



EUROPEAN COMMISSION
EUROSTAT

Directorate E: Sectoral and regional statistics
Unit E-2: Environmental Statistics and Accounts; Sustainable Development

30 June 2026

**Template for the Quality Report
on Waste Statistics for the reference year 2024**

1 Heading (QR_WASTE_HR_2024_1)

Part I: Description of the data

2 Identification

Country name **Croatia**

Reference year **2024**

Description of data set(s) delivered

Data set 1: Waste generation by waste category (EWC-STAT) and economic activities (NACE), tonnes/year

Data set 2: Waste treatment by waste category (EWC-STAT) and treatment category, tonnes/year

Data set 3: Number and capacity of recovery and disposal facilities (per NUTS 2 region) and population served by collection scheme (national)

Transmission date **30 June 2026**

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4 Description of the parties involved/sources used in the data collection

Table 1: Institutions involved and distribution of tasks

Name of institution	Description of key responsibilities
Ministry of Environmental Protection and Green Transition (MEPGT) / Institute for Environment and Nature	Collects, checks, processes and delivers (submits) data according to Waste Statistics Regulation. Maintains the Waste Management Information System: Environmental Pollution Register (EPR), Register of Waste Management Activities (RWMA), Central Management System for the Data on Landfills of Waste, Database on transboundary movement of waste, etc. Up to 1 st of January 2019, the Institute operated as Croatian Agency for Environment and Nature (CAEN).
Ministry of Environmental Protection and Green Transition (MEPGT) / Directorate for Environmental Impact Assessment and Sustainable Waste Management	Responsible for issuing the permits for hazardous waste management and permits for thermal treatment of non-hazardous waste. Maintains the End-of-Waste status Register.

The 20 county offices and office of the City of Zagreb	Performs quality check of data reported to EPR in terms of their completeness, consistency and credibility. Responsible for issuing the permits that are not covered by MEPGT/Directorate. Maintains registers for carrying out waste management operations – Register of waste collectors and waste recovery operators, Register of By-Products, Record of waste carriers, waste brokers, waste dealers and recycling yards, Record of re-use centers.
Environmental Protection and Energy Efficiency Fund (EPEEF)	Collects detailed data on special waste categories (packaging waste, waste tyres, waste oils, waste batteries and accumulators, end-of-life vehicles, waste electric and electronic equipment, waste containing asbestos, etc.) according to special (EPR) ordinances.

Ministry of Environmental Protection and Green Transition / Institute for Environment and Nature (MEPGT/Institute) operated as Croatian Agency for Environment and Nature (CAEN) up to 1st of January 2019. Its main activity is the collection and compilation of data and information about the environment and nature, in order to ensure and monitor the implementation of environmental policy and nature, sustainable development and the performance of professional activities related to the protection of the environment and nature. Pursuant to the Environmental Protection Act (OG No 80/13, 153/13, 78/15, 12/18, 118/18), the MEPGT/Institute is appointed as central information authority of the Republic of Croatia for coordinating reporting and submissions to the European Commission on the implementation of specific environmental protection regulations, including waste. The MEPGT/Institute is responsible for the maintenance of the Waste Management Information System, ensuring the availability and accessibility of waste-related data to decision-makers and the general public, and for preparing national and international reports on the status of the waste sector. In 2012, under an agreement with Croatian Bureau of Statistics (CBS), responsibility for the preparation and submission of data in accordance to WStatR to Eurostat was transferred to the CAEN (MEPGT/Institute). Data on Waste Statistics for the reference year 2010 and previous years were submitted by the CBS.

By the Waste Management Act (OG No 84/21)¹ and subordinate legislation, MEPGT/Institute collects and manages waste-related data such as: annual data on waste generation, collection and treatment (on-line database); data on waste management permits and certificates (on-line database); data on landfills (on-line database); data on transboundary shipments of waste; etc.

Ordinance on Environmental Pollution Register (OG No 3/22) stipulates the maintaining of database The Environmental Pollution Register (EPR). It contains annual data on waste generators ($\geq 0,5$ t hazardous and/or ≥ 20 t non-hazardous waste), all waste collectors and all waste treatment facilities. Electronic software (application) is used for accessing and maintaining the EPR, enabling network-based data entry, data processing and displaying of reported data. Necessary revisions of reporting forms and questionnaires for data collection were adopted in 2022. However, for 2022 reporting year, the questionnaires prescribed in previous Ordinance (OG No 87/15) were still in use.

Register of Waste Management Activities (RWMA) is a database that contains information and documentation on waste management permits (including those issued for hazardous, non-hazardous and municipal waste), Register of waste collectors and waste recovery operators, Record of waste carriers, waste brokers, waste dealers and recycling yards, Record of re-use centers. There are also Register of By-Products and the End-of-waste status Register, containing data on quantities for which the status of by-product or end-of-waste has been declared.

According to the Waste Management Act (OG No 84/21) all landfill operators are obliged to report data on landfills into the Central Management System for the Data on Landfills of Waste. Database contains general

¹ Previously Act on Sustainable Waste Management (OG No 94/13, 73/17, 14/19, 98/19)

data on technical measures on landfills, data on rest capacities, data on environmental protection measures carried out on landfills, data on status of landfill activity and remediation, data on landfilled amounts of biodegradable waste, data on total amounts of waste landfilled, etc. Data collected in this database are used for cross-checking data reported to EPR.

Transboundary Waste Shipment Database (TWSD) contains data from decisions for transboundary shipment of waste, which is subject to notification procedure and data from yearly reports on quantities and types of shipped waste, which are submitted to MEPGT/Institute by importers and exporters of waste, according to the Waste Management Act (OG No 84/21).

The Environment Protection and Energy Efficiency Fund (EPEEF) is responsible for organizing and monitoring systems for management of special waste categories, as well as remediation of official landfills. According to the ordinances, which stipulate the management of special waste categories, EPEEF collects detailed data on these waste categories. Data collected by EPEEF are used for cross-checking data reported to EPR.

5 General description of which methods are used in which part of the data set

Data set 1: Waste generation by waste category (EWC-STAT) and economic activities (NACE), tonnes/year

General description of methodology

Table 2: Description of methods for determining waste generation

Waste Item	Source																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1																			
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45																			

Waste Item	Source																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
46																			
47																			
48																			
49																			
50																			
51																			

	Data reported by waste producers/holders into the EPR database
	Data reported by waste collectors into the EPR database
	Combination of the data reported by waste producers/holders and waste collectors into the EPR database
	Combination of the data reported by waste producers/holders and waste treatment facilities into the EPR database
	Combination of the data reported by waste producers/holders, waste collectors and waste treatment facilities into the EPR database
	Data reported by waste treatment facilities into the EPR database + additionally collected data
	Combination of the data reported by waste producers/holders, waste collectors and waste treatment facilities into the EPR database + estimations
	Combination of the data reported by waste producers/holders, waste collectors and waste treatment facilities into the EPR database + data on transboundary movement of waste + estimations
	Data reported by waste producers/holders into the EPR database + estimations
	Estimations
	Combination of the data reported by waste producers/holders and waste treatment facilities into the EPR database + results obtained by statistical survey

Table 3: Description of classifications used

	Name of classification(s) used	Description of the classification(s) (in particular compatibility with WStatR requirements)
Economic activities	NACE Rev. 2.	Directly compatible with WStatR requirements
Waste types	List of Waste (LoW)	Converted into EWC – Stat / Version 4 classification with conversion key (Commission Regulation 574/2004/EC amending Annexes I and III to Regulation 2150/2002/EC)
Recovery and treatment operations	R&D codes	In line with Waste Framework Directive (2008/98/EC) and WStatR

Determination of waste generation by (sample) survey

N/A (Not Applicable).

