COUNTRY PRACTICE
IN ENERGY STATISTICS

Topic/Statistics:
Energy use in manufacturing

Institution/Organization: Statistics Finland

Country: Finland

Date: October 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	Energy use in manufacturing
Background and purpose of the statistics	The statistics on energy use in manufacturing describe the use of energy in manufacturing by energy source, industry and region. Data on energy use in manufacturing have previously been collected in connection with the data collections for general and commodity statistics concerning establishments of manufacturing enterprises and the data have been published since 1954 in publications of statistics on manufacturing. The data are available starting from 1990. Over the 1990 to 2000 period, time series on energy use in manufacturing were produced under a project financed by the Ministry of Trade and Industry. The data collection for the statistics was revised starting from the data for 2007.
Population, sample and data sources	The data on energy use in manufacturing are collected with an annual inquiry from all establishments deemed as significant from the point of energy consumption, and from establishments using unusual fuels. Collecting of data from other enterprises employing at least 10 persons is based on sampling. Data on the use of energy in 2007 and 2011 are also collected from a sample of establishments of enterprises employing fewer than 10 persons. The establishments of the sampled enterprises may vary from year to year. Data available from other sources, such as the energy production inquiry, the Environmental Administration's VAHTI system, and files of the data collected by the Energy Market Authority, the Finnish Energy Industries and the Finnish Forest Research Institute are also utilised in the data collection.

Main users	Data from energy statistics in manufacturing are needed by enterprises and their organisations, researchers and public administration.
Important contribution or issue addressed	The statistics utilises many data sources.
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.

Energy use in manufacturing

1.2. History and purpose

State when the statistics were first published.

Data on energy use in manufacturing have previously been collected in connection with the data collections for general and commodity statistics concerning establishments of manufacturing enterprises, and the data have been published since 1954 in publications of statistics on manufacturing.

Detailed data on energy use in manufacturing are available starting from 1990. Over the 1990 to 2000 period, time series on energy use in manufacturing were produced under a project financed by the Ministry of Trade and Industry. The data collection and the compilation methods of the statistics were revised starting from the data concerning 2007. In 2007, data on energy use were also inquired from a sample of establishments of enterprises employing under 10 persons. Their energy use had not been examined before. The inquiry to small establishments of enterprises was repeated in statistical year 2011.

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

The Aim of the statistics is to describe the use of energy in manufacturing by energy source, industry and region. Final resurts are used for desision making and for backround information or research data for the business world and research institutes.

1.3. Reference period

State the time period the data are collected for.

1st of January to 31st of December

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.

Yearly

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 statistics are published in online and printed publications and in online database. See chapter 4.1.

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.

NUTS 3, 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 data are used by Eurostat, the Statistical Office of the European Communities, and by the International Energy Agency of the OECD, as well as in public administration and decision-making in Finland. The users of the statistics also include the business world and research institutes.

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).

Statistics Finland, Unit of Business Structure, Enviroment and Energy

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 legal basis for the data collection of the statistics is the Finnish Statistics Act. (280/2004).

More information is available at Statistic Finland's web site:

http://tilastokeskus.fi/meta/lait/index_en.html

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

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

The statistics are based on the European Union's Regulation on energy statistics (EC) No 1099/2008 which entered into force at the beginning of 2009:

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:304:0001:0001:EN:PDF.

More information is available at Statistic Finland's web site:

http://tilastokeskus.fi/meta/lait/index_en.html

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

Funding is from the Statistic Finland's budget.

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).

One Statistician 7-8 months per year, one Senior Statistician half of working time. Application Specialist from IT unit participates in data processing.

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.).

IEA - Eurostat - UNECE: Annual Energy Questionnaire: Electricity & Heat , Natural Gas, Renewables and Wastes, Coal, Oil

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 on energy use in manufacturing cover the industries mining and quarrying as well as manufacturing (industries B and C in Standard Industrial Classification TOL 2008).

The inquiry collects volume / energy content data on fuels and electricity used by enterprises' establishments. Also data on purchased/received and sold/delivered electricity and heat is collected.

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 main concepts are described on web pages of the statistics:

http://tilastokeskus.fi/til/tene/kas_en.html

Coal

Coal has been formed from plant residues hundreds of millions of years ago. In energy statistics coal refers to the energy sources of charcoal (1211,1212), lignite (1221), other coal (1222,1228,1229), coke, and blast furnace and coke oven gases obtained as a by-product from the production of iron.

Electricity

Statistics on the use of electricity in manufacturing are produced in two ways. Total energy consumption in manufacturing is calculated from data on net purchases (purchased/received -

sold/delivered) by establishment. Total amount of electricity used by establishments is calculated from data collected with an inquiry about energy use in manufacturing.

