



Good examples of quality reports received from Member States in the area of energy statistics

The first quality reporting exercise in the field of European energy statistics was launched with the approval of the standard quality report (QR) template in the Energy Statistics Working Group meeting in 2010. In order to reduce burden on Member States, the standard template¹ consisted of:

1. A descriptive section (part A) to be filled for all data collections fulfilling requirements of Regulation (EC) No 1099/2008
2. A detailed section (part B) to be filled only for the collections deemed essential to fill the monthly and annual questionnaires.

Eurostat asked Member States officially to fill the template with the necessary information by the end of 2011. In the Energy Statistics Working Group meeting in 2012 Eurostat reported on the progress of the exercise and asked those Member States which still did not send a complete QR to do so without delay.

Following the analysis, several countries were contacted to complete or explain submitted information and many revised and improved their submissions.

It was observed that some Member States provided complete and very informative quality reports.

With the objective to use these examples as best practices for other countries, this document presents some of the above mentioned QR from certain Member States.

More particularly, the following examples are provided:

1. Slovenia – Annual statistical survey on the consumption of energy, fuels and selected petroleum products
2. Austria – Monthly natural gas survey
3. UK – Annual statistics on renewable energy
4. Germany – Monthly coal statistics
5. Spain – Annual coal statistics
6. France – Survey on the annual production of electricity (in French)

¹ The standard template, including instructions to fill it out, can be found in the Eurostat "Energy" website.

1. SLOVENIA – ANNUAL STATISTICAL SURVEY ON THE CONSUMPTION OF ENERGY, FUELS AND SELECTED PETROLEUM PRODUCTS

Methodology and Summary Quality Report on Energy Statistics Part A- General Information

Country: Slovenia

Year: 2010

1. Name of the data collection

Annual statistical survey on the consumption of energy, fuels and selected petroleum products (E-PE/L)

2. National body responsible

Statistical Office of the Republic of Slovenia, Litostrojska cesta 54, SI-1000 Ljubljana

3. Objective and history

The purpose of the annual statistical survey on the consumption of energy, fuels and selected petroleum products (E-PE/L) is to collect data on the consumption of energy, fuels and selected petroleum products, data on energy stocks at the end of the year and data on the net calorific values of consumer solid fuels, coke and waste in the industrial sector.

Statistics are available from the year 2003. The E-PE/L survey was introduced in 2005. Prior to this, the data were collected for 3 years in succession (2003, 2004 and 2005) on monthly level with the independent survey E-PE/M. Until 2005 the monthly survey was based on full coverage, the threshold being above 10 persons in paid employment. From 2005 onwards the decision applies that only those key units are monitored monthly that in 2003 and 2004 revealed 80 % consumption of an individual energy product within the observed SKD activity (field of activity, sub-activity). The remaining units were to report in the new annual survey E-PE/L. Thus from 2005 onwards only the data on annual consumption of energy products was published. There was a break in time series – from 2008 onwards a revised version of the Standard Classification of Activities has been used and the data for the previous years are not directly comparable.

4. Reference period, frequency and transmission deadline

Reference period: Year prior to the questionnaire date. Frequency: 1 year. Deadline for data transmission: until 22.02. of each current year.

Methodology and Summary Quality Report on Energy Statistics

Part B - Detailed information

5. Legal framework

National Statistics Act (OJ RS, No. 45/95 and No. 9/01)

Annual Programme of Statistical Surveys (OJ RS, No. 93/10)

6. Statistical concepts and method

6.1 Variables surveyed and derived

Energy and non-energy use, calorific value and stocks of the following energy products:

Electricity (purchased) (MWh), Hard coal and anthracite (t), Brown coal (t), Lignite (t),

Coke (t), Wood and wood wastes (t), Charcoal (t), Naphtha (t), Petroleum (t), Unleaded motor gasoline (for movable working machinery) (t; 1l=0.74 kg), Diesel fuel (for movable working machinery) (t; 1l=0.87 kg), Heating gas oil (t; 1l=0.87 kg), Heating oil, sulphur level below 1% (t; 1l=0.95 kg), Heating oil, sulphur level 1% or over (t; 1l=0.95 kg), Liquefied petroleum gas (propane, butane) (t; 1l=0.549 kg, 1t=1821 l), White spirit and other special petrol (t; 1l=0.74 kg), Lubricants (t; 1l=0.8 kg), Bitumen (t), Petrol coke (t), Natural gas (1000 Sm³; 1MWh=3.6 GJ), Heat energy (purchased hot water, steam) (GJ), Waste industrial oils (t), Waste tires (t), Waste animal fat (t), Waste edible oils (t), Geothermal energy (GJ), Bio gas (1000 Sm³), Other solid fuels (t), Other liquefied fuels (t), Other.