Determination of waste generation in the economy on the basis of information on waste treatment

- Used oils (code 01.3), Chemical wastes (code 01.4, 02, 03.1) and Health care and biological wastes (code 05) – in NACE sections G – U excl. 46.77: the combination of data reported by waste producers/holders and waste treatment facilities were used. The difference in quantities reported by waste treatment facilities and waste producers/holders were taken into consideration. By checking the coverage of the companies that reported data into the EPR, it was determined that there are significant number of small enterprises, which do not exceed the annual threshold of 0,5 tonnes of hazardous waste, so they are not obliged to report data into the EPR. Therefore, the above-mentioned difference was added to those NACE sections G – U excl. 46.77.
- Metallic wastes - ferrous (code 06.1), non-ferrous (code 06.2), mixed ferrous and non-ferrous (code 06.3) – in NACE section F: the combination of data reported by waste producers/holders, waste treatment facilities, data on transboundary movement of waste and estimations were used. The amounts produced by construction and demolition activities, which were reported in any of the economic sections, were allocated to section F.
- Metallic wastes - mixed ferrous and non-ferrous (code 06.3) – in NACE sections G – U excl. 46.77 and NACE 46.77: the combination of data reported by waste producers/holders, waste collectors and waste treatment facilities into the EPR database. The difference in quantities reported by waste treatment facilities and waste producers/holders were taken into consideration.
- Glass wastes (code 07.1), Plastic wastes (code 07.4) and Wood wastes (code 07.5) – in NACE section F: the combination of data reported by waste producers/holders, waste treatment facilities, waste collectors, data on transboundary movement of waste and estimations were used. Amounts produced by construction and demolition activities, which were reported in any of the economic sections, were allocated to section F.
- Glass wastes (code 07.1), Paper and cardboard wastes (code 07.2), Plastic wastes (code 07.4), Textile waste (code 07.6) – in NACE sections G – U excl. 46.77: the combination of the data reported by waste producers/holders, waste treatment facilities and municipal waste collectors were used. The difference between those sources were added to services sector although part of the amount possible may originate from households. It was not possible to distinguish precise shares from commerce and households. Additionally, by checking the coverage of the companies that reported data into the EPR, it was determinate that there are significant number of small enterprises, which do not exceed the annual threshold of 0,5 tonnes of hazardous waste, so they are not obliged to report data into the EPR. Therefore, the above-mentioned difference was added to those NACE sections G – U excl. 46.77.
- Rubber wastes (code 07.3) – in NACE sections G – U excl. 46.77: the combination of data reported by waste producers/holders and waste treatment facilities were used. The difference in quantities reported by waste treatment facilities and waste producers/holders were taken into consideration. It was not possible to distinguish quantity of rubber wastes, which originate from class 46.77, households and services sector, so the sections G – U excl. 46.77 include amounts from mentioned NACE activities. By checking the coverage of the companies that reported data into the EPR, it was determined that there are significant number of small enterprises, which do not exceed the annual threshold of 0,5 tonnes of hazardous waste, so they are not obliged to report data into the EPR. Therefore, the above-mentioned difference was added to those NACE sections G – U excl. 46.77.
- Discarded vehicles (code 08.1) – in NACE section A and HH (households): Croatia has one treatment facility for discarded vehicles, which reports treated amounts into the EPR. Furthermore, this company provided to the MEPGT/Institute information on the share of discarded vehicles (HAZ

and NHAZ) originating from agricultural sector, mining and quarrying, manufacture, service activities and households. For the allocation of the quantities among NACE activities, data reported by waste producers/holders to the EPR database were used, while for HH the estimation was made on the base of the total amount of waste received in waste treatment facilities and amounts allocated among NACE activities.

- Batteries and accumulators wastes (code 08.41) – in NACE sections G – U excl. 46.77: the combination of the data reported by waste producers/holders, waste collectors and waste treatment facilities were used. The difference between those sources were added to services sector although part of the amount possible may originate from households. It was not possible to distinguish precise shares from commerce and households.
- Animal and mixed food waste (code 09.1) – in NACE section C10 – C12 and NACE sections G – U excl. 46.77: the combination of data reported by waste producers/holders, waste collectors, waste treatment facilities and additionally collected data were used. The difference in quantities reported by waste treatment facilities and waste producers/holders were taken into consideration.
- Vegetal wastes (code 09.2) – in NACE A and NACE sections G – U excl. 46.77: the combination of data reported by waste producers/holders and waste treatment facilities were used. The difference in quantities reported by waste treatment facilities and waste producers/holders were taken into consideration. By checking the coverage of the companies that reported data into the EPR, it was determined that some companies of smaller capacities, did not exceed the annual threshold of 20 tonnes of non-hazardous waste, and therefore are not obliged to report data into the EPR. Additionally, amounts of composted waste LoW 02 01 03 (*plant-tissue waste*) at the locations of little family farms, estimated on the base of the statistical survey were added in the NACE A.
- Animal faeces, urine and manure (code 09.3) – in NACE section A: the combination of data reported by biogas plants into the EPR database and data additionally collected from the biogas plants which didn't submit data into the EPR.
- Household and similar wastes (code 10.1) – in NACE sections G – U excl. 46.77: the combination of data reported by waste producers/holders, waste collectors, waste treatment facilities and estimations were used (see Chapter 5, Determination of waste generated by households).
- Mixed and undifferentiated materials (code 10.2) – in NACE A, C10-C12 and F: the combination of data reported by waste producers/holders, waste treatment facilities, data on transboundary movement of waste, estimations and additionally collected data were used. Amounts produced by construction and demolition activities, which were reported in any of the economic sections, were allocated to section F.
- Mineral waste from construction and demolition (code 12.1) and Soils (code 12.6) – in NACE section F: the combination of data reported by waste producers/holders, waste treatment facilities, data on transboundary movement of waste and estimations were used. For the purpose of improving the data quality concerning waste from NACE activities Mining and quarrying (B) and Construction (F), MEPGT/Institute implemented the project "*Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials*". For the period from 2015 to 2018, the methodology and results of the project were applied. For the period from 2019 to 2024, the methodology developed under the mentioned project was no longer suitable and was therefore modified accordingly. For the estimation of construction waste generated in 2024, data reported in the Waste Management Information System were used as a primary basis and subsequently supplemented with estimated quantities, taking into account the observed increase in construction waste generation.

- Other mineral waste (code 12.2, 12.3, 12.5) – in NACE B and NACE F: the combination of data reported by waste producers/holders, waste treatment facilities, data on transboundary movement of waste and estimations were used. For the purpose of improving the data quality concerning waste from NACE activities Mining and quarrying (B) and Construction (F), MEPGT/Institute implemented the project "*Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials*". For the period from 2015 to 2018, the methodology and results of the project were applied. For the period from 2019 to 2024, the methodology developed under the mentioned project was no longer suitable and was therefore modified accordingly.

