

COUNTRY PRACTICE IN ENERGY STATISTICS

Topic/Statistics: Electricity Consumption

Institution/Organization: Sustainable Energy Authority of Ireland (SEAI)

Country: Ireland

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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.

This data collection is a survey of all Electricity Suppliers in Ireland and is conducted to obtain Electricity Final Consumption statistics on an annual basis as required for the national Energy Balance and under the European Energy Statistics Regulation of 2008, no.1099.

This survey was introduced for 2003. Before 2003 Ireland had one Electricity supplier so data was provided by them.

SEAI took over this data collection in 2002 from the Department of Communication, Energy and Natural Resources.

Key elements	
Name of the statistics	Electricity Consumption
Background and purpose of the statistics	<p>This survey was introduced for 2003. Before 2003 Ireland had one Electricity supplier so data was provided by them.</p> <p>SEAI took over this data collection in 2002 from the Department of Communications, Energy and Natural Resources.</p>
Population, sample and data sources	<p>The electricity supplier survey is a business survey of all of electricity suppliers in Ireland.</p> <p>The list of companies used to define the population frame for the survey are identified by the Commission for Energy Regulation which is the independent body responsible for overseeing the liberalisation of Ireland's energy sector.</p>
Main users	<p>Irish Government bodies including Department of Communications, Energy & Natural Resources, Department of the Environment & Local Government, Department of Transport and the Environmental Protection Agency</p> <p>EUROSTAT</p> <p>International Energy Agency</p> <p>Researchers</p> <p>Media</p>

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.

Electricity Consumption

1.2. History and purpose

State when the statistics were first published.

Energy Balances are available at least as far back as 1972

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

The data populates Ireland's Energy Balance and any international questionnaires. It is a vital input to meeting reporting obligations, for advising policy makers and informing investment decisions.

1.3. Reference period

State the time period the data are collected for.

Reference period for the electricity supplier survey is annual and the data are requested month +1 from reference period.

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 statistics are disseminated annually in Ireland's Energy Balance and international questionnaires. They are also available annually through EUROSTAT under the Energy Statistics Regulation of 2008, no.1099.

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.

The Energy Balance is published online in PDF and Excel format and can also be downloaded via the Energy Statistics databank. It is also contained in a number of publications.

http://www.seai.ie/Publications/Statistics_Publications/

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.

National level

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.

Irish Government bodies including Department of Communications, Energy & Natural Resources, Department of the Environment & Local Government, Department of Transport and the Environmental Protection Agency
EUROSTAT
International Energy Agency
Researchers
Media

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).

Sustainable Energy Authority of Ireland

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).

Under the European Communities (Energy End-use Efficiency and Energy Services) Regulations 2009, (S.I. No. 542 of 2009), SEAI may request that an energy supplier provide to it, not more than once each year, aggregated statistical information on that energy supplier's final customers, including such detail and in such format as SEAI may specify, Part 2, 6 (1)-(3). These Regulations came into force in December 2009. <http://www.attorneygeneral.ie/esi/2009/B27331.pdf>

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

Not relevant

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

Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics

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

Ordinary budget, Department of Communications, Energy & Natural Resources

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).

3 persons in the Energy Policy Statistical Support Unit

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.).

EUROSTAT <http://epp.eurostat.ec.europa.eu/portal/page/portal/energy/introduction>
International Energy Agency <http://www.iea.org/stats/index.asp>
UN Statistics Division <http://unstats.un.org/unsd/energy/default.htm>

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 statistics cover consumption of electricity in Ireland and use the following classifications:

European industrial activity classification (NACE Rev 2) for industry sub sector breakdown in the Energy Balance
IEA classification for industry sub sector breakdown in the annual questionnaire

2.2. Definitions of main concepts and variables

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

National territory. Data are collected in net energy units (gigawatt hours).

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?).

Electricity sales broken down by market sector

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.

Data are collected from the electricity suppliers in net energy units (gigawatt hours).
The data are presented in net energy units (kilo-tonne of Oil Equivalent) in the Energy Balance

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).

European industrial activity classification (NACE Rev 2) for industry sub sector breakdown in the Energy Balance
http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-RA-07-015

IEA classification for industry sub sector breakdown in the annual questionnaire
<http://www.iea.org/stats/defs/origins/industry.asp>

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.

Annual business survey of electricity generators

2.6. Population

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

The electricity supplier survey is a business survey of all of the main electricity suppliers in Ireland.

The list of companies used to define the population frame for the electricity supplier survey are identified by the Commission for Energy Regulation which is the independent body responsible for overseeing the liberalisation of Ireland's energy sector.

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.

Reporting and observational units

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.

Not relevant as all electricity suppliers are surveyed

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*.

The list of companies used to define the population frame for the electricity supplier survey are identified by the Commission for Energy Regulation (CER) which is the independent body responsible for overseeing the liberalisation of Ireland's energy sector. CER are to inform SEAI of any new entrants to the market.

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).

Data are collected by questionnaires which are sent annually via email.

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.

There is unit non-response in some instances for the electricity supplier survey. If data are available from another source, this is used instead. Alternatively data are estimated until there is a response.

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).

Completed questionnaires are normally received via email and manually transferred to the production database which is in the form of an Excel spreadsheet

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

The sum of the Total Final Consumption data from the suppliers is our “bottom-up” approach for electricity data collection, and is compared to the “top-down” electricity generated and imported figures provided by the transmission system operator (TSO). In the case of a large statistical difference all data would be investigated further. Any major TFC changes between years would also be double-checked with the data provider.

The data received can be compared to a number of other sources.

