

# Energy Balance

Metadata

National Bureau of Statistics of the Republic of Moldova (NBS)

## 1. Contact Information

### 1.1. Responsible subdivision within NBS

Industry and Energy Statistics Division

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## 2. Metadata Update

### 2.1. Last certification of metadata

22.01.2021

### 2.2. Last update of metadata

22.01.2021

## 3. Statistical Presentation

### 3.1. General description

The Republic of Moldova, as a full-fledged State of the Energy Community, has the obligation to calculate and disseminate accurate and timely data on energy quantities, their forms, sources, generation, supply, transformation and consumption, for monitoring the impact and consequences of its policy work on energy. The common framework for the production, transmission, evaluation and dissemination of comparable energy statistics in the Energy Community is provided by Regulation (EC) No. 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics, with subsequent modifications. The Regulation applies to statistical data concerning energy products and their aggregates. At national level, this methodology was approved by the Decision of the National Bureau of Statistics Collegium, no. 6/3 of December 23, 2014.

**The energy balance** of the Republic of Moldova represents an ample work of the NBS referring to the energy resources used on the territory of the Republic of Moldova from all energy-producing sources. This is developed annually and covers indicators related to the production, import, export, distribution, and final consumption of primary resources and transformations, to ensure the economic activities, as well as the household consumption during the reported year.

It is structured in 2 major directions:

- Energy balance expressed in energy units according international standards (oil equivalent, coal equivalent, Joules)
- Energy products balance expressed in corresponding natural units (tonnes, m<sup>3</sup>, kWh, Gcal, etc.)

Beginning with 2010 Energy balance of the Republic of Moldova is presented in accordance with international standards (IEA, UN, Eurostat) in conventional energy units (oil equivalent, coal equivalent, Joules).

### 3.2. Concepts and definitions

#### 3.2.1. Definitions

The energy balance is composed of two large compartments: “**Resources**” and “**Distributions**”

The “*Resources*” compartment mirrors the sources producing energy resources, while the “*Distributions*” compartment – the main distribution and consumptions directions.

The “Resources” compartment of the energy balance contains information on creation of energy resources:

- production of primary energy and recovered energy;
- import;
- stocks at the beginning of the period.

**Production of primary energy** covers the energy obtained from the exploitation of energy sources existing in nature (in deposits, forests, water flows, etc.). It can be used as such or after a preliminary processing (sorting, washing, purification, etc.) and does not change their initial structure, but only improves the quality to be used as fuel or raw material for producing other combustible or non-combustible products. The primary energy production also covers production of hydro-electrical energy, solar energy, geo-thermal energy, wind energy, biogas, etc. Other **sources of recovered energy** include combustible products obtained as result of some activities, other than those of energy production, such as wood processing, agriculture, etc.

**Import** covers quantities of primary and transformed energy entered on the territory of the country from abroad. The volume, which transits the national territory, is not included.

**Stocks at the beginning of the reference period** cover the stocks of primary energy and transformed energy held by producers, distributors, and consumers, as well as those under economic units’ custody.

The “Distributions” compartment of the energy balance covers the quantity of distributed energy resources by destination, losses, export, and stocks of energy at the end of the year. **Sector for transformation** in other energy sources is presented by quantities of fuel consumed in installations for electricity production (regardless of the installation type and economic unit type), as well as for production of thermal energy. **Final consumption of resources for production-technological needs** is represented by consumptions meant for industrial production (specified by types of activities), in agriculture, constructions, transportation, illumination, heating, ventilation, water supply, and other economy sectors.

**Export** covers the quantities delivered from outside of the country. For electricity – export covers the quantities delivered by the energy system. The electricity transiting the country is not covered.

**Losses** cover:

- for electricity: technological consumption in transportation, transformation, and distribution installations;
- for thermal energy: quantity of thermal energy from used steam and condensation which is not returned to the steam boilers; thermal energy as hot water which is not returned to the hot water production source;
- for fuel: quantities lost during transportation, manipulation and storage performed by producers, distributors, and consumers.