Determination of waste generation in the economy on the basis of information on waste collection

- Metallic wastes - mixed ferrous and non-ferrous (code 06.3) – in NACE sections G – U excl. 46.77 and NACE 46.77: the combination of data reported by waste producers/holders, waste collectors and waste treatment facilities into the EPR database. The difference in quantities reported by waste treatment facilities and waste producers/holders were taken into consideration.
- Glass wastes (code 07.1), Plastic wastes (code 07.4) and Wood wastes (code 07.5) – in NACE section F: the combination of data reported by waste producers/holders, waste treatment facilities, waste collectors, data on transboundary movement of waste and estimations were used. Amounts produced by construction and demolition activities, which were reported in any of the economic sections, were allocated to section F.
- Glass wastes (code 07.1), Paper and cardboard wastes (code 07.2), Plastic wastes (code 07.4), Textile waste (code 07.6) – in NACE sections G – U excl. 46.77: the combination of the data reported by waste producers/holders, waste treatment facilities and municipal waste collectors were used. The difference between those sources were added to services sector although part of the amount possible may originate from households. It was not possible to distinguish precise shares from commerce and households. Additionally, by checking the coverage of the companies that reported data into the EPR, it was determinate that there are significant number of small enterprises, which do not exceed the annual threshold of 0,5 tonnes of hazardous waste, so they are not obliged to report data into the EPR. Therefore, the above-mentioned difference was added to those NACE sections G – U excl. 46.77.
- Batteries and accumulators wastes (code 08.41) – in NACE sections G – U excl. 46.77: the combination of the data reported by waste producers/holders, waste collectors and waste treatment facilities were used. The difference between those sources were added to services sector although part of the amount possible may originate from households. It was not possible to distinguish precise shares from commerce and households.
- Animal and mixed food waste (code 09.1) – in NACE sections G – U excl. 46.77: the combination of data reported by waste producers/holders, waste collectors, waste treatment facilities and additionally collected data were used.
- Household and similar wastes (code 10.1) – in NACE sections G – U excl. 46.77: the combination of data reported by waste producers/holders, waste collectors, waste treatment facilities and estimations were used (see Chapter 5, Determination of waste generated by households).

Determination of waste generation in the economy on the basis of administrative sources

Determination of waste generation in the economy was mostly done based on the data reported by waste producers/holders, waste collectors and waste treatment facilities into the EPR database. Provisions of the Waste Management Act (OG No 84/21) and Ordinance on Environmental Pollution Register (OG No 87/15 and OG 3/2022) stipulate reporting of the annual data for 2024.

Companies report EPR data via Internet by means of username and password that are assigned by the MEPGT/Institute. The deadline for reporting is 1st of March current year for the previous calendar year. From 1st of March until 15th of April, 20 county offices and the office of the City of Zagreb in cooperation with the competent inspection ensure the checking of data in terms of their completeness, consistency and credibility. The MEPGT/Institute coordinates activities relating to data quality assurance and control.

Waste generators producing more than 0,5 tonnes of hazardous waste and/or more than 20 tonnes of non-hazardous per a year are obliged to report annual data on registration form NO (Registration form for producer/holder of produced waste). Reporting forms require view of the chain of movement of waste, from the place of generation to the waste collector or place of final recovery/disposal.

Industrial waste collectors report data on registration form SO-2 (Registration form for waste collection). Except general data on waste collector, form SO-2 require for each type of waste data on collected amounts of waste and data on locations to which collected waste is forwarded.

Municipal waste collectors report data on the registration form SO-1 (Registration form for municipal waste collectors), while civic amenity sites and waste dealers on the registration form SO-3 (Registration form for amenity sites/mobile amenity sites and waste dealers). Registration forms require view of the chain of movement of waste, from the place of generation (collection) to another waste collector or place of final recovery/disposal. For each type of waste, municipal waste collector has to report town/municipality from which waste originates, amount collected from households, from amenity sites etc., location to which collected waste is forwarded. In case of mixed municipal waste, the number of inhabitants covered by collector's service has to be specified.

Waste treatment facilities (including landfills) report data on registration form OZO (Registration form for waste recovery/disposal). Form OZO contains general data about the operator, data about amounts for each waste type taken in the reporting year (from the territory of Croatia and imported from another countries separately), data about temporary storage, waste handling (amounts of waste regarding disposal and recovery procedures), etc.

As some bio-plants and incineration plants for animal by-products in 2024 still didn't obtain waste management permit according to the Waste Management Act (OG No 84/21) and therefore didn't report data into the database EPR, part of amounts of animal by-products not intended for human consumption were determined on the basis of the additionally collected data.

Determination of waste generation in the economy on the basis of other methods

N/A (Not applicable).

Determination of extractive waste generation (new section)

Table 4: Coverage of waste statistics with regard to extractive waste¹⁾

Coverage	Topsoil	Overburden	Waste-rock	Tailings (non-haz.)
Completely covered	x	x	x	
Partially covered				
Generally excluded				x

1) Please mark with an X whether the listed materials are completely covered, partially covered or generally excluded from waste statistics.

Tailings are not covered because in Croatia there is no ore excavation. Topsoil, overburden and waste-rock are in principle covered in statistics, if declared as waste. In Croatia, non-metallic mineral raw materials for the production of building material (technical-construction stone, sand and gravel) and architectural-construction stone are mostly exploited. This creates an excess of excavated material that is inert, for which there is potential to be reused, and concessionaires do not consider it as waste. However, for the purpose of improving the data quality concerning waste from NACE activities Mining and quarrying (B), MEPGT/Institute implemented the project "*Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials*". Project estimated quantities of material which should be considered as waste (in cases when the material is stored at quarry location more than 3 years and its use for final sanitation/closure of quarry is not specified in waste management plan of a quarry), relevant for category Other mineral wastes, which has been included in this report. For the period from 2015 to 2018, the methodology and results of the project were applied. For the period from 2019 to 2024, the methodology developed under the mentioned project was no longer suitable and was therefore modified accordingly. For the estimation of construction waste generated in 2024, data reported in the Waste Management Information System were used as a primary basis and subsequently supplemented with estimated quantities, taking into account the observed increase in construction waste generation.

Determination of waste generated by households

Determination of discarded vehicles amounts originating from households was based on the data reported by waste treatment companies (see Table 5).

For other waste types generated by households, amounts are based on the reports provided by municipal waste collection companies, civic amenity sites and waste dealers.

Household and similar wastes (code 10.1) – mixed municipal waste: data on generated amounts of mixed municipal waste by NACE activities were estimated. According to the information given by municipal waste collectors, about 82 % of produced mixed municipal waste (LoW 20 03 01) originates from households while the rest (18 %) is produced by economic activities. This 18 % of totally produced amount of mixed municipal waste was divided with the number of employees in economic activities that resulted in an average ratio of generation of mixed municipal waste per employee and per year. This average was multiplied with number of employees in each NACE activity.

Estimated amounts of produced mixed municipal waste per economic activities are questionable quality mainly because of unregistered number of employees, especially in touristic season in services providing accommodation, food preparation and serving which make a significant share in economy.

Data on municipal waste include amounts of municipal waste generated by tourists.

