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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND  
THE COUNCIL**

**on statistics compiled pursuant to Regulation (EC) No 2150/2002 on waste statistics and  
their quality**

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## **1. INTRODUCTION**

### **1.1. Regulation on waste statistics**

The aim of Regulation (EC) No 2150/2002 of the European Parliament and of the Council of 25 November 2002 on waste statistics<sup>1</sup> (hereafter the Regulation) is to produce statistics on waste falling under the scope of Directive 2008/98/EC on waste (the Waste Framework Directive)<sup>2</sup>. Article 8(1) of the Regulation requires the Commission to submit a report on the implementation of the Regulation to the European Parliament and the Council every 3 years (following the first report, which was to be submitted within 5 years of the entry into force of the Regulation). The first report was published in 2008,<sup>3</sup> the second in 2011<sup>4</sup> and the third in 2014.<sup>5</sup>

### **1.2. Different national approaches and quality**

The Regulation lays down the data to be submitted and the quality required, while the choice of the specific method of drawing up waste statistics is left to the Member States. This enables them to keep their data collection systems and minimise the burden of complying with the Regulation.

The Regulation (Annex I, section 7) requires Member States to submit a quality report along with the data. In these reports, Member States refer to quality elements commonly used in the European Statistical System<sup>6</sup> and set out in Commission Regulation (EC) No 1445/2005 on the quality of waste statistics.<sup>7</sup>

### **1.3. Quality control**

Since the first data delivery in 2006, the Commission (Eurostat) has set up an efficient two-step quality control system.

In a first step after the data delivery a quick evaluation of the data and quality reports is performed within two months of the reporting deadline. In this step, data validation concerns mainly the internal coherence of new data and developments over time. The analysis is performed at a highly aggregated level and aims to detect major breaks in series and to check whether the data is fit for publication. An evaluation report is sent to the Member States, which may request an explanation and/or a revision of the data, depending on the observations made.

The second step is an in-depth validation. It analyses the data at a more detailed level (e.g. by economic sector and by waste category) and compares patterns and developments across countries. The validation checks include:

- intra-country comparisons of waste generation for each economic activity with values from previous years;
- cross-country comparisons of the data for each economic activity;

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<sup>1</sup> OJ L 332, 9.12.2002, p. 1.

<sup>2</sup> OJ L 312, 22.11.2008, p. 3.

<sup>3</sup> COM (2008) 355 final, 13.6.2008.

<sup>4</sup> COM (2011) 131 final, 17.3.2011.

<sup>5</sup> COM (2014) 79 final, 14.2.2014.

<sup>6</sup> Eurostat website on Quality:

[http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=2273.12273\\_47140765&\\_dad=portal&\\_schema=PORTAL](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=2273.12273_47140765&_dad=portal&_schema=PORTAL).

<sup>7</sup> OJ L 229, 6.9.2005, p. 6.

- an intra-country comparison of waste generated and waste treated for each waste category;
- cross-checks with waste data from other reporting obligations, such as compliance monitoring pursuant to other waste-related legislation.

The results are checked against the countries' quality reports, the feedback from the first evaluation step and any other available documents (e.g. reporting documentation from previous years) and then discussed with Member States.

In addition to these two steps the Commission (Eurostat) has proposed a validation step which the countries should perform before delivering the data and which consists of standard validation rules. A common set of standard validation rules for waste statistics was agreed with the Member States in 2014. Eleven Member States already used these rules before submitting data for the reference year<sup>8</sup> 2012. This is an important step towards further improving the efficiency of the validation process.

The Commission (Eurostat) is further enhancing the methodological guidance documents that are available on Eurostat's website and continuing to improve and refine the data quality control system.

## **2. PUNCTUALITY AND TIMELINESS**

Data and quality reports are to be submitted biennially to the Commission (Eurostat) within 18 months of the end of the reference year<sup>9</sup>.