**Stock at the end of the period** covers the quantities of fuel and combustible held by producers, distributors, and consumers at the end of the reference period, regardless of their source.

### 3.2.2. Unit of measurement

The energy balance is developed in natural units (for energy products balance) and in conventional energy units (oil equivalent, coal equivalent, Joules).

The conversion of natural units of measurement into energy units is carried out in accordance with the International Recommendations on Energy Statistics, developed by the UN, 2011

<https://unstats.un.org/unsd/energystats/methodology/documents/IRES-ru.pdf>

### 3.2.3. Formula of calculation

Formula of calculation separately for every energy source (energy product):

Stock at the end of the reference period (**Vsf.an**) equals the sum of the stock at the beginning of the period (**V inc.an**), the quantity of local production (**Vprod.**), and the import from outside the country (**Vimp.**) minus internal consumption (**Vcons.int.**) and minus export abroad (**Vexp.**) :

$$\mathbf{Vsf.an = V inc.an + Vprod.+ Vimp.- Vcons.int.- Vexp.}$$

### 3.3. Used classifications

Nomenclature of energy products recommended by the International Recommendations for Energy

Statistics (IRES), UN, 2011- <a href="https://unstats.un.org/unsd/energystats/methodology/documents/IRES-ru.pdf">https://unstats.un.org/unsd/energystats/methodology/documents/IRES-ru.pdf</a>
<b>3.4. Scope</b>
<b>3.4.1. Sector coverage</b>
The survey covers the units producing electricity and thermal energy, as well as other local energy sources, such as renewable energy sources (fire wood, agricultural combustible waste, etc.) photovoltaic energy, wind energy and consumers of energy resources which have legal personality.
<b>3.4.2. Statistical population</b>
The survey is organized based on the functional principle and implies the survey of all units which produce, import, distribute, and finally consume energy sources regardless of their main activity of the economic unit – legal entity.
<b>3.4.3. Geographical coverage</b>
The information is developed and disseminated without the data of the enterprises and organizations from the left part of the River Nistru and Bender municipality.
<b>3.4.4. Time coverage</b>
Time series are available including on the NBS site starting with 1997
<b>3.5. Level of disaggregation</b>
Data are available by types of fuel and energy in accordance to the IEA and Eurostat standards.
<b>3.6. Periodicity of dissemination</b>
Annually
<b>3.7. Timeliness</b>
According to the Statistical Activities Program, data are available in September after the reported year.
<b>3.8. Revision</b>
Data are final when disseminated for the first time.
<b>3.9. Period of reference</b>
The reported year is the period of reference.

<b>4. Data Collecting and Processing</b>
<b>4.1. Data source</b>
<b>4.1.1. Statistical surveys</b>
Data are collected based on the annual statistical survey according to the statistical report 1-BE “Energy Balance”.
<b>4.1.2. Administrative sources</b>
To identify and include the economic units importing/ exporting energy resources, in the survey, are used customs declarations provided by the Customs Service of the Ministry of Finance.
<b>4.1.3. Estimations</b>
For the first time, in the Energy balance, edition 2014 (recalculation beginning with 2010), were made estimation of the renewable energy consumption in households (biomass of agricultural waste, other households waste etc.) using Household Budget Survey data.
<b>4.2. Characteristics of the statistical survey</b>
<b>4.2.1. Objective and background</b>
The annual statistical survey “ <b>Energy Balance</b> ” aims to present the indicators on the formation of primary and integral energy resources, energy distribution and final consumption according to the main activities of the national economy.  For the first time, the energy balance was developed in 1990;  During 2010-2014, methodological changes were made, as well as changes for implementing the IEA and Eurostat standards.