Table 5: Determination methods for waste generated by households

1	Indirect determination via waste collection	
1.1	Description of reporting unit applied (waste collectors, municipalities)	Waste collectors, civic amenity sites, waste dealers.
1.2	Description of the reporting system (regular survey on waste collectors, utilisation of administrative sources)	Household waste (code 10.1) - annual reports into the EPR + additional estimations for population not covered by organised collection of municipal waste. Other waste - annual reports into the EPR.
1.3	Waste types covered	Spent solvents (code 01.1); Acid, alkaline or saline wastes (code 01.2); Used oils (code 01.3); Chemical waste (code 01.4; 02; 03.1); Health care and biological wastes (code 05); Metallic wastes; ferrous (code 06.1) and non-ferrous (06.2); Metallic wastes; mixed ferrous and non-ferrous (code 06.3); Glass wastes (code 07.1); Paper and cardboard wastes (code 07.2); Rubber waste (07.3); Plastic wastes (code 07.4); Wood wastes (07.5); Textile wastes (code 07.6); Discarded equipment (excl. discarded vehicles; batteries/accumulators) (code 08 excl. 08.1; 08.41); Batteries and accumulators wastes (code 08.41); Animal and mixed food waste (code 09.1); Vegetal wastes (code 09.2); Household waste (code 10.1); Mixed and undifferentiated materials (code 10.2); Other mineral wastes (code 12.2, 12.3., 12.5)
1.4	Survey characteristics (1.4a – 1.4d)	N/A (Not Applicable)
	a) Total no. of collectors /municipalities (population size)	-
	b) No. of collectors/municipalities selected for survey	-
	c) No. of responses used for the calculation of the totals	-
	d) Factor for weighting	-
1.5	Method applied for the differentiation between the sources household and commercial activities	From 2017 new EPR reporting forms have been introduced (see Chapter 5, Determination of waste generation in the economy on the basis of administrative sources). New reporting forms require more detailed information on waste origin, hence data on produced waste by households are more accurate than previous years.
1.6	Percentages of waste from commercial activities by waste types	-
1.7	Population served by a collection scheme for mixed household and similar waste, in %	99,9%
2	Indirect determination via waste treatment	
2.1	Specification of waste treatment facilities selected	Facilities for mechanical treatment of discarded vehicles.
2.2	Waste types covered	Discarded vehicles
2.3	Method applied for the differentiation between the sources household and commercial activities	Croatia has one treatment facility for discarded vehicles, which reported treated amounts into the EPR. Furthermore, this company provided

		to the MEPGT/Institute information on the share of discarded vehicles (HAZ and NHAZ) originating from agricultural sector NACE A (0.5 %) and NACE B (0%). For the allocation among other NACE activities data reported by waste generators to EPR were used, while for HH the estimation was made on the base of the total amount of waste received in waste treatment facilities and amounts allocated among NACE activities.
2.4	Percentages of waste from commercial activities by waste types	Discarded vehicles NHAZ – 25,97% Discarded vehicles HAZ – 3,35%

Estimation of non-covered amount of municipal waste:

$$\frac{\text{Amount of municipal waste collected (reported into the EPR)}}{\text{Covered population (reported by registration forms)}} * \text{Number of non – covered population}$$

Data sets 2 and 3: Waste treatment

General description of methodology, Data collection on capacity of treatment facilities, Data collection on treated amounts of waste

Data collection on capacity of treatment facilities – Relevant waste treatment facilities are identified through RWMA database, run by MEPGT/Institute. This database contains information and documents on waste management permits. Competent authority for issuing waste management permits for hazardous waste management and permits for thermal treatment of non-hazardous waste is MEPGT/Directorate. Competent authorities that issues permits for all other types of waste and registers for carrying out waste management operations are 20 county offices and the office of the City of Zagreb. MEPGT/Institute upon the issuing a permit receives a copy and on the daily bases data are entered into the RWMA database. Waste management permits provide various data, like data on recovery/disposal operations, annual capacities of treatment facilities, etc.

According to Regulation (EC) No 1069/2009 and Regulation (EC) No 142/2011 Ministry of Agriculture, Directorate for Veterinary and Food Safety maintains registers for carrying out anaerobic digestion and incineration of animal by-products. By Waste Management Act (OG NO 84/21), those treatment plants are also obliged to obtain waste management permit. Considering that not all of them have yet obtained the necessary waste management permit, for detecting the precise number of facilities MEPGT/Institute still uses register of the Ministry of Agriculture.

Data on rest capacity of landfills were determinate based on the data reported by landfill operators into the database Central Management System for the Data on Landfills of Waste.

Data on treated amounts of waste mostly were reported by waste treatment facilities into the EPR database according to the procedure described above in section “Determination of waste generation in the economy on the basis of administrative sources”. Only part of the data on animal by-products treated in biogas plants and incinerators were collected additionally from the waste treatment facilities. In Croatia there is only one rendering plant of open type. It is the largest animal by-products processor and the majority of the animal by-products generated in Croatia are treated in this company. One of the results of that treatment process is technical fat. In 2024, there wasn't any incineration of technical fat.

6 Major Changes

Changes compared with previous years

By the agreement from May 2012 between MEPGT/Institute (ex Croatian Agency for Environment and Nature) and Croatian Bureau of Statistics (CBS), MEPGT/Institute took over the obligation of preparation and submitting data according to WStatR to Eurostat. For the reference year 2010 and previous years, data were submitted to Eurostat by the CBS. Comparison of the data from those two sources is not possible because of different methodologies of data collection and processing. The CBS collected data by biannual statistical surveys while MEPGT/Institute uses administrative source of data.

Regarding reporting data on waste generation into the EPR database, since 2016 new thresholds are in force ($\geq 0,5$ t hazardous and/or ≥ 20 t non-hazardous waste). Up to 2016 thresholds for reporting data on waste generation were $\geq 0,05$ t hazardous and/or ≥ 2 t non-hazardous waste. Reported data on produced waste showed that increasing thresholds in mentioned range did not significantly influence reported amounts but reduced administrative burden in economic sector.

From the 2024 reporting year, new forms for reporting data on treated waste have been implemented, requiring waste treatment operators to provide information on the actually recycled quantities, excluding impurities and non-target materials that are removed before or during the recycling process. Until then, operators reported the quantities received for treatment. Therefore, in 2024 significantly lower quantities of recycled waste were recorded compared to 2022, while the quantities received for treatment did not differ significantly. Non-target materials were forwarded off-site from the recycler for treatment as secondary waste (LoW group 19), mainly for export.

From 2017 new EPR reporting forms require more detailed data on waste origin, hence data on produced waste by households are more accurate than previous years.

For the purpose of improving the data quality concerning waste from NACE activities Mining and quarrying (B) and Construction (F), the MEPGT/Institute implemented the project "*Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials*". Within this project, estimates of waste quantities produced by mentioned NACE activities were made and those estimations were reported in reports for 2016, 2018, 2020 and 2022 according to WStatR.

Necessary revisions of text and questionnaires for data collection were adopted in Ordinance on Environmental Pollution Register (OG No 3/2022). New, shortened deadlines for data delivery and data validation are already in effect from 2022 reporting year.

Detailed information on changes in amounts of generated waste, amounts of treated waste, over time are presented in the chapter 8 Validation.

Foreseen changes

The plan is to start activities to improve data for sections Mining and quarrying (B) and Construction (F). Like in project done 2016, it is in plan to implement a survey, covering companies producing waste relevant for this section.

