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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

The aim of Regulation (EC) No 2150/2002 of the European Parliament and of the Council of 25 November 2002 on waste statistics[1] (hereinafter the Regulation) is to produce statistics on waste. The definition of waste falls under the scope of Directive 2008/98/EC on waste (the Waste Framework Directive)[2]. 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[3], the second in 2011[4], the third in 2014[5]and the fourth in 2016[6].

This report refers to the quality of the data collection, which took place in 2018, with reference to the waste produced and treated in 2016. The data collection required by the Regulation consists of three parts: waste generation, waste treatment, and waste-treatment plants, the latter disaggregated to NUTS II level.

Different national approaches and quality

The Regulation sets out which statistical data are to be submitted and the quality required of this data. However, the Regulation leaves to the Member States the choice over the specific method for drawing up waste statistics. This enables them to keep their data collection systems and minimise the burden of complying with the Regulation. Data are collected biennially in even years.

The Regulation (Annex I, Section 7) also 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[7] and set out in Commission Regulation (EC) No 1445/2005 on the quality of waste statistics[8].

Quality control

Since the first data collection in 2004 the Commission (Eurostat) set up an efficient two-step quality-control system to check the data they receive from the Member States.

In a first step after the data have been delivered to the Commission, the Commission performs a quick evaluation of the data and quality reports within 2 months after the reporting deadline. In this step, data validation focuses mainly on 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 validate that the data are fit for publication. The Commission (Eurostat) then sends an evaluation report to the Member State that

1 OJ L 332, 9.12.2002, p. 1.
2 OJ L 312, 22.11.2008, p. 3.
3 COM(2008) 355 final, 13.6.2008.
4 COM(2011) 131 final, 17.3.2011.
5 COM(2014) 79 final, 14.2.2014.
6 COM(2016) 701 final, 3.11.2016.
7 Eurostat website on Quality Reporting: https:/ec.europa.eu/eurostat/web/quality/quality-reporting.
8 OJ L 229, 6.9.2005, p. 6.

submitted the data. This evaluation report may request an explanation and/or a revision of the data if necessary.

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

- intra-country comparisons of waste generation for each economic activity with values from previous years;
- comparisons of the data for each economic activity across countries;
- 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 under other waste-related legislation.

The results are checked against: (i) the countries' quality reports; (ii) the feedback from the first evaluation step; and (iii) any other available documents (e.g. reporting documentation from previous years). The results are then discussed with countries. The purpose of this in-depth validation is not only to detect inconsistencies, but also to improve the quality of the data in the long run.

The Commission (Eurostat) continues to update the methodological guidance documents available on Eurostat's website, and continues 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[9].

Compliance with the reporting deadline for the reference year 2016 has not changed compared to previous years. In total, 23 Member States and 2 EFTA countries delivered complete datasets and quality reports on time. Two Member States sent part of their data with a delay of less than 1 month. Five Member States and 1 EFTA country submitted both data and quality reports more than 1 month after the deadline. Two Member States submitted datasets more than 9 months after the deadline.

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 Commission (Eurostat) completed the publication of the data on waste generation for the reference year 2016 on 14 September 2018 in the Eurostat dissemination database. It also

[9] Regulation (EC) No 2150/2002, Section 7(2) of Annexes I and II.

completed the publication of the data on waste treatment on 18 September 2018 in the Eurostat dissemination database.[10]

3. COMPLETENESS

The delivery of complete national datasets is crucial for the production of EU aggregates. Missing data undermine the informative value of waste statistics. Data are incomplete whenever countries have either no data sources or insufficient data for estimates.

Both the number of missing values and the number of countries reporting missing values decreased considerably for waste-generation data collections between reference years 2010 and 2016. In 2010, 8 countries reported missing values, but this dropped to 3 countries in the reference year 2016. The total number of missing values fell from 1,668 in the reference year 2010 to 97 in the reference year 2016. Most of the missing values concerned waste from households.

The trend is the same for the waste-treatment data. There were no missing waste-treatment values reported in 2016, an improvement compared to 263 missing values in the reference year 2010.