<b>4.2.2. Statistical unit</b>
The statistical unit is the enterprise, organization with legal personality, budgetary institution.
<b>4.2.3. Circle of units covered in the survey</b>
Annually, the survey covers over 20 000 statistical units representing energy sources' producers, importers, distributors, and consumers.
<b>4.2.4. Survey periodicity</b>
Annually
<b>4.2.5. Data collecting</b>
The collecting method is self-registration performed by economic units and submission of the statistical report to the statistical territorial office – by March 31 of the year following the reported year.
<b>4.3. Processing and compilation of data</b>
<b>4.3.1. Validation of data</b>
Data are verified and analyzed from their quality point of view, especially in relation to their internal coherence, temporal coherence, as well as coherence with other data, at the first stage – by the territorial statistical body, and afterwards – at the central level by NBS. The control methods allow verifying: <ul style="list-style-type: none"> <li>– integrity of the data filled in the report;</li> <li>– compliance of the identification data;</li> <li>– observance of logical conditions for data correlation.</li> </ul> Controls are based on visual methods, as well as automated ones, by using soft applications.
<b>4.3.2. Compilation/extrapolation of data</b>
Compilation represents some simple summation, but also application of methods for transformation in different units of measurement using different conversion coefficients.
<b>4.3.3. Adjustments</b>
Not applicable.
<b>4.3.4. Quality assurance</b>
The quality of statistical data is assured by observing the Fundamental Principles of Official Statistics adopted by the UN General Assembly on 29 January 2014, as well as those set forth in the national Law on Official Statistics no. 93 of 26 May 2017.  In its activity of producing statistical information, NBS pays huge importance to ensuring high quality of data. In this respect, a number of measures for quality assurance are carried out at every stage of the statistical process: organization of statistical surveys, collection, processing, and development of statistical information.  To ensure the plenitude and quality of data presentation by the respondents included in the statistical surveys, the important efforts are undertaken  Errors, inconsistencies, and suspicious data are brought to light to be verified and corrected.  The primary data are verified and analyzed from internal coherence point of view (within the questionnaire), temporal coherence (with data from previous periods), with data of other similar units, as well as with data available from other statistical surveys and administrative data sources. The missing or inconsistent data are imputed, if needed.  To ensure the quality of the primary data, are organized meetings (seminars) with interviewers and respondents for explaining the definitions, the correct way to fill in the questionnaires, especially when they are modified or implemented.
<b>4.4. Data accuracy</b>
<b>4.4.1. Non-response rate</b>
Not applicable, as this statistical survey is carried out on exhaustive basis.
<b>4.4.2. Sampling errors</b>
Not applicable, as this statistical survey is carried out on exhaustive basis.

## 5. Comparability and Coherence

### 5.1. International comparability

International comparability is ensured, first of all, due to using the standardized nomenclature of energy products, presenting the energy balance in a format harmonized with the IEA and Eurostat format, as well as of the methodology for indicators' calculation.

### 5.2. Comparability over the time

Comparability over the time is not ensured.

### 5.3. Coherence with other statistics

Coherence with other statistics, including of the industrial production and external trade is ensured by balancing the centralized and primary data on economic units with considerable volumes of energy resources' production, import, and export collected in the respective survey against the data from bills of entry.

## 6. Institutional Mandate (normative-legal basis)

The NBS activity is based on respecting the Republic of Moldova Constitution, the Law on Official Statistics No. 93 dated 26.05.2017, other legislative and normative acts, NBS management decisions and orders.

The Law on Official Statistics regulates the organization and operation of the unique system of official statistics, establishing the general principles for collecting, processing, centralizing, diminishing, and stocking statistical information (art.1).

Art. 5 of the Law provides that the production of statistical information is based on respecting the following principles: impartiality, objectiveness, relevance, transparency, confidentiality, cost-efficiency etc.

Being the central statistical body, the National Bureau of Statistics is an administrative authority created under the Government for leading and coordinating the activity in the statistics area.