7 Specific issues - wet matter for sludges

Although the data on sludges are requested only in dry matter since the 2008 data collection, in the table below the amounts of waste generated for the NACE Total are indicated **in tonnes of wet matter**. This will be important to review the conversion factors that have been used to impute missing data in the past.

03.2	Industrial effluent sludges NHAZ	R	W	14.277,93
03.2	Industrial effluent sludges HAZ	☠	W	6.731,69
03.3	Sludges & liquid waste from waste treatment NHAZ	R	W	41.624,33
03.3	Sludges & liquid waste from waste treatment HAZ	☠	W	3.457,53
11	Common sludges NHAZ	R	W	96.327,43
12.7	Dredging spoils NHAZ	R	W	2,12
12.7	Dredging spoils HAZ	☠	W	0

Used conversion factors:

- 03.2 - industrial effluent sludges, HAZ and NHAZ – 0,27
- 03.3 - sludges & liquid waste from waste treatment, NHAZ – 0,25
- 03.3 - sludges & liquid waste from waste treatment, HAZ – 0,32
- 11 - common sludges, NHAZ – 0,3196 (for sludges from treatment of urban wastewater – EWC 19 08 05) and 0,27 (for industrial effluent sludges)
- 12.7 - dredging spoils, HAZ and NHAZ – 0,37

For EWCs: 03.2, 03.3 and 12.7 used conversion factors are those listed in the Manual for the Implementation of Regulation (EC) No 2150/2002 on Waste Statistics, 2024 edition.

For common sludges used conversion factor was obtained from the biggest waste water treatment plants.

8 Validation

The data have been verified and confirmed as accurate. The data have been validated by the obligated reporting entities, and explanations have been provided for significant deviations compared to the previous reporting year (2022). Overall, the amount of generated waste in Croatia exceeds the amount of waste treated in the country. This is consistent with the actual situation in the country, as substantial amounts of waste undergo pre-treatment operations in Croatia and/or are subsequently exported for final treatment out of the country.

From the 2024 reporting year, new forms for reporting data on treated waste have been implemented, requiring waste treatment operators to provide information on the actually recycled quantities, excluding impurities and non-target materials that are removed before or during the recycling process. Until then, operators reported the quantities received for treatment. Therefore, in 2024 significantly lower quantities of recycled waste were recorded compared to 2022, while the quantities received for treatment did not differ significantly. Non-target materials were forwarded off-site from the recycler for treatment as secondary waste (LoW group 19 (*wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use*)), mainly for export.

1. Comparison over time (2024 – 2022)

a) (total/hazardous) waste generation by NACE

The performed validation rule did not identify any inconsistencies.

b) hazardous share by NACE

NACE A – The performed validation rule indicated that the quantity of hazardous waste increased in 2024 compared to 2022. It is about End-Of-Life Vehicles.

c) treatment by operation [WST_OPER]

Backfilling – The increase in quantities was recorded in 2024, primarily for soils (EWC category 12.6), as well as mineral waste from construction and demolition (EWC categories 12.1). The upward trend in backfilling continued as a result of expanded treatment capacity, including the procurement of new crushers and increased R5 treatment operation over recent years. Additionally, in 2024, a single company recovered significantly larger quantities through backfilling as part of an infrastructure development project within an economic zone.

Other disposal – The decrease in quantities was recorded in 2024, primarily concerning mixed and undifferentiated materials (EWC category 10.2) and the D4 treatment operation. This decline is attributable to the revision and subsequent expansion of the waste management permit, which resulted in no waste being landfilled at the non-hazardous waste disposal site during that year.

d) generation and treatment by waste category

d.1) **generation by waste category**

Wood wastes HAZ – The increase in generated wood waste in 2024 is primarily the result of enhanced separate collection in households, as well as higher quantities arising from NACE 31.09 (*Manufacture of other furniture*), driven by increased production volumes.

Waste containing PCB HAZ – Data are checked and they are correct. It is about LoW 16 02 09*.

Batteries and accumulators wastes HAZ – The decrease in the amount of generated and processed waste in 2024 compared to previous years is due to a different calculation method used for the reported quantities, i.e. due to better control of the data entered into the MPEG/Institute Waste Management Information System.

Combustion wastes NHAZ – The amount of waste generated in 2024 is significantly lower compared to 2022. This decrease is primarily due to one company experiencing an exceptionally high volume of business during the previous reporting year. It is about LoW 10 02 02 (*unprocessed slag*). Additionally, there is a substantial difference in LoW 10 01 02 (*coal fly ash*) and 10 01 05 (*calcium-based reaction wastes from flue-gas desulphurisation in solid form*), as the power plant was non-operational for six months in 2024, resulting in a significantly reduced operational volume.

Soils HAZ – The increase observed in 2024 in sector F is attributable to oil spills occurring during transportation and distribution due to a registered oil pipeline rupture.

Dredging spoils HAZ and NHAZ – The reported figures decreased in 2024, which is explained by year-to-year fluctuations in the volume of construction activities.

Mineral waste from waste treatment and stabilised wastes HAZ – The observed increase in 2024 is attributable to higher business activity, which consequently led to an increase in the reported quantities of generated waste. The recorded growth is associated with a higher level of waste treatment using crushing equipment, primarily for construction and demolition waste, as well as certain waste types from LoW chapter 10 (*wastes from thermal processes*), alongside the stabilization of specific waste streams such as sludges and contaminated soil. This trend is attributable to the expansion in the number of crushers over recent years, which has resulted in increased treatment capacity and processing volumes.

d.2) **treatment by waste category**

Acid, alkaline or saline wastes HAZ and NHAZ – The decrease in R2 treatment operation in the petrochemical industry in 2024 is associated with fluctuations in operational activities. It was reported that treatment capacities and annual quantities of generated and processed waste may vary from year-to-year due to changes in the organization's operational and maintenance processes. In 2022, a low absolute quantity of waste was disposed by D1 operation, whereas no waste disposal operations was recorded in 2024.

Industrial effluent sludges HAZ – The reduction in disposed quantities is the result of the reclassification of sludge from LoW 19 08 12 (*sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11*) to LoW 03 03 11 (*sludges from on-site effluent treatment other than those mentioned in 03 03 10*) in the paper industry and its redirection to anaerobic digestion processes in 2024. The reduction in R1 and R3 treatment operations is due to a decrease in waste imports.

Textile wastes NHAZ – The decrease was observed across all waste management operations in 2024, with the most pronounced reduction recorded in recycling activities. In the case of energy recovery, one company did not process waste classified under LoW 19 12 08 (*textiles*) in 2024, contributing to the overall

decrease. Recycling volumes were lower across all operators, including the largest recycler. This trend can be attributed to year-to-year fluctuations in processed quantities, largely influenced by market conditions. Furthermore, a portion of production activities was relocated to another site in 2024, which additionally affected the reported figures. It is also noteworthy that the largest recycler predominantly processed imported waste rather than domestically generated material. Regarding disposal, a reduced quantity of waste was landfilled compared to previous years, indicating a general decline in disposal activities.

Combustion wastes HAZ – The decrease in R5 treatment operation is due to lower production levels compared to 2022. The facility operated on a temporary basis for several months, resulting in reduced quantities of generated waste.