Compliance with the reporting deadline for the reference year 2012 is similar to that of the 2010 reference year. In total, 21 Member States and EEA/EFTA countries delivered their 2012 data sets and quality reports on time or within 1 month of the deadline. Both data and quality reports arrived more than 3 months after the deadline for 5 Member States (Denmark, Ireland, Italy, Lithuania and Romania) and 1 EEA/EFTA country (Iceland). Parts of data sets or quality reports arrived more than 3 months after the reporting deadline for 3 countries (Finland, Latvia and the United Kingdom).

The Commission (Eurostat) is taking steps to urge countries to review their statistical production processes and deliver good quality data within the set deadlines.

### *Publication*

The data on waste generation and waste treatment were published in the Eurostat dissemination database on 1 October 2014.

## **3. COMPLETENESS**

The delivery of complete national data sets is crucial for the production of EU aggregates. Missing data limit the information value of waste statistics. Data is lacking where countries either have no data sources or insufficient data for estimates.

The number of missing values and the number of countries reporting missing values fell considerably between the reference years 2010 and 2012 for the waste generation data set. In 2010, 8 countries reported missing values but this dropped to 3 in the reference year 2012. The total number of missing values fell from 4.1% in the reference year 2010 to 1.5% in 2012. The tendency is the same for the waste treatment data, though less pronounced. The

<sup>8</sup> Reference year means the period, which is described by the data. As the delay of the data is 18 months, the data for reference year 2012 is reported in 2014.

<sup>9</sup> Regulation (EC) 2150/2002, Section 7(2) of Annexes I and II.

share of missing values fell from 3.5% in the reference year 2010 to 3.1% in 2012 and the number of countries reporting missing values decreased from 8 to 6. More than half of the missing values in the waste treatment data sets (55%) concern the treatment category 'backfilling'. Backfilling data was collected for the first time in 2010 after an amendment of the Regulation<sup>10</sup>.

## **4. DATA ACCURACY**

### **4.1. Data coverage**

Statistics on waste generation must be compiled for all economic sectors and for households, and must include waste arising from recovery and disposal operations — what is known as secondary waste. The statistics should also cover waste from small businesses (< 10 employees), though such firms should be exempt from surveys wherever possible.

Statistics on waste treatment cover all waste that is recovered or disposed of within a country, irrespective of the origin of the waste. The underlying concept of the Regulation is to collect data on the final destination of waste. Preparatory treatment operations are not covered.

#### *Coverage errors and differences in data coverage*

The coverage errors observed are mostly due to:

- differences in the application of the waste definition;
- different methodological approaches and different priorities in national waste management and waste statistics;
- sector-specific coverage problems.

Four areas show the biggest differences in data coverage:

- The different coverage of extractive wastes (waste from mining and quarrying activities) has a very high impact. The biggest differences across countries are due to the coverage of overburden, i.e. natural materials that are removed from mining sites to get access to the ore without being processed, and with regard to extractive wastes that are managed at the mine site.
- The distinction between waste and by-products has a significant impact on the waste amounts in the economic activities<sup>11</sup> NACE A (agriculture, forestry and fishing) and NACE C (manufacturing). This is especially the case for the waste categories wood waste, animal and vegetal waste, and slags from metal production.
- The variance of waste generation in the sector NACE F (construction) indicates differences in data coverage.
- As already mentioned in section 3, some countries are not yet able to report on the treatment category 'backfilling'.

The overall impact of coverage errors is hard to assess. They can lead to both underestimates and overestimates. The impact is assumed to be highest for mineral wastes from NACE B (mining and quarrying).

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<sup>10</sup> OJ L 253, 28.9.2010, p 10

<sup>11</sup> Classified according to the Classification of Economic Activities in the European Community (NACE), current version NACE Rev. 2.

## 4.2. Breakdown by economic sectors

The Regulation calls on Member States to report their data broken down by 19 categories (18 waste generating activities plus households). The breakdown of economic activities is defined according to NACE. The correct allocation of waste to generating activities is a prerequisite for:

- the comparability of sector-specific waste amounts;
- the consistency of waste statistics with business statistics.

