



NATIONAL STATISTICAL INSTITUTE

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THE SCOPE OF ENERGY STATISTICS IN BULGARIA

Study tour on Energy statistics and Energy balances
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OVERVIEW

- Methodologies applied for the compilation of energy statistics
 - Review of important Regulations and Directives
 - Scope of energy statistics in Bulgaria
 - Stages of energy statistics activities
 - Quality improvement and expansion the scope of energy statistics
- Units of measurement, classification schemes
- Data sources: administrative sources/registers

METHODOLOGIES APPLIED FOR COMPILATION OF ENERGY STATISTICS

➤ **Review of important regulations and directives**

National Statistical Institute (NSI) of Bulgaria carries out surveys in the field of energy statistics according to the principles for production and distribution of accurate, objective and reliable data, based on national legislation and in compliance with already discussed in the previous presentation Regulations and Directives, namely:

- Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics
- Commission Regulation (EU) No 844/2010 of 20 September 2010 amending Regulation (EC) No 1099/2008 of the European Parliament and of the Council on energy statistics, as regards the establishment of a set of annual nuclear statistics and the adaptation of the methodological references according to NACE Rev. 2



- Commission Regulation (EU) No 147/2013 of 13 February 2013 amending Regulation (EC) No 1099/2008 of the European Parliament and of the Council on energy statistics, as regards the implementation of updates for the monthly and annual energy statistics and is repealed Commission Regulation (EU) No 844/2010
- Council Directive 2004/8/EC on the promotion of cogeneration based on a useful heat demand in the internal energy market, which was abolished with Directive 2012/27/EU
 - Directive 2009/28/EC of the EP and the Council on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
 - Council Directive 2009/119/EC of 14 September 2009 imposing an obligation on Member States to maintain minimum stocks of crude oil and / or petroleum products
 - Directive 2008/92/EC of the European Parliament and of the Council of 22 October 2008 concerning a Community procedure to improve the transparency of gas and electricity prices charged to industrial end-users)



SCOPE OF ENERGY STATISTICS IN BULGARIA

Energy statistics data are provided by lots of specific statistical surveys carried out annually, monthly and half-yearly, included in the National Statistical Programme (NSP). It is part of the Law on Statistics and is updated annually.

Energy statistics is a complex and wide-ranging area. It produces an objective, accurate and timely information about:



SCOPE OF ENERGY STATISTICS IN BULGARIA

➤ Annual energy statistics

Provides energy data on:

- Production of primary energy
- Imports and exports of energy products (primary and transformed)
- Stocks of energy products
- The processes of transformation of energy products
- Final consumption (energy and non-energy)
- Efficient cogeneration of electricity and heat



SCOPE OF ENERGY STATISTICS IN BULGARIA

➤ Monthly energy statistics

Provides energy data on:

- Production of energy products (primary and transformed)
- Imports and exports of energy products
- Stocks of energy products
- Deliveries of energy products

SCOPE OF ENERGY STATISTICS IN BULGARIA

➤ **Half-yearly statistics**

Provides energy data on prices of electricity and natural gas to end-users defined by standard groups of annual consumption:

- Industrial end-users
- Households



STAGES OF ENERGY STATISTICS ACTIVITIES

Energy Statistics passes through the following stages:

- Organization of energy statistics surveys
- Data collection and verification
- Processing and aggregation of data by certain schemes
- Dissemination of energy statistics data



STAGES OF ENERGY STATISTICS

➤ **Organization** of energy statistics surveys

Organization of each survey includes a preliminary analysis of:

- The need (reason) of its conducting (Regulation, Law, Project, Contract)
- Indicators for which data will be collected
- Developing the structure of questionnaire, including characteristics of the respondents, observed indicators, definitions of the indicators and instructions for filling of questionnaire
- Used classifications
- The scope of the respondents and used registers
- Method of data collection - exhaustive or sample survey
- Deadlines for collecting of data from respondents
- Time needed for analysis of the accuracy, reliability and completeness of primary data
- Deadlines for processing the received individual data and aggregation of information
- Deadlines and method of dissemination.



DATA COLLECTION

Responding units submit energy statistics data by electronic questionnaires via:

- e-mail - in excel format for the most of the surveys
- online Information System Business Statistics (ISBS) – for the Annual consumption of fuel/energy and Production and sales of energy products

DATA COLLECTION – RESPONDING UNITS

➤ Annual energy statistics (1)

- Enterprises, extracting natural energy resources - coal, natural gas, oil, firewood
- Enterprises transforming energy products:
 - *Electricity and/or heat plants (Main activity producers or Autoproducers)*
 - *Oil Refineries*
 - *Coke ovens*
 - *Blast furnaces*
 - *Briquette plants*
 - *Producers of charcoal*
 - *Others*

DATA COLLECTION - RESPONDING UNITS

➤ Annual energy statistics (2)

- Consumers of fuels/energy from industry, transport and agriculture sectors, compiling Accounting Balance and submitting the Annual set of reports for Non-financial enterprises on its activities
- Suppliers of fuels/energy that report quantities supplied to households and enterprises in the services sector.



DATA COLLECTION - RESPONDING UNITS

➤ Monthly energy statistics

- Producers of energy products
- Importers of energy products
- Exporters of energy products
- Large consumers of energy products (whose stocks are subject of control under the Law of Energy and under the Law of the obligatory reserves of oil and petroleum products).