Soils HAZ – In 2024, no energy recovery activities were recorded, consistent with all previous years except for 2022. Variations in the quantities and types of recovered waste can primarily be associated with market disturbances, which influenced both the availability and utilization of waste streams. These fluctuations also affected the consumption of conventional fuels and, consequently, the associated emissions of pollutants. Furthermore, market conditions impacted the extent to which waste was used as an energy source.

Dredging spoils NHAZ – The conversion factor changed according to *Manual for the Implementation of Regulation (EC) No 2150/2002 on Waste Statistics, 2024 edition* and now stands at 0,37. The reported figures decreased compared to 2022, which is explained by year-to-year fluctuations in the volume of construction activities. The waste was treated using the R5 treatment operation.

e) **relation treatment / generation by waste category**

There is more waste generated than treated. That is in line with actual state in the Croatia. The significant amounts are pre-treated and exported.

Acid, alkaline or saline wastes HAZ and NHAZ – See explanation in 1.d2).

Industrial effluent sludges HAZ – See explanation in 1.d2).

Textile wastes NHAZ – See explanation in 1.d2).

Combustion wastes HAZ – See explanations 1.d1) and 1.d2).

Soils HAZ – See explanations 1.d1) and 1.d2).

f) **generation and treatment (largest differences for inner cells)**

f.1) **generation (largest differences for inner cells)**

Metallic wastes, ferrous NHAZ – NACE C24_25 and NACE F – The lower amount was recorded in 2024, reflecting a decrease in industrial activity. This trend can be explained by the reduced production capacity in the large steel production plant (NACE 24–25), as well as a decrease in the operational throughput in the main metal scrap processing facility (NACE 38). Consequently, a decrease in the generation of secondary waste streams was observed, in particular LoW 19 10 01 (*iron and steel waste*) and LoW 19 12 02 (*ferrous metal*). Furthermore, a downward trend was observed for LoW 17 04 05 (*iron and steel*), which was a result of reduced activity within companies operating in Section F of the NACE classification.

Glass wastes NHAZ – NACE G_U excl. 46.77 – The decrease in quantities was recorded in the service sector. For the service sector, an estimation is prepared based on the total municipal glass waste, glass waste from households, and glass waste reported through other NACE sectors. Given the increase in

quantities reported by households and in NACE sectors C10_12, C23 and F, the estimated quantity for the service sector is lower than in previous years.

Paper and cardboard wastes NHAZ – NACE C17_18, E38, 46.77 and HH – The reclassification of waste from LoW 20 01 01 (*paper and cardboard*) to LoW 03 03 08 (*wastes from sorting of paper and cardboard destined for recycling*) was carried out at the site of one facility. Therefore, a certain quantity is reported under EWC 10.2 (*mixed and undifferentiated materials*). The remaining negligible decrease is due to reduced production volume. The increased amount of generated waste is the result of higher quantities of secondary waste at sorting facilities (NACE 38), which have been operating at significantly higher capacity since 2023. Also, the observed decrease in the wholesale trade sector for residues and waste attributed to a reduced volume of business activities, largely influenced by fluctuating market conditions. The increase was observed in separate collection of municipal waste.

Plastic wastes NHAZ – NACE E38 and HH – The increase in generated quantities compared to 2022 is primarily the result of a new waste sorting structure, which led to higher amounts of secondary waste, as well as increased separate collection in households and increased imports of waste tyres for recycling, which also resulted in increase of secondary waste.

Wood wastes NHAZ – NACE C16 – The decrease in managed waste quantities can be attributed to a reduced scope of operational activities, primarily reflecting lower demand and a consequent decline in workload. This resulted in decreased input volumes and overall throughput during the reporting period.

Batteries and accumulators wastes HAZ – NACE G_U excl. 46.77 – The decrease in the quantity of batteries recorded within the service sector in 2024 can be attributed to a reduction in the number of service providers in operation. With fewer servicing activities carried out, there were correspondingly fewer battery replacements and maintenance processes, and consequently, a reduced generation of waste batteries during the reporting period in this sector. Also, see explanation in 1.d1).

Animal and mixed food waste NHAZ – HH – The significant increase was observed in separate collection of waste LoW 20 01 08 (*biodegradable kitchen and canteen waste*) from households.

Vegetal wastes NHAZ – NACE C10_12 and HH – In NACE 10–12, an increased volume of production was recorded at an oil production plant. The increased separate collection of municipal vegetal waste was observed.

Animal faeces, urine and manure NHAZ – NACE A – In 2024, a decrease in waste generation was observed. By the end of 2024, the number of operational biogas plants and the volume of biogas utilized for the production of electricity and heat had declined by approximately one quarter compared to 2021. This reduction is attributable to a significant increase in the operational costs of biogas facilities since 2021, while contracted electricity prices and existing support schemes have proven insufficient to cover the costs of feedstock and plant operation.

Household and similar wastes NHAZ – NACE E38 and HH – The increase in 2024 is attributable to the fact that, following the bulky waste sorting procedure, bulky waste was again reported as secondary waste due to negligible changes in its characteristics. In the case of a complete separation of fractions, these fractions would be reported under other EWC categories. Consequently, this approach results in partial double reporting of some amount under this EWC category and the corresponding NACE activity. The increase was observed in separate collection of municipal waste.

Mixed and undifferentiated materials NHAZ – NACE C10_12, C17_18, E38:

- **C10_12:** The recorded significant increase is due to the rise in the amount of molasses generated in the sugar industry, which was forwarded for treatment in biogas plants.

- **C17_18:** The reclassification of waste from LoW 20 01 01 (*paper and cardboard*) to LoW 03 03 08 (*wastes from sorting of paper and cardboard destined for recycling*) was carried out at the site of one facility. Therefore, a certain quantity is reported under EWC 10.2 (*mixed and undifferentiated materials*).
- **E38:** The increase in the quantity of treated waste was recorded for one company, primarily due to the new contracts with producers of this specific waste stream. Additionally, one facility operated at full capacity in 2024, unlike the previous year when it was only partially in trial operation. As a result, larger quantities were generated and subsequently managed. Furthermore, one company did not report this type of waste in 2022; however, following the alignment of records with the actual operational situation, disposal activities commenced for waste classified under LoW 15 01 05 (*composite packaging*).

Sorting residues NHAZ – NACE E38 – The increase in managed waste quantities in 2024 can be attributed to expanded operational activities, including a higher workload and increased input capacities. Improvements in process efficiency, along with possible infrastructure upgrades, have enabled the handling of larger volumes of waste. Consequently, a higher overall throughput was achieved during the reporting period.

Common sludges NHAZ – NACE E36_37_39 – Reported data for 2022 should be corrected. The quantities in the temporary storage from previous years were incorrectly calculated. A comparison of the corrected data for 2022 and data for 2024 indicates an increase in the quantities generated in 2024 by around 4.000 tonnes of dry matter. This is the result of an increase in the number of wastewater treatment plants, which is in line with the implementation plan of the Municipal Wastewater Treatment Directive. Furthermore, in NACE 17–18, an increase in sludge quantities is recorded due to the reclassification of sludge from LoW 19 12 08 (*textiles*) to LoW 03 03 11 (*sludges from on-site effluent treatment other than those mentioned in 03 03 10*) in the paper industry. As a result, a decrease is observed in EWC-Stat 03.2.