6.2 Type of data collection

The E-PE/L survey is a business sample survey.

6.3 Population frame and reporting unit

The source for determining the general sampling frame is the Business Register of Slovenia. All units with 20 or more persons in paid employment and units with less than 20 persons in paid employment, but with larger consumption of specific energy products, are included in it. The sampling frame for 2010 thus comprised 1,593 units from activity B (Mining and Quarrying), C (Manufacturing) and F (Construction).

6.4 Sample size and unit non-response rate

| Activity/Status | Adequate units | Response | Non-response | Non-response rate |
|-----------------|----------------|----------|--------------|-------------------|
| B | 19 | 18 | 1 | 5.26 % |
| C | 1,217 | 1,123 | 94 | 7.72 % |
| F | 262 | 250 | 12 | 4.58 % |
| Total | 1,498 | 1,391 | 107 | 7.14 % |

6.5 Classifications

In this survey Standard Classification of Activities (SCA 2008) is used – units registered in activities B (Mining and Quarrying), C (Manufacturing) and F (Construction). There are no other classifications used.

6.6 Compilation of the final data set, models and statistical estimation techniques used

In this survey there is no imputation of the missing data, as all the reporting units that fill in the questionnaire are contacted in case they failed to give all the data.

A general approach to assess the parameters based on a general sampling frame is the use of weights, which in our case, where only non-response units appear, are equal to:

$$w_{\text{NON-RESP}} = \frac{\text{NUMBER OF ADEQUATE UNITS}}{\text{NUMBER OF RESPONSES}}$$

The formula is used at the level of activities.

6.7 Overall accuracy

The survey E-PE/L is conducted on the entire population; therefore sampling errors are not calculated. Errors in estimates occur only as the consequence of unit non-response.

Over-coverage errors:

| Activity/Status | Adequate | Inadequate | Over-coverage rate |
|-----------------|----------|------------|--------------------|
| B | 19 | 0 | 0.00 % |
| C | 1,217 | 37 | 2.95 % |
| F | 262 | 58 | 18.13 % |
| Total | 1,498 | 95 | 5.96 % |

Non-response rate is stated in 6.4.

6.8. Data revision policy

The survey has not yet undergone any revisions.

7. Supplementary documentation

7.1 Methodology

The questionnaire in Slovene is available on the web site: http://www.stat.si/doc/vprasaniki/E-PE-L_2010.pdf

7.2 Quality documentation

http://www.stat.si/doc/metodologija/kakovost/25_LPK_E_PE_L2010_en.pdf

2. AUSTRIA – MONTHLY NATURAL GAS SURVEY

Methodology and Summary Quality Report on Energy Statistics

Part A - General Information

Country: Austria

Year: 2011

1. Name of the data collection

Monthly natural gas survey

2. National body responsible

Energie-Control Austria für die Regulierung der Elektrizitäts- und Erdgaswirtschaft

(E-Control)

Address: Rudolfsplatz 13a, 1010 Vienna, AUSTRIA

Phone: +43 (0)1 24727-0

E-mail: office@e-control.at

3. Objective and history

The overall objective of the statistics on natural gas is to provide accurate and recent information for (1) the responsible ministry, (2) the market and its participants, (3) science and research and (4) the interested public at large as well as to supply (5) (a) the Austrian energy statistics with coherent primary data of the natural gas flows, (b) that same statistics with operational data of facilities, and (c) the national statistical body with information for better insight into physical and technical interrelations as well as of the market structures and rules. The two main side effects of this decentralised approach are to extend the horizon of the regulatory authority to all aspects which could affect the market and to minimise the efforts both for the data reporting as well as for the data collecting units.

The natural gas data collected by E-Control are the basis for the corresponding sub balance of the Austrian energy balance compiled by Statistics Austria, as they cover the primary commodity flow for natural gas as well as the secondary commodity flows for electricity and CHP (production). As the natural gas statistics rely exclusively on the physical flows, embedding this commodity flow is a comparatively easy undertaking.

The data collection for natural gas has been the responsibility of the ministry since the 1960ies. With the full liberalisation of the natural gas market in Austria in 2002, E-Control was assigned the task of data collection both for statistical and crisis management purposes. The main time series go back to 1945. Due to the changes in the responsibility for compiling the statistics and in the structure of the natural gas sector in 2002, the physical data model as well as the obligations to register had to be remodelled, leading to a major break in most of the time series. Thanks to an overlap of both models for six months, it was possible to establish a bridge between the two series to attenuate the break.