Gigawatt hour

Gigawatt hour (GWh) is a unit of energy used to express the amount of energy, i.e. electricity and heat. 1 GWh = 1,000 MWh = 1,000,000 kWh = 1 GWh = 3.6 TJ

Heat

Total energy consumption in manufacturing is calculated from data on net purchases (purchased/received - sold/delivered) of district heat and heat/steam used in industrial processes, i.e. heat obtained from outside for own use.

Petajoule

Petajoule (PJ) is a unit of energy used for expressing the energy contents of fuels and other energy sources. 1 PJ = 1,000 TJ; 1 TJ = 0.278 GWh

Register of Enterprises and Establishments

Statistics Finland's Register of Enterprises and Establishments is a basic statistical register that covers all enterprises, corporations (inc. public corporations) and private practitioners of trade that are liable to pay value added tax, or are employers or entered into the preliminary tax withholding register. In 2002, the Register of Enterprises and Establishments contained approximately 320,000 actively operating enterprises and corporations and 384,000 establishments.

However, only farms that act as employers or pay value added tax on the proceeds from their business activity are entered into the Register of Enterprises and Establishments. Included are also public authorities, i.e. all government agencies, municipalities and joint municipal boards, and their establishments.

Data on the structures of enterprise groups are maintained in the Enterprise Group Register. The Enterprise Group Register covers the largest groups operating in Finland as well as their group heads and subsidiary and associate companies.

Data for Statistics Finland's Register of Enterprises and Establishments are obtained from two main sources: Tax Administration's registers and own surveys.

Maintenance of the Business Register is decreed in the EU regulation on Business Registers (EEC 2186/92).

Total energy use in manufacturing

Total amounts of fuels used in manufacturing and amounts of electricity and heat purchased from outside for own use (net purchases, i.e. purchased/received - sold/delivered). Thus the amounts of energy are commensurable and when summed up describe the total consumption of energy in a given industry.

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?).

Use of energy source in industrial processes, heating and machines (volume and energy content).

Purchased/received electricity and heat

Sold/delivered electricity and heat

Energy Source

Definitions for classification of fuels and energy sources:
http://tilastokeskus.fi/tup/khkinv/khkaasut_polttoaineluokitus_maaritelmat_2011_en.pdf

Industry

Standard Industrial Classification TOL 2008:
http://tilastokeskus.fi/meta/luokitukset/toimiala/001-2008/index_en.html

Region

The country is divided into regions for the development of areas and for the planning of their use. A region is an area in which the municipalities form an operationally and economically functional whole for the development of the area. The Government determines the number, areas and names of regions after hearing the regional councils and municipalities concerned.

From September 1997 the areas of regions and the regional councils representing them are exactly the same.Regional councils are responsible for supervising the interests of the municipalities in their area. Nowadays they are also in charge of regional development of their territory.

The official NUTS regional classification of Eurostat is recommended to be used as the primary regional division in statistics. NUTS 3 level is equivalent to Finnish regional division.
The NUTS Regulation of EU requires that the NUTS 3 division will be in force for at least three years from the approval of the regulation despite national changes to the division into regions.

http://tilastokeskus.fi/meta/luokitukset/maakunta/001-2012/index_en.html

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 is collected in the following units:
Fuels: litres, kilogrammes, tonnes, tonnes (dry matter), cubic metres, 1000 cubic metres / gigajoules, megawatt hours
Electricity and heat: megawatt hours

Data is presentedted in the following units:
terajoules, 1000 terajoules, gigawatt hours

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).

The following official classifications of Statistics Finland are used in the statistics on energy use in manufacturing: regional classifications, standard industrial classification and classification of fuels. Classifications are available at Statistic Finland's website.

Regions: http://tilastokeskus.fi/meta/luokitukset/maakunta/001-2012/index_en.html

Standard Industrial Classification TOL 2008:
http://tilastokeskus.fi/meta/luokitukset/toimiala/001-2008/index_en.html

Fuel classification: http://tilastokeskus.fi/tup/khkinv/khkaasut_polttoaineluokitus.html

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.

The data source used to define the universe is the Register of Enterprises and Establishments (referred register is described at chapter 2.1 Definitions of main concepts and variable).

In order to lower the response burden, efforts will be made to also gather the data from other sources, such as the inquiry concerning heat and power production, the Environmental Administration's VAHTI (Government Information Security Management Board) database and from the material collected by the Energy Market Authority, the Finnish Energy Industries and the Finnish Forest Research Institute.

2.6. Population

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

The data on energy use in manufacturing are collected with an annual inquiry of establishments in NACE activity categories B (Mining and Quarrying) and C (Manufacturing). The inquiry is sample-based. The inquiry does not extend to activity D (Electricity, gas and water supply).

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.

