

Reference Metadata in ESMS 2.0 structure

Statistical survey on waste by section of economic activity

E_ZS.O.1_A_EN_2024_1

Reference Metadata in ESMS 2.0 structure

1	Contact
1.1	Contact organisation
State Statistical Office	
1.2	Contact organisation unit
Department of environment, energy and transport.	
1.3	Contact name
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Adviser	
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1.8	Contact fax number
00389 2 3111 336	
2	Metadata update
2.1	Metadata last certified
29/03/2024	
2.2	Metadata last posted
29/03/2024	
2.3	Metadata last update
29/03/2024	

3	Statistical presentation
3.1	Data description
<p>Data on waste by sector of economic activity show the quantities of generated waste, treated waste and the number and capacities of waste treatment installations. The data on generated waste are distributed according to the source (19 economic activities according to the NKD Rev.2 classification and household activities) and according to waste categories (according to the European classification of waste for statistical purposes). Data on waste treatment are divided into five types of treatment (recovery, incineration for energy, other incineration, recycling and disposal in and above ground). The data on generated and treated waste are divided into groups of hazardous and non-hazardous waste.</p> <p>Indicators that are calculated and published:</p> <ul style="list-style-type: none"> - Generation of waste excluding large mineral waste by hazardousness - Rate of waste removed to a landfill, excluding major mineral waste 	
3.2	Classification system
<p>National classification of economic activities. <u>NACE Rev.2</u> which is harmonized with European NACE Rev. 2 classification from 01.01.2008.</p> <p>Nomenclature of territorial units for statistics, NUTS.</p> <p>List of wastes, LVO (LoW).</p> <p>Statistical classification of waste, SKOT (by EWCStat).</p>	
3.3	Sector coverage
<p>Business entities with 10 or more employees with economic activity in sectors A/A to U/R according to NACE Rev. 2.</p>	
3.4	Statistical concepts and definitions
<p>Data on waste generation are divided by source (several business activities according to the <u>NACE Rev. 2</u> classification and household activities) and by waste categories according to the European Waste Classification for statistical purposes (EWC-Stat).</p> <p>Data on waste treatment are divided by treatment type (recovery, incineration with energy recovery, other incineration, disposal on land and land treatment) and by waste categories. All values are measured in tonnes of waste.</p> <p><i>Waste generation</i></p> <p>The quantity of waste generated is an important indicator, e.g. for monitoring consumption patterns or the resource efficiency of industrial production. It can be used to measure an increase, or decline, of waste over time and also the difference in generation between countries.</p> <p><i>Waste treatment</i></p>	

Data collection on waste treatment is closely linked to the definitions of the Waste Framework Directive (2008/98/EC) and to the lists of treatment operation set out in Annex I (Disposal operations) and Annex II (Recovery operations) of the Directive. Recovery means any operation the principal result of which is waste serving a useful purpose by replacing other materials, which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Disposal means any operation not being recovery even where the operation implies the reclamation of substances or energy as a secondary consequence.

Definitions:

Waste is a material or object from one of the groups of waste specified in the List of Waste (Commission Decision of 18 December 2014 amending 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council), which the owner discards or intends or is required to discard. To protect the environment or other public benefits, waste must be collected, submitted for processing or disposal, transported, recovered or disposed of in a prescribed manner.

Hazardous waste is waste which displays one or more of the hazardous properties listed in annex of Commission Regulation (EU) No. 1357/2014 of 18 December 2014 replacing Annex III to Directive 2008/98 / EC of the European Parliament and of the Council on waste and repealing certain directives.

List of Waste (LoW) is a list of hazardous and non-hazardous waste defined by Commission Decision of 18 December 2014 amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council. Waste is classified into groups according to its origin. In addition to the name, each waste has a six-digit number. If the waste is hazardous, the number is followed by an asterisk. The generator of waste is responsible for the classification of waste into the appropriate group.

Waste management covers collection, transport, recovery and disposal of waste, including supervision of such operations and after-care of disposal sites, and of a dealer or broker.

Waste collection is waste assuming, including its previous storage for purposes of transport, to a waste treatment facility.