4. Reference period, frequency and transmission deadline

The reference period for the monthly natural gas survey is the calendar month for energy quantities (natural gas flows) and the end of the month for stocks.

The frequency for monthly data submission is once a month.

The deadline, according to the market rules for the closing of the first clearing, is the 15th working day of the following month – i.e. in general around the 20th.

Methodology and Summary Quality Report on Energy Statistics

Part B - Detailed information

5. Legal framework

Statistical surveys for natural gas are mandatory in Austria.

The legal basis is derived (1) from the *Bundesstatistikgesetz* (Statistics Act) 2000 and (2) from the *Gaswirtschaftsgesetz* (Natural Gas Act) 2011 and the *Energie-Control-Gesetz* (E-Control Act) 2011 (formerly from the Natural Gas Act 2006).

The *Gasstatistik-Verordnung* (Gas Statistics Order) in force was issued by E-Control in 2005 with an amendment in 2008 and is based on the Natural Gas Act 2006.

6. Statistical concepts and method

6.1 Variables surveyed and derived

Control area (data from clearing centre/s)

- Natural gas or biogas supplied to the consumer (kWh) per system operator
- Network losses (kWh) per system operator
- Total injection into the marked area (kWh) per system operator

Interconnected grid (data from system operators)

- Physical imports (kWh) per interconnector
- Physical exports (kWh) per interconnector

Production (data from all operators of production facilities)

- Physical production (kWh) per production facility

Storage (data from all operators of storage facilities)

- Physical injection (kWh) per storage facility
- Physical withdrawal (kWh) per storage facility

Peripheral data (all operators of storage facilities)

- Available volume at month's end (Nm³)

Peripheral data (system operators)

- Natural gas supply to power plants

Note: Due to the amendment of the Natural Gas Act in 2011 some fundamental changes in the market system will become operative by the end of 2012, causing also the need for changes in the physical data model. These will be taken into account as of 2013.

6.2 Type of data collection

Complete inventory count

- All system operators (direct or via clearing centre/s)
- All operators of production facilities
- All operators of storage facilities

6.3 Population frame and reporting unit

Complete inventory of network operators via market rules. Complete inventory of operators of production and storage facilities via market rules or the ministry.

6.4 Sample size and unit non-response rate

Not applicable

6.5 Classifications

Not applicable

6.6 Compilation of the final data set, models and statistical estimation techniques used

According to the market rules, the clearing and settlement of planned and actual volumes of natural gas and biogas fed into the grid and withdrawn from the grid is to be operated by an independent imbalance settlement responsible party (clearing centre). Taking into account that the balancing model is very sophisticated, undertaken for every hour and involving data from traders, suppliers and system operators, and as the imbalance of a balance group may entail imbalance charges, these data are highly reliable.

Therefore the physical gas balance relies on three pivotal points: the first being the gas supplied to the consumers, provided by the clearing centre/s, the second being the physical exchange across the border reported by the system operators and as a third pivot the actual production from the operators of production facilities and the storage balance (physical injection and withdrawal) from the operators of storage facilities.

The magnitude of the balance of all inflows and outflows (physical exchange over the border, production and storage balance) can be cross-checked with the net overall injection into the grid available per network operator.

Please note: As the physical data model uses data gathered from different sources and for different purposes, a final difference between the calculated and the reported consumption still remains. This difference is reported as “statistical difference”.

6.7 Overall accuracy

Coverage of the grid-bound internal gas market is 100 %. These quantities are reported or estimated only for the energy balance on an annual basis.

The reported consumption is corrected via the second clearing, which is undertaken 13 months after the reporting month. The difference between the first and second clearing is in most cases insignificant but may add up in individual months to +/- 2.5 %.

The volumes reported for production and storage as well as for the imports and exports are crosschecked as part of the balancing scheme itself.

Most erroneous data can be tracked and corrected before the monthly publication.

Note: Biogas produced and consumed on a more or less local basis but not fed into the grid is not covered by the statistics. These quantities are surveyed / estimated by Statistics Austria for the purpose of the annual energy balance only.

6.8. Data revision policy

Monthly data may be revised during the current reporting year, for the last time with the publication of the balance for December. They are revised as soon as the annual statistics are completed – i.e. in July of Y+1 at the latest, the data being then tagged “final”. A last revision of all monthly data is undertaken as soon as the second clearing for December is available, i.e. in February of Y+2. From then on no further revisions are to be expected.