In accordance with Government Decision 935 of 24.09.2018 on the organization and operation of the NBS, the Bureau exercises the following tasks:

- 1) Coordinates the national statistical system on the development and production of official statistics;
- 2) Elaborates and implements strategies for the development of the national statistical system, annual and multiannual statistical programs;
- 3) Elaborates the normative and institutional framework necessary for the achievement of the strategic objectives in its field of activity, as well as the mechanisms for their implementation in practice;
- 4) Performs the management and control of the achievement in quality conditions of the programs and statistical plans adopted at central and regional level;
- 5) Harmonizes and aligns national statistical indicators, methodologies, methods and techniques with international regulations and standards;
- 6) Promotes the statistical culture in the society.

The legislative and normative acts ruling the activity of the NBS are available on its official page [www.statistica.gov.md](http://www.statistica.gov.md), under About NBS (<http://www.statistica.gov.md/pageview.php?l=en&idc=323&>)

## 7. Confidentiality

### 7.1. Principles

According to art. 19 of the Law on Official Statistics No. 93 dated 26.05.2017, producers of official statistics shall take all regulatory, administrative, technical and organizational measures to protect confidential data and prevent their disclosure.

Chapter VII of the above-mentioned law stipulates that the data collected, processed and stored for the production of statistical information are confidential if they allow the direct or indirect identification of the respondents. ) The following shall not be considered confidential:

- a) data that can be obtained from publicly accessible sources according to the legislation;
- b) individual data on address, telephone, name, type of activity, number of employees of legal entities and individual entrepreneurs;
- c) data referring to public enterprises, institutions and organizations funded from the budget, submitted at the request of the public administration authorities.

According to the Law on Official Statistics, art. 20, access to confidential information is granted to the persons who, according to their official functions, participate in the production of statistical information shall have access to individual data in so far as individual data are necessary for producing this information.

The same article stipulates that the access to individual data, which do not allow the direct identification of respondents, may be given for scientific survey projects, whose expected results do not refer to identifiable individual units, under the regulation approved by the central statistical authority.

Art. 23 (5) of the Law stipulates that the the statistical information cannot be disseminated to users if it refers to 1-3 statistical units.

## **7.2. Practical assurance of the confidentiality rules**

To ensure the protection of confidential statistical data in compliance with the Law on Official Statistics No. 93 dated 26.05.2017, the National Bureau of Statistics undertakes all the regulatory, administrative, technical, and organizational measures to protect the confidential statistical information and prevent its disclosure.

In compliance with the above-mentioned law, the employees of producers of official statistics, including temporary employees who, according to their official functions, have direct access to individual data shall be obliged to observe the confidentiality of these data during and after termination of employment.

Before being disseminated, the statistical data are verified if they meet the protection requirements set for confidential data. If the statistical data contain confidential information (see p. 7.1), they are not disseminated, but aggregated at the minimum available level which ensures the protection of data confidentiality.

## **8. Access to Information and Dissemination Format**

### **8.1. Access to information**

#### **8.1.1. Calendar of statistical publications**

Annually the Advance release calendar is developed by NBS.

#### **8.1.2. Access to the calendar of statistical publications**

The press release calendar is posted on the NBS official page [www.statistica.gov.md](http://www.statistica.gov.md).

#### **8.1.3. Access to statistical data**

According to the Law on Official Statistics No. 93 dated 26.05.2017, art. 23:

- a) Producers of official statistics shall be obliged to disseminate the statistical information within the deadlines specified in the programme of statistical works and in the press-release calendar.
- b) The dissemination of statistical information laid down in the programme of statistical works to all categories of users shall be made free of charge and under equal access conditions in terms of volume, quality and time of dissemination

The program of statistical work may be accessed on the web page [www.statistica.gov.md](http://www.statistica.gov.md), under About NBS / legislative and normative acts (<http://www.statistica.gov.md/pageview.php?l=en&idc=323&>)

The NBS web page [www.statistica.gov.md](http://www.statistica.gov.md) represents the most important information source for ensuring users' access to different statistical information and transparency about the NBS activity.

