



"PACKAGES PLACED ON THE MARKET" **STATISTICAL SURVEY METHODOLOGY**

The statistical survey is conducted annually by the Environmental and Energy Accounts Department, Macroeconomic Statistics Directorate, of the National Statistical Institute, on the basis of mandatory participation, according to the National Statistical Program.

According to Art. 20 of the Statistics Act, respondents are obliged to provide the National Statistical Institute with reliable data on surveys included in the National Statistical Program, which are intended to be conducted on the basis of mandatory participation.

According to Art. 25, para. 1 of the Statistics Act, individual data obtained and collected during statistical surveys are confidential and can only be used for statistical purposes.

GENERAL INFORMATION

OBJECTIVE

The main objective of the statistical survey is to provide information to all stakeholders and the public about the packages placed on the market. The data are also used for the needs of fulfilling the country's obligations under the Directive 94/62/EC on packaging and packaging waste, as well as under the Council regulation (EU, Euratom) 2021/770 on the calculation of the own resource based on plastic packaging waste that is not recycled, on the methods and procedure for making available that own resource, on the measures to meet cash requirements, and on certain aspects of the own resource based on gross national income.

ESSENCE

According to Art. 3, para. 1 of Directive 94/62/EC on packaging and packaging waste, 'package' means all products, made of material of any nature, used to contain, store, transport, deliver and present goods, from raw materials to processed goods, from the producer to the user or the consumer. Items that are 'non-returnable' and used for the same purposes, are also considered packaging.

'Package' includes only:

- a) Commercial package or primary package, i.e. package, intended as a unit of goods for sale to the final consumer at the place of purchase;
- b) group package or secondary package, i.e. package intended as a group of a certain number of units of goods at the place of sale, regardless of whether it will be sold in this way to the end user or consumer, or serves only to fill the shelves at the place of sale; it is removed from the product without affecting its qualities;
- c) Transport package or tertiary package, i.e. package intended to facilitate the carrying and transport of a number of articles or group packages to prevent physical handling or transport damages. Transport packages does not include containers for road, rail, sea and air transport.

According to Art. 29 of the additional provisions of the Ordinance on packaging and packaging waste (PMS No. 271 of 30.10.2012) 'placing on the market' is the first making the product available to another person, free of charge or by payment, in order to be distributed and/or used on the territory of the Republic of Bulgaria, as well as the import and introduction of the product

into the territory of the Republic of Bulgaria by a given person for his own commercial, production or professional activity.

PURPOSE

The data on the packages placed on the market is part of the information in fulfilment of the country's obligations under the Packaging and Packaging Waste Directive, as well as under the Council regulation (EU, Euratom) 2021/770 on the calculation of the own resource based on plastic packaging waste that is not recycled. For this purpose, they are provided to the ExEA in a format in accordance with the Commission Implementing Decision (EU) 2019/655 amending Decision 2005/270/EC establishing formats related to the database system pursuant to Directive 94/62/EC on packaging and packaging waste. The data are used for the needs of reporting in the relevant formats to the European Commission.

The data are published annually, according to the Release Calendar, on the NSI website for public information. They are also provided to various institutions or organizations in the country for evaluations and analyses.

STATISTICAL SURVEY

SCOPE, STATISTICAL UNIT AND GENERAL POPULATION

The statistical survey covers all enterprises - major producers and importers of packages and packaged goods.

The statistical unit is an enterprise that is a member of organizations for recovery of packaging waste, and an enterprise, whose main activity is in certain industries producing packaged goods, but which are not members of organizations for the recovery of packaging waste.

The general population consists of active enterprises, whose activity is related to the production and import of packages and packaged goods.

The statistical survey is comprehensive according to certain criteria with study of the main array.

DATA SOURCES

- Statistical survey "Packages placed on the market";

Information from other statistical studies (business statistics) is also used to define the population, verify the data and perform estimations.

FREQUENCY OF DATA COLLECTION AND PUBLICATION

Annually.

STATISTICAL STUDY

DEFINING THE STATISTICAL POPULATION FOR THE STUDY

The statistical population is made up of statistical units (enterprises), included in the Statistical Business Register (SBR) whose economic activity (NACE Rev.2) is related to the placing on the market of packages, and enterprises, that are members of organizations for recovery of packaging waste, for which is known in advance, that they bear the characteristic surveyed.