Mineral waste from construction and demolition NHAZ – NACE F – The significant increase in quantities compared to 2022 can be explained by the continuous increase in recorded (mineral) construction waste, which is further associated with the securing of new treatment capacities. The largest increase was observed in mixed construction waste streams, that are LoW 17 09 04 (*mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03*) and 17 01 07 (*mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06*), as well as in certain separately collected fractions that were increasingly recycled in 2024, such as concrete and reclaimed asphalt.

Other mineral wastes NHAZ – NACE B, C23 – The increase compared to 2022 is mainly due to increased estimated quantity of mining waste (exploitation of oil/gas and stone) and increase of generated waste in LoW chapter 10 (*wastes from thermal processes*) because of increased production in several concrete plants.

Combustion wastes NHAZ – NACE D and G_U excl. 46.77 – See explanation in 1.d1).

Soils NHAZ – NACE F – The amount continues to increase in 2024, because of better recording of generated construction waste, which is a consequence of ensuring capacity for treatment, i.e. acquisition of new crushers over the last few years.

Mineral waste from waste treatment and stabilised wastes NHAZ – NACE E38 and G_U excl. 46.77 – See explanation in 1.d1). Some companies (from NACE 38) significantly increased the amount of waste generated, and smaller number of companies from other sectors (but which treated waste by crusher) reduced their activity and reported slightly smaller amounts in 2024 (service sector and C24_25).

f.2) treatment (largest differences for inner cells)

Metallic wastes, ferrous NHAZ – The decrease in R3 treatment operation was observed due to a reduction in recovery activities at a major steel production facility, accompanied by a decline in operational throughput

at the primary metal scrap processing facility. This trend predominantly relates to LoW 19 10 01 (*iron and steel waste*), with a smaller contribution from LoW 17 04 05 (*iron and steel*). Additionally, a decrease in imports was recorded in 2024.

Metallic wastes, mixed ferrous and non-ferrous NHAZ – The increase in 2024 can be attributed to fluctuations in operational volume, as well as to an increase in the incoming amount of this waste. The change primarily relates to LoW 20 01 40 (*metals*), with additional impacts observed in LoW 15 01 04 (*metallic packaging*).

Glass wastes NHAZ – From the 2024 reporting year, new forms for reporting data on treated waste have been implemented, requiring waste treatment operators to provide information on the actually recycled quantities, excluding impurities and non-target materials that are removed before or during the recycling process. Until then, operators reported the quantities received for treatment. Therefore, in 2024 significantly lower quantities of recycled waste were recorded compared to 2022, while the quantities received for treatment did not differ significantly. Non-target materials were forwarded off-site from the recycler for treatment as secondary waste (LoW group 19 (*wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use*)), mainly for export.

Paper and cardboard wastes NHAZ – The increase in recorded quantities in 2024 is attributable to higher imports of waste paper for recycling in the Croatia, as well as to the increase of separate collection of municipal waste paper.

Rubber wastes NHAZ – The recycling line was expanded last year, enabling increased recovery of waste tyres. Also, imports increased compared to 2022.

Plastic wastes NHAZ – The increase in the quantities of waste treated by the R1 treatment operation is the result of increased amounts of generated secondary plastic waste in the territory of the Croatia, which was sent for incineration in a cement clin.

Wood wastes NHAZ – The increase in the quantities of recycled waste is due to an increase in imports of waste LoW 19 12 07 (*wood other than that mentioned in 19 12 06*). The increase in the quantities of landfilled waste was recorded for LoW 17 02 01 (*wood (from construction activities)*). One company exceptionally in 2022 processed wood waste using the R1 treatment operation. In 2024 was not data reporting obligee. In addition, one production shift was eliminated, resulting in a reduced workload.

Discarded equipment (excl. discarded vehicles, batteries/accumulators) HAZ – The increase was recorded at the largest treatment facility of this waste stream due to fluctuations in the volume of work.

Animal and mixed food waste NHAZ – Compared to 2022, a significant increase in anaerobic digestion was recorded in 2024.

Vegetal wastes NHAZ – In 2024, a significant increase in the separate collection of municipal biowaste was recorded, which led to higher quantities of treated vegetal waste. Several new composting facilities were established, resulting in an increase in recycled waste. However, as the existing infrastructure for biowaste recycling is still insufficient, certain quantities continue to be disposed of. Therefore, an increase in the quantities of landfilled vegetal waste was also recorded. The increased quantity of recycled vegetal waste is also a result of higher amounts of generated waste LoW 02 03 04 (*materials unsuitable for consumption or processing*), which were received for treatment by biogas plants.

Animal faeces, urine and manure NHAZ – See explanation in 1.f1).

Household and similar wastes NHAZ – The decrease compared to 2022 is the result of the establishment of infrastructure for the treatment of mixed municipal waste, which led to lower quantities of landfilled mixed municipal waste (LoW 20 03 01 (*mixed municipal waste*)).

Mixed and undifferentiated materials NHAZ – In 2024, the increase of landfilling was recorded for LoW 19 05 99 (*wastes not otherwise specified*), 19 02 99 (*wastes not otherwise specified*) and 15 01 06 (*mixed packaging*). The increase is attributed to one facility operating at full capacity, whereas in the previous year it had only been running in a trial phase. Additionally, another facility experienced an increase in workload volume, which further contributed to the overall growth.

Sorting residues HAZ – In 2024, the increase was recorded for R4 treatment operation of LoW 19 12 11* (*other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11*). It is about one facility that reported an increase in workload volume, resulting in higher overall operational activity.

Sorting residues NHAZ – The increase recorded in 2024 is about higher input capacities which led to a greater quantities of waste treated. Waste disposal activities also increased due to the establishment of new sorting facilities and other waste pre-treatment installations.

Common sludges NHAZ – Reported data for 2022 should be corrected. There is no difference between 2022 and 2024. See the explanation under f.1).

Mineral waste from construction and demolition NHAZ – The large increase in treated quantities compared to 2022 can be explained by the increase in waste treatment capacity in parts of Croatia that did not have sufficient capacity, and the procurement of new crushers from 2020 onwards, which caused increase of recycled aggregate and recycled asphalt produced year after year. The largest growth was in recycling, by R5 treatment operation, much smaller increase in backfilling and even smaller increase in landfilling.

Other mineral wastes NHAZ – The difference compared to 2022 can be mainly explained by the increase in the amount of waste concrete and concrete sludge (LoW group 10 (*wastes from thermal processes*)) that was created during the production of concrete in concrete plants which reported increase production activities. The decrease in landfilling was recorded mostly for LoW 10 09 08 (*casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07*), 10 10 08 (*casting cores and moulds which have undergone pouring other than those mentioned in 10 10 07*) (two foundries diverted waste from landfill to recycling R5), 19 08 02 (*waste from desanding*) and 20 02 03 (*other non-biodegradable wastes*).

Combustion wastes NHAZ – The decrease of R5 treatment operation due to lower production compared to 2022. The factory operated temporarily for several months and produced smaller quantities of waste.

Soils NHAZ – There is an increase compared to 2022. As in previous years (the exception is 2022), there was no energy recovery. The increase in recycling and backfilling continues, because of the provision of treatment capacity - procurement of new crushers and more R5 treatment operation over the last few years. Also, in 2024, one company recycled larger quantities that had been stored, and another company recovered larger quantities through the backfilling, as part of the infrastructure development project in the economic zone. Disposal was reduced compared to 2022, in which several capital projects were implemented in one county and waste was landfilled at the local landfill.