DATA COLLECTION - RESPONDING UNITS

➤ **Half- yearly statistics**

Data on prices of electricity and natural gas are submitted by the companies supplying electricity and natural gas to industry and household end-users:

- Producers and
- Traders

Regional Statistical offices experts participate in data collection process providing the energy statistics questionnaires. They carry out primary control for completeness and accuracy of energy data and submit questionnaires by e-mail at Energy and Transport division of NSI.



AGGREGATION OF DATA

Energy statistics data obtained are processed using software programmed by the NSI IT experts. It is based on the specific requirements of Energy statistics according to the corresponding Regulation and Directives.

Energy data are aggregated at national level in different formats for the needs of compilation the Overall Energy Balance and Annual questionnaires.



DISSEMINATION OF ENERGY STATISTICS DATA

Energy statistics data are available to domestic and foreign customers by different channels, which you will be shown in the next presentations.

NSI strictly comply with the confidentiality rules for the protection of individual data in the dissemination of energy statistics data.



IMPROVING THE QUALITY AND EXPANDING THE SCOPE OF ENERGY STATISTICS

Energy statistics is not a static system. It permanently is developing and enrich in order to meet of demand for statistical information from national and international users. It provides summary data for the country to be used for policy and for conducting of short-term and long-term analysis and forecasting.

The conducting of global policy for efficient use of energy resources through measures to limit the use of fossil energy resources and increase the use of renewable energy resources, as and environmental protection, requires statistical information to make evaluation of the results, achieved by the implemented actions in this regard.



QUALITY IMPROVEMENT AND EXPANSION THE SCOPE OF ENERGY STATISTICS

- Bulgarian statistics as part of the European Statistical System and with purpose to meet the requirements for the provision of relevant and timely statistical information has adapted its surveys including new monitoring indicators, repealing of obsolete and carry out new surveys.
- Recently, new surveys are carried out on the production and import of liquid bio-fuels, production of electricity from wind and solar energy.
- There is a need for organization to collect data on the heating / cooling pumps. A number of difficulties concerning provision of data on the installed heat pumps (their number and capacity) exists. There is a lack of registers and administrative information about heat pumps capacity and produced heat.



UNITS OF MEASUREMENT

- **Specific units** of measurement are used in energy statistics surveys for the energy products:
 - **tone**
 - **cubic meters**
 - **kWh**
 - **GJ.**
- **Ton oil equivalent** (toe), as one of the generally accepted in international practice energy unit of measure, is used to express aggregated data for compilation of the **Overall Energy Balance**. Net energy content for the energy products (NCV) is used for that purpose.



DATA AGGREGATION FORMATS

- National balances for each of the energy products are compiled from the annual surveys on energy statistics in different units of measurement:
 - in specific units
 - in GJ
 - in thousand tons of oil equivalent (toe).
- Balance indicators are prepared according to Eurostat's structure of energy balance into three parts:
 - Primary energy
 - Transformed energy
 - Final consumption of energy
- Detailed content of the indicators of each group will be given in the next presentations.

DATA AGGREGATION FORMATS

➤ ANNUAL DATA

- National balances for each of the energy products in specific units of measure are source for completion of the five annual joint questionnaires of Eurostat / IEA / UN for:
 - Coal
 - Electricity & Heat
 - Oil
 - Gas
 - Renewable end wastes
- National balances for each of the energy products in ktoe are used for the compilation of Overall Energy Balance.

DATA AGGREGATION FORMATS

- Aggregated annual data are used for the calculation of:
 - ***Indicators for sustainable development:***
 - Final energy consumption by sectors
 - Energy intensity
 - Share of RES in gross final energy consumption
 - Energy dependency
 - Share of electricity from CHP generation in gross electricity generation
 - Share of renewable electricity sources in gross electricity consumption.
 - Energy consumption of transport, by mode
 - ***“Europa 2020” indicators*** - used for comparison between the European Union Member states **and** which shows the performance of the targets:
 - Share of renewable energy in gross final energy consumption
 - Primary energy consumption.

DATA AGGREGATION FORMATS

➤ MONTHLY DATA

Individual data are aggregated at national level in four monthly Eurostat questionnaires.

➤ HALF-YEARLY DATA

Electricity and natural gas prices charged to industrial and household end-users are calculated as weighted averages prices for the country and are presented at three levels for each group of standard end-users, in accordance with Directive 2008/92/EC.

Detailed description of price levels, end-user groups and specifics of Bulgarian practice in this area will be given in the next presentations.

CLASSIFICATIONS AND REGISTERS

- Following classifications and registers are used in the collection and aggregation of energy statistics data:
- **PRODENERGY** - "Nomenclature of Energy products" established on the basis of Annex A of Regulation 1099/2008 of the European Commission and Parliament, amended by Regulation No 147/2013 of the Commission on monthly and annual quantitative data on energy statistics.
 - **NACE** - Classification of economic activities
 - **RSE** - National Register of statistical units. It includes all entities, that submit statistical reports.
 - Register of **persons liable** under the Law of the obligatory reserves of oil and oil products.
 - Lists of licensed **producers/traders of electricity, heat and natural gas**



DATA SOURCES: ADMINISTRATIVE SOURCES/REGISTERS

- Energy statistics data are based on the surveys carried out by the National Statistical Institute of Bulgaria.
- Administrative data from sources and registers of MEE, Customs State Agency, "State reserve and War-Time Stocks" Agency are used by NSI for development and improvement the quality of energy statistics data.



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THANK YOU FOR YOUR ATTENTION !

For further questions, please contact at:

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