In order to reduce the respondents burden, only enterprises with 10 and more employees are included in the survey. An estimation is made for enterprises with less than 10 employees.

The population is updated annually before the start of the Campaign.

DATA COLLECTION

Primary data are collected from respondents for the previous reporting year. The data are collected via Environmental Statistics Information System (ESIS), which includes automatic checks for completeness, valid values, and logical data control, according to the specifics of the survey. The nomenclatures used for its needs and instructions for the respondents are available in the system.

PRIMARY DATA PROCESSING, DATABASE PREPARATION

PRIMARY DATA PROCESSING

After the respondents have reported their data in ESIS, their processing begins. It is carried out in the system according to the survey program schedule and goes through several stages.

Data validation is carried out on the basis of clearly defined criteria regarding their completeness, correct classification, units of measure, comparability with previous years, logical control, etc.

All checks are done at the respondent level.

DATABASE PREPARATION

After finalising the process of removing all identified errors and discrepancies in the data, actions on classifying and coding the data related to the statistical units or collected variables are also taken. The purpose of these encoding procedures is to obtain derived variables, numerical values, or aggregate values during the next processing stages. The coding process is carried out using code tables. When new versions of the used classifications and nomenclatures appear, recoding and reclassification of statistical units and variables is carried out.

After completing these actions, the methodologists prepare the primary database for further processing and calculation the statistical data.

CALCULATION AND ANALYSIS OF STATISTICAL INDICATORS

DATA PREPARATION

Data preparation is a set of processes through which the primary data are brought into a form suitable for the statistical data calculation, analysis and assessment of their quality and the subsequent presentation to users, incl. fulfillment of reporting obligations to Eurostat, according to the specified table formats.

ASSESSMENT OF PRIMARY DATA RESPONSE RATE

Reports from all survey respondents should be collected within the Campaign. In case a 100% response rate is not achieved, the need for an estimates of the missing data is assessed and, if necessary, carried out.

STATISTICAL DATA CALCULATION

Packages placed on the market

The calculation of the statistical data on the packages placed on the market is carried out on the basis of the collected primary data, adding the estimate of enterprises with fewer than 10 employees to the population. This estimate was made on the basis of proportions of the production of enterprises in the respective classes according to the NACE Rev. 2. The

‘production’ indicator has the closest relation with the observed indicator ‘quantity of packages placed on the market’.

For each class of the NACE Rev. 2, a share of the production of enterprises with 10 or more employees from the production of all enterprises in the population is calculated (formula 1).

Formula 1:

$$D_{\geq 10} = \frac{\sum V12120_{\geq 10}}{\sum V12120} * 100$$

where:

- $D_{\geq 10}$ - share of the output of enterprises with 10 and more employees from the output of all enterprises in the general population;
- $\frac{\sum V12120_{\geq 10}}{\sum V12120}$ - the production of enterprises with 10 or more employees;
- the output of enterprises in the general population.

This percentage is used to estimate the quantity of packages of enterprises with less than 10 employees.

The quantity of packages for enterprises with less than 10 employees is obtained by dividing the quantity of packages obtained from the survey of the enterprises with 10 or more employees by the percentage, obtained for the corresponding class of NACE Rev. 2 and by multiplying the share of the production of enterprises with less than 10 employees (formula 2).

Formula 2:

$$P_{\leq 9} = \frac{\sum P_{\geq 10}}{D_{\geq 10}} * (100 - D_{\geq 10})$$

where:

- $P_{\leq 9}$ - the amount of packaging for enterprises with less than 10 employees;
- $\sum P_{\geq 10}$ - quantity of packaging of the enterprises with 10 and more employed by the research;
- $D_{\geq 10}$ - share of those employed in enterprises with 10 or more employed among those employed in all enterprises from the general population in the relevant industry.

The final data on the quantity of packages placed on the market is obtained by adding the data, obtained from the estimates in the enterprises with less than 10 employees, to the data of the enterprises with more than 10 employees from the population, which are not estimated.