Mineral waste from waste treatment and stabilized wastes NHAZ – In relation to 2022, the increase in recycling is explained by a greater increase in solidified/stabilized waste (LoW 19 03 07 (*solidified wastes other than those mentioned in 19 03 06*) and 19 03 05 (*stabilised wastes other than those mentioned in 19 03 04*)) and waste treated by crusher which was construction waste in origin. Compared to 2024, in 2022 there was more backfilling as one company used the waste for landscaping on site. The disposal of LoW 19 12 09 (*minerals (for example sand, stones)*) from mechanical treatment of street cleaning residues has been reduced in 2024.

Please see previous validation results.

2. Relation generation / treatment (totals)

The applied validation rule indicated that the amount of generated hazardous and non-hazardous waste in Croatia exceeds the amount of waste treated in the country.

This is consistent with the actual situation in the country, as substantial amounts of waste undergo pre-treatment operations in Croatia and/or are subsequently exported for final treatment out of the country. In addition, Croatia exports hazardous waste.

For the purpose of improving the data quality, the MEPGT/Institute implemented the project "*Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials*". For the period from 2015 to 2018, the methodology and results of the project were applied. For the period from 2019 to 2024, the methodology developed under the mentioned project was no longer suitable and was therefore modified accordingly. For the estimation of construction waste generated in 2024, data reported in the Waste Management Information System were used as a primary basis and subsequently supplemented with estimated quantities, taking into account the observed increase in construction waste generation. Within this project, data on generated waste were estimated and projected for some future period. Those estimation/projection is included in set 1 WStatR while data on final treatment destination of estimated/projected amounts are not known.

3. Implausible combinations treatment operation / waste categories

The performed validation rule did not identify any implausible combinations of treatment operations by waste categories.

4. Treated amounts vs. treatment capacities (incineration)

Performed validation rule showed that in 2024 treated amounts were below available capacities for energy recovery (R1).

Additionally, data on special waste categories (packaging waste, waste tyres, waste oils, waste batteries and accumulators, end-of-life vehicles, waste electric and electronic equipment, waste containing asbestos) were cross-checked with data collected by EPEEF according to ordinances on special waste categories above mentioned.

Part II: Report on quality attributes

1 Relevance

The main users of the data contained in the report according to WStatR are:

- Croatian Bureau of Statistics, Ministry of Environmental Protection and Green Transition, Environment Protection and Energy Efficiency Fund, County offices, The State Inspectorate and other authority bodies;
- Private persons, companies, research institutes, etc.

Description of missing data in data set 1 on waste generation

For the purpose of data quality improvement, the plan is to start activities to improve data for sections Mining and quarrying (B) and Construction (F). Like in project done 2016, it is in plan to implement a survey, covering companies producing waste relevant for this section.

Description of missing data in data sets 2 and 3 on treated waste quantities and capacities:

Data are complete.

2. Accuracy

N/A (Not Applicable).

3. Timeliness and punctuality

Datasets 1 and 2:

As it is mentioned in the previous chapters, data used for the compilation of Dataset 1 and Dataset 2 of WStatR 2024 are mostly based on the data reported by waste producers/holders, waste collectors and waste treatment facilities into the EPR database.

Companies report data via Internet by means of user name and password that are assigned by the MEPGT/Institute. The new, shortened deadline for reporting data 2024 was 1st of March 2025. Until 15th of April 2025, 20 county offices and the office of the City of Zagreb ensured checking of data quality in terms of their completeness, consistency and credibility by verification.

After the data verification made by counties was finished, the MEPGT/Institute provided final check of the verified data.

In January 2026, data reported into the EPR database were converted by special application to the format requested by WStatR. When data conversion was done, MEPGT/Institute started with data preparation for the WStatR.

After the compilation of datasets 1 and 2 was done (at the end of April 2026), before delivery to the Eurostat, MEPGT/Institute preformed validation rules according Eurostat recommendation. Results of the preformed validation rules are presented in the chapter 8 (Validation).

Dataset 3:

Data on number of waste treatment facilities and capacity for energy recovery (R1), waste incineration (D10) and recovery (R2-R11) were extracted from the RWMA database. Validation of the data contained in the mentioned database is carried out continuously during entering data from permits into the database RWMA.

Considering that not all of the waste biogas and incineration plants for animal by-products have yet obtained the necessary waste management permit, for detecting the precise number of those facilities MEPGT/Institute still uses register of the Ministry of Agriculture.

Regarding data on rest capacity of landfills, according to the Waste Management Act (OG No 84/21), the landfill operator should submit data into database Central Management System for the Data on Landfills of Waste maintained by MEPGT/Institute. Data should be submitted on annual basis, by 31 January of the current year for the previous year. Therefore, data for 2024 were reported by the end of the January 2025. Validation of reported data was performed during 2025.

4. Accessibility and clarity

The data and information on waste are disseminated primarily on Waste Management Information System Portal of the MEPGT/Institute (<https://isgo-portal.haop.hr/hr/>). The data about facilities and environmental pollution register can be found on website <https://haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/postrojenja-i-registri>.

Portal and website provides access to databases that contain reported and collected data on waste:

Publications and reports:

- <https://isgo-portal.haop.hr/hr/nacionalna-izvjesca>,
- <https://www.haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/postrojenja-i-registri-2>

Indicators:

- <https://isgo-portal.haop.hr/hr/pokazatelji>

Public browsers:

- <https://roo.azo.hr/rpt.html>
- <https://isgo-portal.haop.hr/hr/aplikacije>

Data were also published using LoW classification in Statistical Yearbooks (up to 2018), Statistical Information publication of the CBS (<https://podaci.dzs.hr/hr/>).

Regarding clarity, MEPGT/Institute publishes on its websites legislation, manuals and instructions for companies, questionnaires etc (<https://isgo-portal.haop.hr/hr/upute-i-prirucnici>).

Additionally, MEPGT by meetings and workshops disseminate data and information. Data and other information are available on request by phone, info mail and other sources (<https://mzozt.gov.hr/pristup>).

[informacijama-4924/4924; https://isgo-portal.haop.hr/hr/kontakt](https://isgo-portal.haop.hr/hr/kontakt)) which is in line with the Act on the right to access information (OG no. 25/13, 85/15, 69/22).

5. Comparability

Data collected by CBS up to 2010 and data collected by MEPGT/Institute are incomparable because of two different methodologies used for data collection.

Regional comparability of data on waste treatment facilities:

Waste management permits are issued for the location of waste treatment facilities.

Regarding mobile waste treatment facilities, the permits are issued for each treatment location. If a permit for a mobile waste treatment plant was issued for two or more locations belonging to the same region, that waste treatment facilities was counted only once.

6. Coherence

Data reported according to WStatR were used also for the preparation of environmental indicators and national reports.

7. Burden on respondents

There are cca 5400 NO forms (from cca 3700 companies) and 440 OZO forms (from about 380 companies) filled for reporting year 2024. These forms are prescribed by the Ordinance on Environmental Pollution Register (OG No 87/15). They are filled electronically so there are some prefilled general fields, automatic checks and available data for previous reporting year in order to shorten the time necessary for data submission. If there is a need, according to the reporting obligation in Croatia, MEPGT/Institute asks companies for additional information. There are also manuals, instructions and FAQ available on MEPGT/Institute webpage.