The allocation of waste to the generating activities depends on the methods applied for collecting data and on the statistical units for which waste statistics are compiled. The comparability and consistency of data are based on the use of business registers for data collection. As the Regulation allows the use of either local units or kind-of-activity units as statistical units for compiling data, there can be differences in the allocation of wastes across countries even where the provisions of the Regulation are properly applied.

The overall impact of misallocation is considered to be low. Unlikely cases such as mineral wastes from waste treatment or stabilised wastes produced by households would be detected by validation and thus would be explained or corrected. Such cases do not occur very often.

## 4.3. Waste classification

The Regulation establishes the breakdown for reporting to the EU by waste category according to the European Waste Classification for Statistics<sup>12</sup> (EWC-Stat). However, it does not stipulate a specific classification to be used for national data collection.

Most countries collect their data according to the EU list of waste<sup>13</sup>, which comprises 839 waste types. Despite some problems in applying the list, the widespread use of this classification ensures a high level of comparability, at least at the aggregated level that is requested in the Regulation. The overall impact of classification errors on data accuracy is considered to be small.

## 4.4. Differences between waste generation and waste treatment

The difference between the amount generated and treated in the EU in 2012 is around 200 million tonnes. This equals approximately 8 % of all generated waste. This difference has been stable over the last two reporting periods. It was higher in 2006 and 2008, at 400 million tonnes. The pattern stays the same: more wastes are generated than treated. In 2012 the difference was highest for sludges and liquid wastes from waste treatment (approximately 70 %) and lowest (nearly 0 %) for soils.

Several phenomena can explain the difference between waste generation and waste treatment:

- Not all waste is treated in the country where it is generated. Import and export data are not collected under the Regulation, thus differences arising from imports and exports cannot be quantified with the Regulation data. Estimates from external trade data show that this effect explains about one-fifth of the difference for the whole EU. For individual Member States this effect may be higher. For example, for Germany waste imports amount to more than 4 % of its generated waste, while the United Kingdom exports more than 6 % of the waste it produces.

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<sup>12</sup> Current version EWC-Stat Rev. 4, which has 51 categories.

<sup>13</sup> Established by Commission Decision 2000/532/EC, last amended by Commission Decision 2014/955/EU.

- Data on waste generation cover both primary and secondary waste generated whereas waste treatment refers to final treatment and treated waste should be counted only once.
- All waste categories except sludges are reported in normal wet weight. During the pre-treatment process, for instance the preparatory treatment operations for disposal (treatment of liquid waste, e.g. leachate or emulsion of oil/water), water weight is lost and waste enters final treatment with a significant weight reduction.
- Some operations are excluded from the scope of Annex II of the Regulation, such as co-incineration plants that use only particular biomass wastes as fuel.
- Not all wastes are treated in the same year as generated. Some wastes are temporarily stored. Thus waste treated in year  $t$  may contain waste generated in year  $t-1$ . Waste generated in year  $t$  may be treated in year  $t+1$ .

## **5. COMPARABILITY**

### **5.1. Comparability over time**

The data collected for the reference year 2012 was the second collection since the major changes brought in by the amended version of the Regulation. These changes have been well implemented by the countries. The Commission (Eurostat) has worked continuously on the presentation and analysis of the time series, which consist currently of 5 reference years (2004, 2006, 2008, 2010 and 2012).

Countries' quality reports have proved to be a useful tool to monitor methodological changes and their impacts on data comparability. Evaluation of national quality reports shows that nearly all Member States have made considerable adjustments to national waste statistics approaches since 2004. Most countries are further improving their data collection with regard to data quality (e.g. closing of data gaps and improvement of coverage) and to the efficiency of their methods.

Improving data collection over the years has created breaks in the time series. Countries revise the data sets for previous years to limit these breaks. Users are informed. The Commission (Eurostat) flags the discontinuity of the time series in the datasets disseminated.