Lightweight plastic carrier bags

The calculation of the statistical data on the number of lightweight plastic carrier bags is carried out on the basis of the collected primary data, adding to the data of the main array the estimate of enterprises with less than 10 employees in the class 4711 ‘Retail sale in non-specialised stores with food, beverages or tobacco predominating’. This estimate is made on the basis of proportions of the turnover of enterprises in class 4711 ‘Retail sale in non-specialised stores with food, beverages or tobacco predominating’. The ‘turnover’ indicator has the highest correlation with the observed ‘quantity of lightweight plastic carrier bags’. For class 4711 of the NACE Rev. 2, a share of the turnover of enterprises with 10 and more employees is calculated from the turnover of all enterprises in the population in class 4711 ‘Retail sale in non-specialised stores with food, beverages or tobacco predominating’ (formula 3).

Formula 3:

$$D_{\geq 10} = \frac{\sum V12110_{\geq 10}}{\sum V12110} * 100$$

where:

- $D_{\geq 10}$ - share of the turnover of enterprises with 10 or more employees of the turnover of all enterprises in class 4711;
- $\sum V12110_{\geq 10}$ - turnover of enterprises with 10 or more employees;
- $\sum V12110$ - enterprise turnover of enterprises in the general population in class 4711.

This percentage is used to estimate data on the number of lightweight plastic carrier bags for enterprises with less than 10 employees.

The number of lightweight plastic carrier bags of enterprises with less than 10 employees is obtained by dividing the obtained number of lightweight plastic carrier bags from the survey of enterprises with 10 and more employees by the percentage obtained for class 4711 according of NACE Rev. 2 and by multiplying by share of the turnover of enterprises with less than 10 employees (formula 4).

Formula 4:

$$P_{\leq 9} = \frac{\sum P_{\geq 10}}{D_{\geq 10}} * (100 - D_{\geq 10})$$

where:

- $P_{\leq 9}$ - number of lightweight plastic carrier bags for businesses with less than 10 employees;
- $\sum P_{\geq 10}$ - number of lightweight plastic carrier bags in enterprises with 10 and more employed by the survey;
- $D_{\geq 10}$ - share of those employed in enterprises with 10 or more employed among those employed in all enterprises from the general population in class 4711 according to KID-2008.

Specialised software – Excel, SPSS and/or R – is used to calculate the data.

Confidentiality

According to Regulation (EC) No. 223/2009 on European statistics and Statistics Act, the individual (primary) data of enterprises are confidential. In order to ensure their protection and the impossibility of being identified, the aggregated indicators are defined as confidential also when:

- Criterion A - the indicator is formed by one or two enterprises;
- Criterion B - one enterprise dominates the value of the indicator with a share equal to or greater than 85%.

QUALITY ASSURANCE

The statistical survey follows the General model of the statistical production process in NSI. The quality assurance is carried out in order to guarantee compliance with the requirements of the Statistics Act. Data quality is ensured by the application of the European Statistics Code of Practice principles and NSS Common Framework for Quality Management.

To ensure the high quality of the data, their consistency with data from the annual activities reports of the enterprises (net sales revenue, production revenue, revenue from industrial services, including from subcontracted outsourcing, employed persons) is checked. For the needs of the additional statistical estimation, the statistical indicator 'Revenues from production' is used

Efforts are being made to continuously improve the quality of the data, by improving the primary data collection system through the online-based ESIS, ensuring strict arithmetic and logical control of the input data, and by performing additional analyzes and verifications.

Quality report and metadata are also published on the NSI website together with the statistical data. They are updated annually and contain additional information related to the survey.

STATISTICAL PRESENTATION

The data on the packages placed on the market are presented by materials, according to Implementing Decision (EU) No. 2019/655 amending Decision 2005/270/EC establishing formats related to the database system, according to Directive 94/62/EC on packaging and packaging waste, at the national level (total for the country).

The data are provided to the Ministry of Environment and Water for reporting to Eurostat, according to the Directive 94/62/EC on packaging and packaging waste.

They are published on the NSI website in the 'Statistical data – Environment' section, as well as in the Infostat system. The data are used for the preparation of NSI publications: Statistical Yearbook, Statistical Reference Book, brochure 'Bulgaria', specialised electronic publication 'Environment', as well as for providing information upon users' request.