Waste treatment includes recovery or disposal operations, including preparation for recovery or disposal. A waste treatment contractor may commence with waste treatment activities after obtaining an environmental

permit for waste treatment from the Ministry of the Environment and Spatial Planning.

Waste recovery is a procedure the main result of which is that waste is usefully applied in the facility in which it has been processed, or in other economic activities in a way that it replaces other materials which would otherwise be used to fulfil a particular function, or is prepared to meet this function. The list of recovery procedures is set out in Annex 2 to the Regulation on Waste, but this does not exclude other possible recovery procedures. In the environmental permit for waste recovery code (R) is determined, according to which the processor recovers the waste.

Recycling is any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.

Waste disposal is a procedure which is not recovery, even if it is a secondary consequence of the reclamation of substances or energy. The list of disposal procedures is set out in Annex 3 to the Regulation on Waste (OJ RS, No. 37/15 and 69/15), but this does not exclude other possible disposal procedures. In the environmental permit for waste disposal code (D) is determined, according to which the disposer disposes the waste.

Landfill is a waste disposal site for the deposit of the waste onto or into land (i.e. underground), including internal waste disposal sites (i.e. landfill where a producer of waste is carrying out its own waste disposal at the place of production), and a permanent site (i.e. more than one year) which is used for temporary storage of waste.

3.5	Statistical unit
Enterprises	
3.6	Statistical population
All business entities/local units (with 10 or more employees) whose activity causes generation, recovery, disposal, collection of waste, belonging to sections A/A to U/P, according to NKD Rev.2.	
3.7	Reference area
NUTS 1 and 2 (Republic of North Macedonia)	
3.8	Time coverage
Since 2008 onwards.	
3.9	Base period
Not applicable	
4	Unit of measure
Tonne.	
5	Reference period
Calendar year.	
6	Institutional mandate
6.1	Legal acts and other agreements
NATIONAL LEGISLATION	
Law on State Statistics ("Official Gazette of the Republic of Macedonia" No. 54/1997, 21/2007, 51/2011, 104/2013, 42/2014, 192/2015, 27/16, 83/18, 220/18, 31/20) (https://www.stat.mk/en/about-us/legal-acts/law-on-state-statistics/)	

The Programme of Statistical Surveys 2023-2027 ("Official Gazette of the Republic of North Macedonia" No. 29/23). (<https://www.stat.mk/en/about-us/legal-acts/program-for-statistical-surveys/>)

EUROPEAN LEGISLATION

Regulation (EC) No 2150/2002 of the European Parliament and of the Council.

6.2 Data sharing

Data on waste by sector of economic activity are exchanged with the Ministry of Environment and Spatial Planning based on a document - Memorandum of Understanding. Other institutions with which the data are shared are non-governmental organizations, local units with application of data for the purposes of creation of plans and strategies for waste management.

Data is shared through eDamis to Eurostat according to the Regulation 2150/2002; UNECE (Joint questionnaire), UNSD-UNEP (Questionnaire on environmental statistics).

7 Confidentiality

7.1 Confidentiality - policy

1. The protection of individual data is regulated by the Law on State Statistics (<https://www.stat.mk/en/about-us/legal-acts/law-on-state-statistics/>).
2. The basic principles and activities undertaken to ensure data confidentiality are described in the Policy on Statistical Confidentiality (<https://www.stat.mk/en/about-us/policies-and-strategies/policy-on-statistical-confidentiality/>).

7.2 Confidentiality - data treatment

Pursuant to Article 38 of the Law on State Statistics (<https://www.stat.mk/en/about-us/legal-acts/law-on-state-statistics/>) and the Policy on Statistical Confidentiality (<https://www.stat.mk/en/about-us/policies-and-strategies/policy-on-statistical-confidentiality/>), individual data are not published. However, if access is granted to microdata from the relevant survey, then the methods used to prevent data disclosure should be specified.