- Electricity sales are collected twice annually from the same electricity suppliers for the collection of electricity prices under European Council Directive 90/377/EEC Transparency of Gas and Electricity Prices. The sum of the sales should be close to or equal the annual survey figures. If there is a discrepancy, this can be queried with the suppliers.
- The Commission for Energy Regulation publish an Electricity and Gas Retail Markets Annual Report. Sales for the larger electricity suppliers are identified in this report, with the smaller ones aggregated. These sales should be close to or equal the annual survey figures. If there is a discrepancy, this can be queried with the suppliers.

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*

Not relevant

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.

Estimation is used for the agricultural sector electricity total as actual data are not available.

The Industrial sub-sectoral breakdown is modelled using the Census of Industrial Production data to determine the percentage of electricity in each industrial sub-sector. The overall total is provided by the Electricity Suppliers.

A separate survey of sites using CHP (see CHP country practice report) provides autoproducer electricity consumption on site from CHP Plants and this is added to the sales figures from the Electricity Suppliers to give a more accurate total.

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.

Not relevant

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 Energy Balance is published online in PDF and Excel format and can also be downloaded via the Energy Statistics databank. It is also contained in a number of publications.
http://www.seai.ie/Publications/Statistics_Publications/

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

Energy Statistics Databank <http://www.cso.ie/px/sei/database/sei/sei.asp>

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

There is no charge

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.)?

There is no formal revision policy drafted. If the data are revised the update is submitted to the relevant reporting organisation, and the online Energy Balance is updated. A revision may be due to the result of a non-response or late response. The data may also be revised due to new methodology or if an error has been identified.

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

The validation of the data against the electricity sales collected under the European Council Directive 90/377/EEC Transparency of Gas and Electricity Prices was introduced in recent years.

The validation of the data against the electricity sales collected under by the Commission for Energy Regulation was introduced for 2011 data.

4.3. Microdata

Describe how microdata are stored.

Microdata are stored in an Excel database

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

These microdata are not currently available for scientific and/or public uses

4.4. Confidentiality

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

Confidentiality rules as provided by Ireland's national statistics body, the Central Statistics Office (CSO):

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

Primary confidentiality

A category is confidential if any one of the following conditions applies:

- (i) there are less than three units
- (ii) one unit accounts for more than 80% of the total (dominance rule 1)
- (iii) two units account for more than 90% of the total (dominance rule 2)

Describe how confidential data are handled.

Confidential data are not published.

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

Confidential data may be published if written approval is received from the affected unit/s.
Confidential data may be published if it is already in the public domain

5. Quality

5.1. Relevance

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

Although no formal user surveys have been carried out, the statistical information mostly meets 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.

As all electricity suppliers are surveyed, and validation is carried out with two difference sources, the methodology and validation used provide very accurate figures.

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.

Any significant changes from previous years are noted and the respondent is asked to clarify why there is a substantial difference.

A significant statistical difference between the electricity sales data and the electricity generated/supplied would be investigated to ensure all data was reported accurately.

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.

There have been some non-response errors of these surveys to date.

In the case of a non-response, the measures used to reduce this would be:

- Reminder emails sent and phone calls made to encourage completion of the survey.

If there is no response the data can either be estimated based on their previous survey return or completed using the data from other sources, once these are available.

Sampling errors

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

There are no sampling errors as all electricity suppliers are surveyed

Other sources of error

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

Not relevant

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).

Reference period for the electricity supplier survey is annual and the data are requested month +1 from reference period.

If the surveys have not been returned in time for the provisional Energy Balance, which is published in March, then data from the European Council Directive 90/377/EEC Transparency of Gas and Electricity Prices can be used. The Electricity and Gas Retail Markets Annual Report is usually not available until the summer so there may be revisions for the finalised Energy Balance, which is published in October.

Census of Industrial Production data are used for the industry breakdown and this can be published 2 years after the reference year. As the industry breakdown is based on the most recent CIP data this means that a number of years may be revised together.

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.

No major discrepancies between the planned publication date and the actual publication date in recent years

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 FAQ which can be found on the SEAI website gives details on where the data can be found and when to expect the provisional and finalised Energy Balance to be published.
Metadata are not publicly available
The website has not yet been adjusted for visually disadvantaged users

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.

Energy Balance data are available from 1972 for Ireland. However, data are only comparable from 1990.

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.

Data submitted to international organisations is comparable to other countries

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.

Not relevant

5.6. Coherence and consistency

Discuss the coherence/consistency between preliminary and final figures.

There may be a discrepancy between the provisional and final Energy Balance due to late survey returns. This may also be because the validation carried out between the Energy Balance and other data sources cannot be done until after the provisional balance has been published.

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?

Not relevant as only annual figures are collected

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

The data received can be compared to a number of other sources.
- Electricity sales are collected twice annually from the same electricity suppliers for the collection of electricity prices under European Council Directive 90/377/EEC Transparency of Gas and Electricity Prices. The sum of the sales should be close to or equal the annual survey figures.
- The Commission for Energy Regulation publish an Electricity and Gas Retail Markets Annual Report. Sales for the larger electricity suppliers are identified in this report, with the smaller ones aggregated. These sales should be close to or equal the annual survey figures.

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.?

A joint CSO/SEAI Business Energy Use Survey was introduced recently in order to address energy consumption in the commercial and industry sectors. The survey results are not available yet but will eventually replace the CIP when calculating the breakdown of the industry sub-sectors.

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 placed 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.

**Sustainable Energy Authority of Ireland
Electricity Supplier Survey**

Company Name:

Market Sector	Electricity Sales (GWh)	Ratio (%)
Residential		
Industry		
Commercial		
Agriculture		
Transport*		
Total	0	0%

* Electricity used for transport, not in commercial offices of transport companies.