COUNTRY PRACTICE IN ENERGY STATISTICS

Topic/Statistics: Statistics of fuel and energy consumption

Institution/Organization: State Statistics Service of Ukraine

Country: Ukraine

Date: April 13, 2012

CONTENTS

Abstract

Write a short abstract of the statistics, and try to limit it to one page. The purpose of the abstract is to give the reader a general overview of the statistics/topic. It should therefore include a brief overview of the background and the purpose of the statistics, the population, the sample (if relevant), the main data sources, and the main users of the statistics. The abstract should also mention what is the most important contribution or issue addressed in the country practice (e.g. the practice deals with challenges of using administrative data, using of estimation, quality control, etc.). If there are other elements that are considered important, please feel free to include them in the abstract.

Keep in mind that all relevant aspects of the statistical production will be covered in more detail under the different chapters in the template. Therefore, the abstract should be short and focused on the key elements. What the most important elements are can vary from statistics to statistics, but as a help to write an abstract you can use the table below. The table can either replace a text or can be filled out in addition to writing a short text.

Key elements	
Name of the statistics	
Background and purpose of the statistics	
Population, sample and data sources	
Main users	
Important contribution or issue addressed	
Other remarks	

1. General information

1.1. Name of the statistics/topic

The statistics/topic could either be a specific energy statistics (e.g. electricity production) or a topic within energy statistics (e.g. energy balances). For more information, please see Section III of the Instructions.

Statistics of fuel and energy consumption. Energy balances.

1.2. History and purpose

State when the statistics were first published.

The basic task of energy statistics is to obtain data on production, imports/exports, changes in stocks and amounts of fuel and energy consumption to compile energy balances of the country. In Ukraine, during the last 20 years, data on fuel and energy consumption were collected by Ukraine, region and branch of the national economy till 2002. Since 2002, data are collected by type of economic activity without compiling energy balances. The last energy balance was compiled in 1990 using the methodology of the former USSR. In 2011, for the first time Ukraine compiled (using the current reporting and administrative data) the 2010 energy balance in line with the methodology of International Energy Agency (IEA) and posted it on the SSSU web site.

Describe briefly the main purpose of producing the statistics and why it is relevant.

1.3. Reference period

State the time period the data are collected for.

At present, data are collected and produced for 2011.

1.4. Frequency

Specify how often the statistics are disseminated (e.g. annually, monthly, quarterly, etc.). If the statistics are not produced at regular intervals, state at what times they have been produced in the past and the main reasons behind the irregularities.

The state statistics offices collect data using the following frequency:

- data on fuel production are collected monthly, quarterly and annually
- data on imports/exports are collected monthly, quarterly and annually
- data on consumption and stocks of fuel are collected monthly (updates) and annually

1.5. Dissemination

Describe how the statistics are published (e.g. printed publications, online publications, online databases, etc.). If applicable, include the web address to the main website of the statistics.

Based on results of statistical surveys, tables giving data on fuel consumption and residues (oil, coal, gasoline, gas-oil and fuel oil) are posted on the SSSU web site.
Every year, statistical bulletins containing the results on fuel and energy uses are compiled: Residues and uses of energy materials and petroleum refinery products; Effectiveness of usage of fuel and energy resources.

Once every two years, the statistical publication *Fuel and Energy Resources* is compiled. The mentioned materials are posted on the SSSU web site (www.ukrstat.gov.ua) in section Publications/Energy Statistics.

1.6. Regional level

State the lowest geographical level (e.g. administrative regions, municipalities, etc.) for which the statistics are made available to the public.

The lowest level for publication of data on fuel and energy consumption is region.

1.7. Main users

Identify the key users of the data and the main applications. Include both internal and external users, and if possible try to distinguish between end users and others.

The main users of information about fuel and energy consumption are as follows: the Cabinet of Ministers of Ukraine, ministries and departments (the Ministry of Economy and Development, the National Bank of Ukraine, the Agency of Ecology and Investment, other public authorities), research and civil establishments, international organizations and other users.

1.8. Responsible authority

Write the name of the institution and department/office with the main responsibility for disseminating the statistics (e.g.: Statistics Norway, Department of Economics, Energy and the Environment).