4. DATA ACCURACY

Data coverage

Statistics on waste generation must be compiled for all economic sectors and for households. These statistics must include waste arising from recovery and disposal operations, also known as secondary waste. The statistics must also cover waste from small businesses (fewer than 10 employees), although such small businesses 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 goal of the Regulation is to collect data on the final destination of waste. The Regulation does not require data to be collected on preparatory treatment operations. However, for some treatment categories, some countries have reported pre-treatment data (such as sorting or storage) as final treatment. The Commission (Eurostat) asked these countries to correct their data. Generally, the coverage of data collection for waste statistics improved for reference year 2016 compared to 2014. The number of missing values decreased, the share of waste that had to be estimated decreased, and additional sources were used. Compared to reference year 2014, coverage improvements could be detected in eight countries for reference year 2016. Two important findings of the validation of 2016 statistics are the following:

- Some countries are not yet able to report on the treatment category ‘backfilling’ or use the backfilling category to report landfilling. This problem was detected during

[10] https://ec.europa.eu/eurostat/web/waste/data/database

validation. The Commission (Eurostat) asked the concerned countries to improve this situation in order to report fully correct data sets.

- Mineral waste is of relatively limited relevance, but accounts for a large share of total waste. For this reason, the Commission (Eurostat) developed an additional indicator 'Waste excluding major mineral waste'.

Breakdown by economic sectors

The overall impact of wrong allocation by economic sector is considered low. Unlikely cases are usually detected during validation and thus would be explained or corrected. Such cases do not occur very often.

Categories of waste

The Regulation sets out that the categories of waste for reporting to the EU must follow the European Waste Classification for Statistics[11] (EWC-Stat). EWC-Stat does not stipulate a specific classification to be used for national data collection.

Most countries collect their data according to the European list of waste[12], which comprises 839 waste types. Commission Regulation (EU) 849/2010[13] contains a transformation table for transforming the European list of waste codes to EWC-Stat codes. The widespread use of these two classifications ensures a high level of comparability, at least at the aggregated level that is requested in the Regulation. Eurostat considers the overall impact of classification errors on data accuracy to be small. Where classification errors result in major impacts they are already detected during the first quick validation and corrected immediately by the concerned Member State. One such error occurred in 2014, and in 2016 no such errors were observed.

Differences between waste generation and waste treatment

There are several differences between statistics for waste treatment and statistics for waste generation.

The amount of waste generated has differed from the amount of waste treated in the EU by around 200 million tonnes since 2008. This equals approximately 10% of all generated waste. The pattern has been stable since 2008: more waste is generated than treated. The difference is highest for sludge and liquid waste from waste treatment (approximately 70%) and lowest (nearly 0%) for soil.

Several reasons explain the difference between waste generated and waste treated. These differences are set out in the bullet points below.

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11 Current version EWC-Stat Rev. 4, which has 51 categories, laid down by Commission Regulation (EU) 849/2010.

12 Laid down by Commission Decision 2000/532/EC, last amended by Commission Decision 2014/955/EU. The European Waste Classification for Statistics (EWC-Stat) is purely classified by waste material. The European list of waste is much more disaggregated than the EWC-Stat and is based on material, use of the material, and origin of waste.

13 OJ L 253, 28.9.2010, pp. 2–41.

- Not all waste is treated in the country where it is generated. Import and export data are not collected under the Regulation, so differences arising from imports and exports cannot be quantified based on the Regulation data. Estimates based on external trade data show that this effect explains about one fifth of the difference for the whole EU. For individual countries this effect may be higher.
- The water content of waste also plays a role. All waste categories except sludge are reported in normal wet weight. During the pre-treatment process, such as 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 waste as fuel.
- Not all waste is treated in the same year it is generated. Some waste is 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.
- Waste treatment may create new types of waste and thus add to the waste generated, e.g. ash from waste incineration may also be waste. In order to make a quantitative assessment of this effect, the Commission (Eurostat) estimates the indicator 'secondary waste', which aggregates waste that is produced by waste treatment.
- Discarded vehicles or equipment are reported as such only under waste-generation statistics. Waste treatment is measured at the end of the treatment chain, i.e. after discarding and sorting. A vehicle consists of different materials, e.g. metal and plastic. These materials are reported finally under waste-treatment statistics. Hence, only in exceptional cases are vehicles and similar equipment reported under waste-treatment statistics.