### **5.2. Comparability across countries**

Due to common definitions and classifications, the comparability of data across countries is fairly high for most sectors and waste types. However, some problems in comparing data across countries still arise due to the differences in coverage described in section 4.1.

## **6. BURDEN ON BUSINESSES**

In their quality reports Member States show a commitment to keep the burden on businesses as low as possible. This is reflected in the increasing number of Member States which collect information on the reporting burden and are able to quantify the average time respondents need to complete questionnaires or reporting forms. The information is gathered from respondents via questionnaires or determined by specific studies. Around half of the Member States use administrative data as their main source for waste statistics and thus avoid burdening the data providers with additional questionnaires. Other countries use

administrative data as one among many data sources. Small companies are exempt from surveys in different ways<sup>14</sup>.

The number of countries is growing that have implemented or plan to implement electronic reporting systems, i.e. systems which automatically forward data required under waste legislation from waste treatment facilities to the statistical authorities. Electronic reporting tools for some or all waste data are now available in e.g. Belgium, Croatia, Denmark, Ireland, Lithuania, Hungary, Austria, Poland, Portugal, Romania, Slovenia, Sweden, Norway and the United Kingdom.

## 7. INDICATOR DEVELOPMENT

Data produced are used to compute indicators. For instance, the [Union's sustainable development indicators](#) on '[generation of waste excluding major mineral wastes](#)' and on '[generation of hazardous waste by economic activity](#)' are available on the Eurostat website. These indicators are reported in kilogram per inhabitant to facilitate comparison across countries.

A new indicator set on the [management of waste excluding major mineral wastes](#) has been developed. The indicator shows the final treatment of nationally generated waste<sup>15</sup>. In contrast to the data collected under the Regulation, the treatment of exported waste is also taken into account, whereas imported waste is excluded from the indicator.

These indicators may be used as a valuable input to monitoring implementation of the Commission's [circular economy strategy](#).

## 8. ACHIEVEMENTS AND OUTLOOK

Significant progress has been made in compiling waste statistics since reporting started in 2006. The completeness of data delivery by Member States has steadily improved. Waste statistics have reached a fairly high degree of comparability across countries for most waste categories and sectors and considerable progress is being made towards achieving full data coverage. Overall, the data are of adequate quality for most countries. However, to help achieve the EU's environment, industrial and raw materials policy objectives, further improvement is needed. The Commission is continuing to work with the Member States on these improvements, for example through seminars and exchanges of best practice.

With the data delivery for 2012, data on waste generation and treatment are now available for 5 reference years, i.e. for the period from 2004 to 2012. With the longer time series, the data is becoming increasingly useful, for example for developing indicators or as input for climate-related analyses.

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<sup>14</sup> The exemption of small companies from surveys is handled in different ways. Some countries cover small companies by sample surveys and extrapolate the results. Most, though, exclude them completely. Either the figures may be ignored if the exclusion is consistent with the coverage and quality objectives of Article 3 of the Regulation or extrapolated by factor-based estimation models. Countries have established different exclusion thresholds, defined mostly by the number of employees or by the amount of waste generated per year. Some countries combine the two criteria to make sure that even small companies are covered by data collection when they exceed the defined waste generation threshold.

<sup>15</sup> The indicator covers all waste except 'major mineral wastes'. It provides a coherent set of indicators covering all waste treatment categories of Annex II, section 8, of the Regulation. The indicator set is based on the waste treatment data of the Regulation reflecting the amounts of waste that are managed in Member States. In addition, foreign trade statistics (COMEXT) data or national data on waste imports/exports are used to include the amounts of exported waste and to exclude the amounts of imported waste from the calculation.



At the same time, methodological improvements in individual countries may still have a significant impact on the time series, at national level and at the level of the EU-28 aggregate. Developments over time should thus still be interpreted with caution and after careful analysis of the underlying data.