In the national practice of Ukraine, there is no authority which is fully responsible for energy statistics. According to its competence, the SSSU is responsible for collection, development and dissemination of data on production, imports/exports and consumption of fuel and energy. Since 2010, the SSSU (the Department of Trade Statistics) started the compilation of energy balances of the country and posts them on the SSSU web site.
Also, partially selected ministries and departments collect information in line with their functional responsibilities (for example, the National Commission on Regulating Electric-Power Industry keeps track of prices and tariffs for selected type of fuel and energy, the National Joint-Stock Company *OilGas of Ukraine* monitors stocks of the natural gas in underground gas depositories, etc).

1.9. Legal basis and legally binding commitments

State the national legal basis for the data collection. Include a complete reference to the constitutional basis, and web address to an electronic version (e.g.: The Statistics Act of 16 June 1989 No. 54, §§2-2 and 2-3, http://www.ssb.no/english/about_ssb/statlaw/forskrift_en.html).

The collection, production and dissemination of data on statistics of fuel and energy consumption are based on the following normative legal documents:
Ukraine law On the State Statistics

- the state statistics offices independently make a decision on sources of statistical information taking into account the quality and timeliness of its presentation;
- the state statistical observations are conducted according to the Plan of the State Statistical Observations approved by the regulation of the Cabinet of Ministers of Ukraine;

Regulation 926-p of the Cabinet of Ministers of Ukraine dated September 6, 1999

- the government authorized to keep monthly statistical reporting on consumption and stocks of coal, oil, oil products and natural gas;

Regulation 1058-p of the Cabinet of Ministers of Ukraine dated on November 28, 2007

- Concept to compile energy balance has been approved;
- functions regarding the compilation of energy balance were placed on the state statistics offices;

Regulation 1376-p of the Cabinet of Ministers of Ukraine dated on October 30, 2008

- action plan and dates of implementation of work concerning the compilation of energy balance have been approved;

Regulation 203-p of the Cabinet of Ministers of Ukraine dated on March 11, 2011

- date for preparation of methodological instructions on energy balance compilation was fixed.

If the data collection is not based on a legal basis, give a short description of other agreements or volunteer arrangements.

If applicable, give reference to national and international commitments that are legally binding (e.g. EU statistical legal acts).

1.10. Resource requirements

Specify how the production of the statistics is financed (e.g. over the ordinary budget, project based support, financial support from other institutions or organization). If applicable, state the contracting entity (e.g.: Ministry, EU Commission, OECD). A contracting entity is any entity which is ordering a survey or the compilation of a statistics, and paying for it

The statistical surveys are undertaken due to budget financing within the framework of operations envisaged by the Plan of the State Statistical Observations which are annually approved by regulations of the Cabinet of Ministers of Ukraine. According to the legislation, respondents should submit data for free, fully, in line with a statistical report and timely.
To obtain data on statistics of fuel and energy consumption, the following human resources are involved:

- 5 persons ate the national level
- 445 persons at regional level

Specify the resource requirements for producing the statistics (e.g. man-labour days, number of workers involved in the statistical production process of the statistics/topic in question).

1.11. International reporting

List any international organizations and names of reporting schemes that the statistics are reported to. If available, also include the website where the reported data are published (e.g. International Energy Agency, Monthly Oil Statistics, UNSD, etc.).

The statistical service fills in the annual questionnaires of International Energy Agency, annual questionnaires of the UNECE, monthly questionnaires of JODI on oil and gas.

2. Statistical concepts, methodology, variables and classifications

2.1. Scope

Describe the scope of the statistics (e.g. the statistics cover supply and use of all energy products in Norway, classified according to International Standard Industrial Classification of All Economic Activities – ISIC).

The questionnaire on fuel consumption covers all respondents who are legal persons and who use or have fuel residues when operating.

2.2. Definitions of main concepts and variables

Describe the main concepts (e.g.: territory principle, resident principle, net calorific value, gross calorific value).

The territorial principle for data collection and processing.

Describe the main variables (e.g. how are the different energy products defined in the statistics? How are production, intermediate consumption, final consumption, transformation, feed stock, the energy sector, etc. defined?).

2.3. Measurement units

Describe in what unit the data is collected (e.g. physical unit (m3, metric tons), monetary unit (basic prices, market prices)). Describe in what unit the data is presented. Describe if the calorific values are collected (e.g. on a net vs. gross basis) and how they are used.