All the operative information, informative notes, time series, as well as the statistical publications developed by NBS are placed on its official web page.

### **8.2. Dissemination format**

#### **8.2.1. Operative information / Analytical notes**

The information concerning the energy balance data is published on the official web page of NBS: <http://www.statistica.gov.md> under Statistics by themes / Economic statistics / Energy statistics

### 8.2.2. Publications

Publications developed by NBS covering statistical data on energy balance:

- “Energy Balance of the Republic of Moldova” (*only in electronic format*)
- “Statistical Yearbook of the Republic of Moldova”,

Access to publications:

- in electronic format, on NBS official page [www.statistica.gov.md](http://www.statistica.gov.md), under Products and services / Publications <http://www.statistica.gov.md/pageview.php?l=en&idc=350&nod=1&>)
- on hardcopies – in the NBS library (more details at the address <http://www.statistica.gov.md/libview.php?l=en&idc=340&id=2400>)
- or may be bought from NBS office (more details on [www.statistica.gov.md](http://www.statistica.gov.md), under Publications <http://www.statistica.gov.md/pageview.php?l=en&idc=350&id=2219>)

### 8.2.3. Database/time series

Time series on energy balance indicators are placed:

- **Statistical databank** <http://statbank.statistica.md/>, under *Economic statistics / Energy resources*
- **NBS official page:** [www.statistica.gov.md](http://www.statistica.gov.md), under
  - *Statistics by themes / Economic statistics / Energy Statistics*
  - *Products and services / Publications*

### 8.2.4. Questionnaires/data sent upon request from international organizations

International questionnaires of the IES, UN, EEC, Eurostat, CIS, etc.

### 8.2.5. Request for additional data

NBS makes available for users additional statistical information beyond the data presented in the statistical publications, informative notes, operative information, as well as the data placed on the official web page in the limits of available information, in line with the Law on Official Statistics. Request can be sent personally, by post, by e-mail [moldstat@statistica.gov.md](mailto:moldstat@statistica.gov.md) or via online web form – [www.statistica.gov.md](http://www.statistica.gov.md) heading Products and services / Statistical data request

[http://www.statistica.gov.md/solicitare\\_informatii\\_statistice.php?l=en](http://www.statistica.gov.md/solicitare_informatii_statistice.php?l=en)

## 9. Useful References (links)

### 9.1. Accessibility of documentation on methodology

The methodology is available on the official page [www.statistica.gov.md](http://www.statistica.gov.md), under Metadata (<http://www.statistica.gov.md/pageview.php?l=en&idc=351&nod=1&>).

### 9.2. Accessibility of documentation on Evaluation Reports

The NBS assessment reports are available on the official page [www.statistica.gov.md](http://www.statistica.gov.md), under About NBS / Assessments and opinions on NBS / Assessment reports (<http://www.statistica.gov.md/pageview.php?l=en&idc=399&id=2739>).

### 9.3. Accessibility of information on user surveys

User surveys are available on the official page [www.statistica.gov.md](http://www.statistica.gov.md), under About NBS / Assessments and opinions on NBS / User surveys (<http://www.statistica.gov.md/pageview.php?l=en&idc=399&id=2740>).

### 9.4. Other useful references

IMF Special Data Dissemination Standard	<a href="http://www.statistica.gov.md/SDDS/?lang=en">http://www.statistica.gov.md/SDDS/?lang=en</a>
EUROSTAT database	<a href="http://ec.europa.eu/eurostat/data/database">http://ec.europa.eu/eurostat/data/database</a>
UNData database	<a href="http://data.un.org/Browse.aspx">http://data.un.org/Browse.aspx</a>
United Nations Economic Commission for Europe database	<a href="http://w3.unece.org/pxweb/Dialog/">http://w3.unece.org/pxweb/Dialog/</a>