Mainly reporting unit, observational unit and analytical unit are identical: establishment of enterprise. In environmental licence data of the Environmental Administration the observational unit is point source. In emissions trading data of the Energy Market Authority the observational unit is emission source. In the data of statistics on production of elecricity and heat the observational unit is factory site.

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 sample is drawn from Statistics Finland's Register of Enterprises and Establishments.

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 establishments drawn into the inquiry are divided into strata according to the significance of their energy use. The stratum of significant energy users comprises establishments that are large energy users as well as establishments that use fuels which only a few establishments use. One hundred per cent of the establishments in this stratum become selected into the sample. Medium-size energy users use less energy than significant energy users but are still establishments employing more than ten persons. Small energy users (mini enterprises/establishments) comprise establishments of enterprises employing under ten persons. In the sample survey, medium-size and small energy users are divided into strata by industry category (at 2-digit level) and region (regions of Åland and Lapland and the rest of the regions together). Simple random sampling is made within these strata and the sizes of the strata are determined by Neyman's allocation of the turnover of the establishments. This means that more establishments are drawn into the sample from the strata if there is large variation in the turnover of the establishments.

Estimation is done with simple Horwitz-Thompson estimator where the raising is performed by stratum in ratio of the establishments in the population to the establishments having responded to the inquiry.

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).

Establishments can respond to the inquiry on energy use in manufacturing via the Internet with an electronic questionnaire on Statistics Finland's website section on data collections by using the passwords and user IDs sent to them by post. The web pages of the inquiry also allow the questionnaire to be printed out and then filled in and posted or faxed back to Statistics Finland.

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.

Responce rates in this inquiry is yearly around 85 % from total of roughly 2200 establishments (when small energy users not included). In 2010 94,3 % of the respondents used Internet questionnaire.

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 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.

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 team responsible for the Statistics can transfer the data from the Internet questionnaire to the production database when required. Before data is verified, it is subjected to a number of verifications of logicality. For this purpose we have also introduced an application for examining erroneous or significantly deviating data. If critical errors are found the data are verified with the data supplier and then corrected.

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*

Automated imputation utilizes data of the previous year if the turnover of the company has changed less than 50%. If manual imputation is done, the turnover of the enterprise, the data of the previous year and economic trend in the industry is considered.

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.

See chapter 2.7 Sampling frame and sample characteristics. Uncertaintity is estimated using confidence intervals and variation coefficient.

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.

See chapter 3.2. Data editing.

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 results are published at Internet in Statistics Finland's web pages. Most recent publication can be found from:

http://tilastokeskus.fi/til/tene/index_en.html

The PDF-publications can be downloaded from:

http://tilastokeskus.fi/til/tene/tup_en.html

The data are included in the Statistical Yearbook of Finland and in the Energy Statistics yearbook published by Statistics Finland. These products are accompanied by a CD-ROM of their contents. Energy Statistics Yearbook 2012 will be published in electronic form on Statistic Finland's web pages.

Statistical Yearbook of Finland online service:

http://tilastokeskus.fi/tup/vuosikirja/index_en.html

Compilation assignments that are subject to a charge can be ordered from the collected data by detailed classification levels. Because the data describe business activity at the unit level, their use and disclosure are subject to general rules on confidentiality. The statistics compiled from the data are public under the condition that no individual establishment's data can be identified from them. Possible encryption of the supplied data is separately determined in each case.

The data are also included in Finnish Statistical Yearbook of Forestry published by Finnish Forest Research Institute. Besides, data are supplied to Eurostat.

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

http://pxweb2.stat.fi/database/StatFin/ene/tene/tene_fi.asp (thus far only in Finnish)

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

The data in Statistics Finland's web pages is free of charge. Special compilations, that are made according to the customer's needs, are subject to a 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.)?

In case of revisions new publication will be published with updated data. Also historical data will be published if revision affects on history.

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

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4.3. Microdata

Describe how microdata are stored.

Microdata are stored into statistics production database. Freezed data sets are stored on unix server.

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

Microdata are not available for scientific or public use. In case of compilation assignments encryption of the supplied data is separately determined in each case.

4.4. Confidentiality

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

Confidentiality of the statistics is regulated by the Statistics Act. See chapter 1.9. Legal basis and legally binding commitments.

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

The statistics compiled from the data are public under the condition that no individual establishment's data can be identified from them.

Describe how confidential data are handled.

rough classification, dominance of significant energy users considered, consent to publish sought

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

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5. Quality

5.1. Relevance

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

The statistics on energy use in manufacturing describes the use of energy in manufacturing by energy source, industry and region. Production follows EU's Regulation on energy statistics. Data are needed by enterprises and their organisations, researchers and public administration.

5.2. Accuracy

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

Uncertaintity is estimated using confidence intervals and variation coefficient.

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.

In case that energy is included in rental agreement or reported in monetary units volume data and energy content need to be estimated.