If applicable, describe the density of the energy product(s) and the estimated *thermal efficiency coefficients* of different energy products and consumer groups or by appliance. Thermal efficiency coefficient indicates the share of the energy products which is actually usable for end consumption. Descriptions of density and thermal efficiency coefficient could alternatively be put in an annex.

The collection and processing of data on consumption of basic types of fuel and energy by purpose of their usage use the physical units of measurement.
To convert the selected types of fuel into energy units (tonnes of standard fuel of coal equivalent) which are produced on average for Ukraine on the basis of indicators showing the results of fuel uses. The dissemination of energy balance data is made in the IEA format in tonnes of oil equivalent.

2.4. Classification scheme

Include references to relevant international and national standard classifications. If national, give a brief description of the standards. If available, include web addresses to the electronic version of the standards).

For statistical observations over energy statistics, the Classification of Type of Economic Activity (CTEA) is applied.
The Nomenclature of Industrial Products (hereinafter NIP) which was developed using the State Classifier of Products and Services (SCPS) based on CPA (Statistical Classification of Products by Type of Activity in the European Economic Community) taking into consideration the changes in CPA, 2002); PODCOM – List of Products for the European statistics of production (2000); Ukrainian

classification of commodities in foreign trade, which at the 6-digit level complies with the Harmonized System for description and coding of goods and the 8-digit level corresponds to the Combined Nomenclature of the EU as well as other national classifications (classifier of system for identification of units for measurement and recording, classifier of object of territorial and administrative division of Ukraine, classifications of organizational and legal forms of h economy).

2.5. Data sources

Give an overview of the different data sources used in the collection and compilation of the statistics/topic (e.g. household survey, enterprise/establishment survey, administrative data/registers, foreign trade statistics, production statistics and other primary/secondary data sources).

Examples of administrative sources/registers are: business register for enterprises and establishments, population register, land register, housing and building registers, tax registers, international trade registers, etc.

Sources of data on production and consumption of fuel and energy are reports of respondents (legal persons) which are submitted to the state statistics offices by the lace of their location;
sources of data on impost/exports are monthly information from the State Customs about international trade (on the basis of cargo customs declarations);
Administrative data are information from the National Joint-Stock Company *Oilgas of Ukraine* on stocks of natural gas.

2.6. Population

Describe the entire group of units which is the focus of the statistics (the population).

The observation unit for data on production and consumption of fuel and energy is local unit.

Specify the following statistical units:

- Reporting unit
- Observational unit
- Analytical unit

Examples of different kind of statistical units include: enterprise, enterprise group, kind-of-activity unit (KAU), local unit, establishment, homogeneous unit of production.

In most cases the reporting unit, observational unit and analytical unit are identical, but there are examples where this is not the case. In electricity statistics, you may find that energy companies (the reporting unit) provide data about different consumers like the individual household or manufacturing company (the observational unit). The analytical unit may be a group of energy consumers, defined by the ISIC.

2.7. Sampling frame and sample characteristics

Describe the type of *sampling frame* used in the collection and compilation of the statistics (e.g. list, area or multiple frames). A sampling frame is the source material or device from which a sample is drawn. Note that the sampling frame might differ from the population.

The SSSU undertakes complete enumerations.

For each survey(s) used for the compilation of the statistics, specify the *sampling design* (e.g. random, stratified, etc.). Describe the routines employed for updating the sample. Include information about the sample size, and discuss to what extent the sample covers the population (e.g. energy consumption in the sample compared to total energy use by the population).

Note that chapter *2.7: Sample frame and sample characteristics* may overlap with chapter *3.4: Grossing up procedures.*

2.8. Collection method

For each survey used for the compilation of the statistics/topic, describe how the data are collected (e.g. face-to-face, telephone, self-administered, paper and internet-based questionnaires, or administrative data and registers).

For each survey used to compile statistics on production and consumption of fuel and energy, the paper and electronic questionnaires are employed.

2.9. Survey participation/response rate

For each survey used for the compilation of the statistics/topic, specify the average response rate, or refer to response rates for specific surveys conducted.

For each survey of statistics on fuel and energy consumption, the average rate of responses is 90%.