8 Release policy

8.1	Release calendar
The date of data publication is determined in the Advance Release Calendar, which is updated quarterly.	
8.2	Release calendar access
https://www.stat.mk/en/publishing-calendar/#/	
8.3	User access
All users have equal access to statistics at the same time: this means that the publication dates are announced in advance and no user has access to official statistics before they are published. Statistical data are first published in the "News Releases" edition on the website of the State Statistical Office at 12:00.	
9	Frequency of dissemination
Biannual.	
10	Accessibility and clarity
10.1	News release
<p>News Releases are published and they are available on the website of the SSO in the section: "News Releases" (https://www.stat.mk/en/all-new-releases)</p> <p>News Release Waste by section of economic activity is published and it is available on the website of the SSO in the section "News Releases" (https://www.stat.mk/en/stat/industry-energy-and-environment/environment/waste-by-sectors-of-economic-activity/waste-by-section-of-economic-activity-2022/)</p> <p>.</p>	
10.2	Publications
<p>Data on the waste is published in:</p> <p>Statistical Yearbook (https://www.stat.gov.mk/PrikaziPublikacija_1_en.aspx?rbr=845)</p> <p>Environmental Statistics (https://www.stat.gov.mk/PrikaziPublikacija_1.aspx?rbr=847)</p>	
10.3	On-line database
MAKStat database-Environment	

http://makstat.stat.gov.mk/PXWeb/pxweb/mk/MakStat/MakStat_ZivotnaSredina/225_ZivSr_na_c_otp_sektori_mk.px/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f7ec5ef

10.4 Micro-data access

The use of microdata by external users is possible only for research purposes and is done in accordance with the Law on State Statistics (Article 41, Article 42 and Article 43). Access to anonymised microdata is defined by an internal procedure of the State Statistical Office "Access to anonymised microdata for scientific research purposes" (<https://www.stat.mk/en/about-us/procedures/rules-for-access-to-anonymised-microdata-for-research-purposes/>).

10.5 Other

At the request of users, data are also prepared in a form according to their needs.

10.6 Documentation on methodology

Methodological explanation, national

http://www.stat.gov.mk/MetodoloskiObjasSoop_en.aspx?id=82&rbrObl=28

Methodology from Eurostat

<https://ec.europa.eu/eurostat/documents/342366/351806/Guidance-on-EWCStat-categories-2010.pdf/0e7cd3fc-c05c-47a7-818f-1c2421e55604>

10.7 Quality documentation

The quality report is published on the SSO web-site (http://www.stat.gov.mk/Meta_godini_v2.aspx). The last refers to 2022 година.

The quality report is transmitted to Eurostat via ESS Metadata handler (<https://webgate.ec.europa.eu/estat/spe/metaconv/home.htm#>). The last refers to the reference year 2022.

11 Quality management

11.1 Quality assurance

The quality of the processes and products in the State Statistical Office is ensured by adhering to the European Statistics Code of Practice (<https://www.stat.mk/en/about-us/quality/code-of-practice/>) and the Quality Assurance Framework within the European Statistical System (ESS

Quality	Assurance	Framework	–
https://ec.europa.eu/eurostat/documents/64157/4392716/ESS-QAF-V2.0-final.pdf).			The quality criteria are also determined in the Law on State Statistics in Article 4b and Article 4c (https://www.stat.mk/en/about-us/legal-acts/law-on-state-statistics/).
11.2	Quality assessment		
<p>The State Statistical Office carries out statistical activities in accordance with the Statistical Business Process Model, which is based on the international model - Generic Statistical Business Process Model (GSBPM). The application of this model and international standards in statistical production ensures a high level of accuracy and comparability of data.</p>			
12	Relevance		
12.1	User needs		
<p>Data on waste by sectors of economic activity are used by national institutions: Ministry of environment and physical planning, Regional center of environment, industrial and business associations, environmental associations, nongovernmental organizations, local government units for monitoring the trends of the amount of waste through the years as well as for calculation of indicators. Data are used by the decision-makers for the technical justification of their policies, for strategies and plans of actions in the field of waste management, in establishing strategic actions and measures for economic development aiming to implement programmes for active measurement of the lowering the amount of waste, as well as preparation of reports for the status of the environment in the field of waste management. International users: European organizations express their necessity for information through specific regulations and agreements, regular working meetings (Eurostat), international meetings (for database updating), questionnaires and requirements send out do SSO (OECD; UNSD-UNEP).</p>			
12.2	User satisfaction		
<p>Starting from 2009, the State Statistical Office conducts a User Satisfaction Survey every three years.</p>			