Rare fuels may not emerge in inquiry.

Sometimes data is not reported in the level of establishment of the enterprise, but many establishments are reported together.

Real caloric values can differ from default caloric values especially for wood fuels.

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.

Non-responce rate is around 15 %, non-responce error is estimated together with sampling errors.

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

The reliability of the statistics is affected by non-response and the over or underestimation of energy use in manufacturing which may follow from it. In addition, the inquiry on which the statistics are based assumes that all establishments using rarely used fuels are included. If this is not the case, the statistics underestimate the used amounts of these fuels.

Sampling errors are followed systematically. The correctness of the data of the statistics is assessed with a coefficient of variation. The coefficient of variation determines the relative deviation of the observation values, i.e. shows the percentage of standard deviation of the mean of observation values. If the coefficient of variation of a point estimate exceeds 40, the value is marked with an asterisk (*) in the table. Confidence interval of 95 per cent is calculated and published for each point estimate appearing in the table.

Due to the very small sample of the establishments which employ under ten persons, detailed tables may contain inconsistencies associated with a sample survey. For this reason, some table cells may receive the value 0 due to the sample survey. This means that no establishment has become selected into the sample, even though in reality some energy use may occur in the cells concerned.

Other sources of error

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

grossing up errors (estimation is done with simple Horwiz-Thompson estimator, see chapter 2.7 Sampling frame and sample characteristics)

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 data of the statistics on energy use in manufacturing describe the amount of energy used during the statistical reference year and they are published once a year. The data collection starts in January-February of the year following the statistical reference year. Final statistics are ready approximately 10 months from the end of the statistical reference year. The publication date is set according to schedule of respondents' and other data sources (when the data are available). Also, the publication date is set after the publication date of the statistics on production of electricity and heat.

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 discrepancies.

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)?

There is a release calendar for all statistical products published by Statistics Finland (http://tilastokeskus.fi/ajk/julkistamiskalenteri/index_en.html). Like the other statistics the statistics on energy use in manufacturing are published on its own web pages (http://tilastokeskus.fi/til/tene/index_en.html). The basic data are free.

Compilation assignments that are subject to a charge can be ordered from the collected data by detailed classification levels. Because the data describe business activity at the unit level, their use and disclosure are subject to general rules on confidentiality. The statistics compiled from the data are public under the condition that no individual establishment's data can be identified from them. Possible encryption of the supplied data is separately determined in each case.

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.

Detailed data on energy use in manufacturing are available starting from 1990. Over the 1990 to 2000 period, time series on energy use in manufacturing were produced under a project financed by the Ministry of Trade and Industry. The data collection and the compilation methods of the statistics were revised starting from the data concerning 2007. In 2007, data on energy use were also inquired from a sample of establishments of enterprises employing under 10 persons. Their energy use had not been examined before. In 2011 energy use of small enterprises/establishments was inquired anew.

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.

Spatial comparability within Finland and with other EU/IEA member states is ensured/supported by using standard concepts and classifications.

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.

Domains are fully comparable. However, the table on total energy use in manufacturing describes the total amounts of fuels used in manufacturing and the amounts of power and heat purchased from outside for own use (net purchases, i.e. purchased/received - sold/delivered). Thus, the amounts of energy are commensurable and when summed up describe the total consumption of energy in a given industry. In addition, the table on total electricity consumption shows statistics on the total amount of electricity consumed at establishments.

5.6. Coherence and consistency

Discuss the coherence/consistency between preliminary and final figures.

Only final figures are produced.

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?

Only yearly statistics are published.

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

Apart from the data on the energy use of manufacturing establishments, the data of the statistics on energy use in manufacturing also describe the consumption of fuels in own power plants. Data on the energy consumption of power plants located at the same manufacturing site but classified under the activity category of electricity, gas, steam and air conditioning supply (D) are not included in these figures. Statistics Finland's statistics on heat and power production cover the energy production and fuels of both energy industries and industrial power plants.

Data on fuels used in the production of electricity and sold heat are not included in final energy consumption in manufacturing in the international energy statistics published by Eurostat and IEA. Thus, the data in international statistics on final energy consumption in manufacturing deviate from the figures published in Finland.

Consistency with the statistics of the Finnish Energy Industries and the Finnish Forest Research Institute is supported by utilizing the data they have collected.

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.?

To reduce response burden we are seeking possibilities to use more administrative data in data compilation. In 2011 fuel consumption of enterprises/establishments belonging to emissions trade system was not inquired, but the data collected by the Environmental Administration and the Energy Market Authority was used instead. Possibility to extend the use of data of the Environmental Administration is seeked. Cooperation with data providers is important. Another goal is to improve grossing up procedure (for example by taking outliers into account better, also increasing the number of strata could be considered).

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.