3. The statistical production process

3.1. Data capture and storage

Describe how the data is captured and stored (e.g. if the respondent replies using Internet-based questionnaire, the received data are electronically transferred to the production database. Paper questionnaire responses are keyed manually to the production database).

If respondent replies using a questionnaire posted in the Internet, the obtained data in electronic format are transferred to database. The replies to a paper questionnaire are entered from keyboard to database. In Ukraine statistical practice, a majority is the replies to the paper questionnaires.

3.2. Data editing

Describe the regular routines employed for detecting and correcting errors. This may include:

- Manual routines for detecting and correcting errors
- Automatic error-detection (and correction)
- Micro- and macro editing procedures
- Data validation procedures
- Outlier identification
- Processes and sources used for quality controls

3.3. Imputation

Describe the principles for imputation and the assumptions that these principles are based on.
Note that this chapter may overlap with chapter *3.2: Data editing* and chapter *5.2: Accuracy*

3.4. Grossing up procedures

Describe how the population is divided into strata and what statistical models the estimations in the strata are based on. Describe how sub-indices are combined into aggregate indices and how uncertainty is estimated.

3.5. Analytical methods

Give a description of any analytical methods used to adjust the data (e.g.: seasonal adjustment and temperature adjustment). A more detailed description of the analytical method can also be included as an annex.

4. Dissemination

4.1. Publications and additional documentation

Describe the form of dissemination of the statistics/topics in question (e.g. printed publications, website, etc.). Please provide relevant website link(s) if available.

The official web site has available information about fuel and energy consumption:

- enquiry forms of the state statistical observations;
- instructions on how to fill in the reports compiled on the basis of enquiry forms of the state statistical observations over production and consumption of fuel and energy;
- results of the conducted statistical observations (tables, press-releases);
- official statistical editions (yearbooks, statistical publications, bulletins)

Give a complete reference to publicly available statistics databases where data from the statistics can be extracted. Include web addresses if available online.

Indicate whether you charge users for access to the statistics at any level of aggregation.

4.2. Revisions

Describe the current revision policies. E.g.: Is historical data revised when new methodology, new definitions, new classifications etc. are taken into use? Is the data continuously revised, or is the data revised at certain points in times (e.g. every third year, annually, etc.)?

The statistical data revisions and adjustments are made if respondents submit unreliable information.
When making changes in the national statistical classifications used to compile data on statistics of consumption, the revisions and adjustments of time series are made.

If applicable, describe any major conceptual or methodological revisions that have been carried out for this statistic/topic in the past.

4.3. Microdata

Describe how microdata are stored.

The annual data are stored on paper and placed in the archives for persistent storage while electronic data are stored during 5 years.

Specify if microdata are available for scientific and/or public use. If so, describe under what conditions these are made available.

4.4. Confidentiality

Describe the legal authority that regulates confidentiality, and what restrictions are applied to the publication of the statistics.

The confidentiality of data is regulated by law on statistics.

Describe the criteria used to suppress sensitive data in statistical tables (cell suppression).

Describe how confidential data are handled.

Describe any confidentiality standards that go beyond what is legally required.

5. Quality

5.1. Relevance

State to which degree the statistical information meet the real needs of clients/users.

5.2. Accuracy

State the closeness of computations or estimates to the exact or true values that the statistics were intended to measure.

Measurement and processing errors
Discuss the measurement and processing errors that are relevant for the statistics. Try as far as possible to give an estimation of the size and scope of the errors.

Non-response errors
State the size of the unit non-response and the item non-response, distributed by important variables in the population (e.g. region, industry). Consider if the non-response errors are systematic, and if so, describe the methods used to correct it. Indicate whether the effects of correcting non-response errors on the results have been analysed, and, if so, describe them.

Sampling errors
Discuss the size of the sampling errors. Compare the population and sample with regards to important properties (e.g. coefficient of variance).

Other sources of error
Discuss other sources of errors that might be relevant for the statistics. E.g.: Model assumption errors, coverage errors

5.3. Timeliness and punctuality

Specify the time between the end of the reference period and publication.
If the statistics are published both as preliminary and final figures, specify the time between publication of preliminary and final figures. You should also point out whether the publication date is set according to certain rules (e.g. advance release calendar, a specific day or prior to other publications).

