

### – Regional Amounts in Mixed Municipal Solid Waste, Amounts Source-Separated, and Source-Separation Rate

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9 March 2021

## Introduction

Waste electrical and electronic equipment (WEEE) is one of the focus areas of the National Waste Plan in Finland. Nationally it is of high priority to lengthen the lifetime and increase the utilisation rate of electrical and electronic equipment. It is also important to decrease the amount of WEEE in the mixed municipal solid waste as well as increase its recycling. The correct way for disposal of WEEE is to take it to separate collection e.g. in shops selling electrical and electronic equipment.

The amounts of WEEE in mixed municipal solid waste, amounts source-separated, and the source-separation rate of WEEE are key indicators in Circwaste project. Exact sub-national data on WEEE is not currently available. Thus, this monitoring is based on national data that has been divided to the sub-national regions based on population. In addition to this, some regional data is used to complement the estimation.

In this document, you can find the description of the method and references used for the calculations.

## Method and References

This monitoring was carried out for the first time in 2018. The calculation method was modified in 2021. Then, monitoring for 2017 and 2018 as well as update for 2016 according to the modified method was done.

National amounts for the source-separated and collected WEEE from households is available on a public website ([link](#)). The data are collected from producer responsibility organisations by a national authority, Pirkanmaa Centre for Economic Development, Transport and the Environment. The national data on WEEE collected from households is divided to the Circwaste project's key regions based on their population. The key regions in Circwaste project are Central Finland, North Karelia, South Karelia and Southwest Finland (including Satakunta and Varsinais-Suomi regions).

The amount of WEEE in mixed municipal solid waste is estimated based on national data on the amount of mixed municipal solid waste and data from waste picking studies on mixed municipal solid waste from households. The amount of mixed municipal solid waste produced by households is estimated based on municipal solid waste statistics by Statistics Finland, and assuming that 65 % of municipal solid waste is produced by households (Salmenperä et al. 2016, Kohdennetut keinot kierrätyksen kasvuun, [link](#)). The amount of mixed municipal solid waste from households is 144 kg per person in 2016–2017 and 173 kg per person in 2018.

The consistency of mixed municipal solid waste was estimated based on Suomen kiertovoimary KIVO's register "Koostumustietopankki" that collects the data on picking studies for mixed municipal solid waste from households in Finland ([link](#)). If there were recent results from the region in question, they were used. In other case, the national average consistency was used. According to the national average consistency, the mass-based share of WEEE in the mixed municipal solid waste from Finnish households is 0.7%. The data is based on four surveys with the fluctuation rate of 0.4–1.0%. The national estimate was used in the indicators for North and South Karelia.

For Central Finland and Southwest Finland, there are regional studies on the consistency. For Central Finland, a survey carried out by the local waste companies Sammakkokangas, Mustankorkea and Jämsän Jätehuolto liikelaitys in 2015 was used ([link](#)). According to the

survey, the share of WEEE in the mixed fraction is 0.71%. For Southwest Finland a survey by the local waste company Lounais-Suomen jätehuolto in 2017 was used for estimating the indicator values for 2016 and 2017 ([link](#)). The mass-based share of WEEE is 0.5%. A more recent study carried out in 2019 was used to calculate the indicator values for 2018, with the share of WEEE being 0.4% ([link](#)).

The total amount of WEEE produced in the households of each region is estimated as a sum of collection of source-separated WEEE and the WEEE found in the mixed municipal solid waste. The results are shown in kilograms of WEEE per person for each year. The source-separation rate is estimated by dividing the amount of source-separated WEEE by the total amount.

The indicator results are to be considered only as estimates. There is significant uncertainty in the results. In order to provide more reliable sub-national monitoring on waste, the availability of sub-national data on waste ought to be developed.