12.3	Completeness
<p>Data are available from 2008 onwards. SSO provides 100% of indicators required by the Regulation (EU) No. 2150/2002.</p> <p>Data completeness on national level = 100%</p> <p>Data completeness for Eurostat = 100%</p>	
13	Accuracy and reliability
13.1	Overall accuracy
<p>The survey methodology and the data collection method ensure good coverage and accuracy of the data.</p>	
13.2	Sampling error
<p>In each variable there are different waste categories. The size of the business entity (small, medium, large enterprise) has a big role and the combination of enterprises like this is contained into the variables, thus there are big differences in the standard error and the mediana (the coefficient of variation is a quotient of the two).</p>	
13.3	Non-sampling error
<p>Measurement errors: Data providers are informed about the survey by sending an electronic data collection notice. The collected data is controlled in the Central Office.</p> <p>Data processing errors: In parallel with the electronic filling of the questionnaires, the process of processing and controlling them was carried out. The most common errors identified were incorrectly identified waste category, not filling in the appropriate table linked to a base table (eg waste generated, not filled in that it was stored or disposed of). In the event of some major deficiencies in the questionnaires, the data providers were contacted, and for certain items, the data was imputed using the method of expert assessment (manual imputation). Non-response errors: Unit non-response rate is 41%. The most common errors identified were incorrectly identified waste category, not filling in the corresponding table linked to a basic table (eg waste generated, not filled in that it was stored or disposed of).</p>	
14	Timeliness and punctuality

14.1	Timeliness
T+540 days.	
14.2	Punctuality
Data are published on the day announced in the Advance Release Calendar.	
15	Coherence and comparability
15.1	Comparability - geographical
<p>There is geographic comparability of the data disseminated at the national and regional level.</p> <p>Due to the unity of principles, variables, definitions and classifications used there is a high degree of comparability with EU Member States with regard to the survey's results.</p> <p>Geographical comparability is also enhanced due to the relevant Manual of Eurostat and the relevant checks conducted by Eurostat.</p>	
15.2	Comparability - over time
Data from 2008 onwards are calculated according to NACE Rev. 2 and the comparability of time series is ensured.	
15.3	Coherence - cross domain
Coherence between fields is not ensured.	
15.4	Coherence - internal
Internal coherence of data is ensured, data are compared with other surveys from the sector.	
16	Cost and burden
Average time for filling up the questionnaire is between 15 and 20 minutes.	
17	Data revision
17.1	Data revision - policy
<p>Data revision is made in accordance with the Statistical Data Revision Policy of the SSO: (https://www.stat.mk/en/about-us/policies-and-strategies/data-revision/).</p>	
17.2	Data revision - practice

18	Statistical processing
18.1	Source data
<p>Source of data: Statistical survey on Waste by sectors of economic activities.</p> <p>Frame on which the selection is based the random sample selection is Statistical business register.</p> <p>Method used for data collection: Sample, random</p> <p>Criteria for stratification:</p> <p>Business entities are selected from the business register (with 10 or more employees) in the sectors A/A-U/P by NACE (Rev.2).</p> <p>In the sample for 2022, 1800 business entities are covered.</p>	
18.2	Frequency of data collection
Biannual.	
18.3	Data collection
<p>Data are collected with the questionnaire of waste by section of economic activities (ZS.O.1).</p> <p>Data are collected with the method of self-fulfilment - on printed questionnaires.</p>	
18.4	Data validation

Data validation is made according to the defined criteria for control. Data validation is performing before and after data entry. For deviations reporting units are contacted. Data check is performed on the final results before their publication.

Upon receipt of the questionnaire (by mail or Excel by email) it is archived, recorded, controlled and entered with the application (in Blaze).

The application performs the mandatory controls according to the defined validation rules. In case of errors the data providers are contacted.

The coverage is controlled which should be 100%.

Output data validation:

Output data are analyzed and verified, compared to the previous year (years).

18.5	Data compilation
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Editing: Aggregated data are obtained with data weighting of the sample. The lowest level of aggregation is on NTES 2 level. Variable on which a sample is made is the number of employees in each stratum. Imputation: Imputation is made with data from the previous period.

18.6	Adjustment
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Not applicable

19	Comment
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A.1	Annexes
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