The releases of data are made according to the dates which are envisaged by the Plan of the State Statistical Surveys.

Point out if there have been any major discrepancies between the planned publication date and the actual publication date in recent years. If so, state the length of this discrepancy and its cause.

5.4. Accessibility

Describe how easily accessible the statistics are. In particular, is there an advance release calendar to inform the users about when and where the data will be available and how to access them?

Are metadata and other user support services easily available? Are there particular groups that don't have access to the published statistics (e.g.: visually disadvantaged)?

The SSSU web site has the plans and schedules of data releases. Access to metadata can be obtained via the SSSU web site.

5.5. Comparability

Discuss the comparability of the statistics over time, geographical areas and other domains.

Comparability over time

Discuss comparability over time and include information about whether there have been any breaks in the time series of the statistics and why. Also describe any major changes in the statistical methodology that may have had an impact on comparability over time.

Data on fuel and energy consumption are compared in time, by region; by type of economic activity since the implementation of developments by CTEA from 2002.

Comparability over region

Discuss comparability over geographical areas, and include information about whether the statistics are comparable to relevant statistics published by other countries and/or international organisations.

Comparability over other domains

Discuss comparability over domains, and include information about whether the statistics are comparable between different industries, different types of households etc.

5.6. Coherence and consistency

Discuss the coherence/consistency between preliminary and final figures.

Discuss the coherence/consistency between monthly, quarterly or yearly statistics within the same subject area. Can the results of different frequencies for the same reference period be combined in a reliable manner?

Discuss the coherence/consistency with other related statistics (also those produced by other institutions/organisations on the same subject).

6. Future plans

Are there any current or emerging issues that will need to be addressed in the future? These could include gaps in collection, timeliness issues, data quality concerns, funding risks, confidentiality concerns, simplifications to reduce respondents' burden etc.?

Some indicators that are showed in the state statistical observations are not fully present a comprehensive picture of distribution and consumption of energy (particularly, statistical recording of energy resources consumption and energy balance compilation need to be improved).
One of the problems pertaining to the collection of statistical data is lack of sources of data on consumption of fuel and energy by household sector, farmers and businesses with the low level of consumption, resident, public and commercial buildings that leads to incomplete database required to compile indicators for a system of energy balances in the country.
There is a plan to improve the nomenclature of fuels according to the new version of the 2010 CTEA and Statistical Classification of Products (SCP) harmonized with standard European one (CPA).
The transition from complete enumerations towards the sample methods of survey;
There is a need to solve the matter regarding the development and implementation of the state standards for coal harmonized with the relevant international standards which are in the sphere of competence of the Ministry of Coal Industry.
It is necessary to continue to study international (European) methodology for energy statistics for compilation of energy balance of the country.

Annexes

Illustrations and flowcharts

Illustrations and flowcharts are useful to summarize information and to get a better overview of the statistical production process. Illustrations and flowcharts can either be places in annexes or be included under relevant paragraphs in the template.

E.g.:

- A conceptual flowchart which illustrates the flow of data in the production of the statistics.
- A flowchart which illustrates the main tasks in the production process and the dependency between them.

Time schedule

Include a time schedule for the different phases of the statistical production process. The statistical production process *may* be divided into the following phases. Phase 1-3 may only be relevant for when a new statistics/survey is set up.

1. **Clarify needs** (e.g. map users needs, identify data sources)
2. **Plan and design** (e.g. plan and design population, sample size, how to analyze and edit data)
3. **Build** (e.g. build and maintain production system, test production system)
4. **Collect** (e.g. Establish a frame, draw the sample, collect data)
5. **Edit** (e.g. identify and code micro data, edit data, imputation)
6. **Analyse** (e.g. quality evaluation, interpret, analyse)
7. **Disseminate** (e.g. publish data, user contact)

Questionnaires

Include the complete questionnaire(s)/survey form(s) used

Example of publication tables

Include an example of a typical table published for the statistics. Include web addresses if available online.

Detailed description on analytical methods

If relevant, a detailed description of analytical methods used in the statistical production (like seasonal adjustment, temperature adjustment etc.) may be described in an annex. A short description can also be included in chapter 3.5: Analytical methods or under other suitable chapters.