Therefore, the difference between waste generation and waste treatment is not the result of the statistics for these two categories being of different quality. Instead, it reflects differences in the purpose of — and in the concepts used for — these two categories. However, depending on the waste class the difference should be within certain limits. If these limits are exceeded, the respective Member State is asked for explanations.

5. COMPARABILITY

Comparability over time

Quality reports submitted by countries are a useful tool to monitor methodological changes and their impact on data comparability. These quality reports show that nearly all countries have made considerable improvements to their approaches to national waste statistics since 2004. Most countries continue to improve: (i) data quality through their data collection (e.g. closing data gaps and improving coverage); and (ii) the efficiency of their methods.

Improved data collection over the years has created breaks in the time series. Countries revise the datasets for previous years to limit these breaks, and users are informed about these revisions. The Commission (Eurostat) flags the discontinuity of the time series in the disseminated datasets.

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. In order to increase comparability, the aggregate 'waste without major mineral waste' is published.

6. BURDEN ON BUSINESSES

In their quality reports, countries show a commitment to keep the reporting burden on businesses as low as possible. This is reflected in the increasing number of countries which: (i) collect information on the reporting burden; and (ii) 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[14].

A growing number of countries have implemented — or plan to implement — electronic reporting systems. These systems forward the data required under waste legislation automatically from waste-treatment facilities to the national statistical authorities.

7. INDICATOR DEVELOPMENT

Data produced are used to calculate indicators. For instance, the EU's sustainable development indicators on 'generation of waste excluding major mineral wastes'[15] and on 'Recycling rate of waste excluding major mineral wastes'[16] are available on the Eurostat website. These indicators are reported in both kilogram per inhabitant and as a percentage of waste treated across countries. The indicator 'management of waste excluding major mineral wastes' shows the final treatment of nationally generated waste[17]. In contrast to the data

[14] The exemption of small companies from surveys is handled in different ways. Some countries cover small companies by sample surveys and extrapolate the results. However, most countries exclude small companies completely. If the exclusion is consistent with the coverage and quality objectives of Article 3 of the Regulation the figures may be ignored. Alternatively, the figures may be extrapolated by factor-based estimation models. Countries have set different exclusion thresholds, determined 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.

[15] https://ec.europa.eu/eurostat/databrowser/view/sdg_12_50/default/table?lang=en

[16] https://ec.europa.eu/eurostat/databrowser/view/sdg_12_60/default/table?lang=en

[17] The indicator covers all waste except 'major mineral wastes'. It provides a consistent 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

collected under the Regulation, this indicator includes exported waste whereas it excludes imported waste.

In December 2018, the circular economy package[18] was adopted. To monitor the progress in Europe's transition towards a circular economy, Eurostat provides easy access to the relevant data for policy makers and the public in the form of 10 indicators[19]. The indicators *waste generation, food waste, recycling rate, specific waste streams* and *contribution of recycled materials to raw materials demand* are produced with data collected under the Regulation, or are retrieved directly from these data.

8. ACHIEVEMENTS AND OUTLOOK

Significant progress has been made in compiling waste statistics since the last report in 2016. The completeness of data delivery by countries 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 appropriate quality for most countries. The legislation on waste[20] revised under the circular economy package contains more precise rules on the measurement of waste-treatment operations and more precise definitions. This will also improve the comparability of waste statistics across countries. The Commission continues to work with Member States through other measures, for example through seminars and exchanges of best practices. A statistical investigation of major mineral waste would require additional efforts.

After the 2016 data collection, data on waste generation and treatment are now available for 7 reference years, i.e. for the period from 2004 to 2016. With the lengthening of the time series, the data are becoming increasingly useful, for example for developing indicators or as input for climate-related analyses.

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.

18 https://ec.europa.eu/environment/circular-economy/index_en.htm

19 https://ec.europa.eu/eurostat/web/circular-economy/indicators

20 https://ec.europa.eu/environment/waste/target_review.htm