Monthly revisions at the most +/- 2.5 %

Annual revisions not exceeding +/- 0.5 %

7. Supplementary documentation

7.1 Methodology

At present not available.

7.2 Quality documentation

At present not available.

3. UK – ANNUAL STATISTICS ON RENEWABLE ENERGY

Methodology and Summary Quality Report on Energy Statistics

Part A - General Information

Country: United Kingdom

Year:2011

1. Name of the data collection

Statistics on Renewable Energy

2. National body responsible

Department of Energy and Climate Change

3 Whitehall Place

London SW1A 2AW UK

3. Objective and history

The Department of Energy and Climate Change has historically published statistical information on renewable sources of energy on an annual basis, representing calendar years periods. The statistics are published in the form of commodity balances for individual renewable products, or groups of renewable products where data would be considered to be disclosive. The statistics cover active solar heating, solar photovoltaics, onshore and offshore wind power, wave power, large- and small-scale hydro, biofuels (biomass and biowastes, including co-firing) heat pumps, and geothermal aquifers. Data are gathered on project details (where known), technology type, installed capacity, generation (electricity and/or heat), fuel-type and biofuels for transport. In addition, data on installed capacity for electricity generated from renewable sources is also published. Data generally exists from 1990, and is collected either directly by DECC or as part of an OJEU-tendered contract ("the Renewable Energy Statistics contract").

Additionally, data on renewable sources of electricity and biofuels for transport are collected and published on a quarterly basis.

All the available data are published on the DECC website, from the following link:

http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/renewables/renewables.aspx

4. Reference period, frequency and transmission deadline

Annual data on renewable energy are published on the last Thursday of July each year, and cover the previous calendar year. For instance data published on Thursday 28 July 2011 related to the calendar year 2010. A more limited amount of data is published on the last Thursday of the previous month in the June edition of Energy Trends. Quarterly data are published alongside the Energy Trends series, on the last Thursday of March, June, September and December, and represent the position at the end of the previous quarter – so data published towards the end of September 2011 represented the position as at 30 June 2011.

Methodology and Summary Quality Report on Energy Statistics

Part B - Detailed information

5. Legal framework

Data are collected via a number of surveys and administrative systems. At present responses to surveys are voluntary, but the companies approached are aware of the requirement for the UK to report timely and accurate data to Eurostat.

6. Statistical concepts and method

6.1 Variables surveyed and derived

Data on the performance of renewable energy schemes in the UK are collected from a number of sources and are used to update a database of renewables schemes (known as the "RESTATS Database"), maintained by AEA technology plc on behalf of DECC.

Technologies covered include:

- Co-firing (biomass with fossil fuels)
- Biomass (dedicated)¹
- Biomass (wastes)²
- Geothermal Aquifers
- Hydro (large- and small-scale)
- Solar (PV & Active Solar Heating)
- Tidal and Tidal Stream
- Wave
- Wind Offshore
- Wind Onshore
- Heat Pumps

1 Landfill gas, Sewage Gas, Domestic Wood, Industrial Wood, Energy Crops & Forestry Residues, Straw

2 Municipal and industrial waste, Specialised waste - AD, Hospital, Meat & Bone, Poultry Litter, Scrap Tyres

The following data are gathered about these schemes:

- Project details (address, technology, Installed Capacity)
- Generation (Electricity and/or Heat) and Uses
- Fuel Input (Energy Input - Indigenous or imported)
- Energy content of each type of fuel consumed (Gross Calorific Value and Net Calorific Value basis)

The following information is extracted from the Ofgem ROCs and Accredited Stations database:

- Name and address details of the accredited stations
- Electrical generating capacity
- Number of ROCs issued. This is a proxy for electricity generated.

Up until 31st March 2009, 1 ROC was issued in respect of each MWh of electricity generated. From 1st April 2009, the number of ROCs issued per MWh is dependent upon the electricity generating technology employed. The Ofgem ROCs database now includes a factor to convert the number of ROCs issued into the number of MWh of generated.

Further details are available in Chapter 7 of the Digest of UK Energy Statistics, available at the following links:

<http://www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx>

http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/renewables/renewables.aspx

6.2 Type of data collection

There are a variety of data sources used – both survey and administrative. These are shown below.

| <u>Data Source</u> | <u>Primary Source</u> |
|--|--|
| Bio-Energy Capital Grants Programme | Defra |
| British Hydropower Association Database | British Hydropower Association |
| Renewable UK Wind Database (via web site) | Renewable UK (formerly, the British Wind Energy Association) |
| CHAPSTATS, the Combined Heat And Power STATisticS database | AEA on behalf of DECC and Defra |
| Clinical Waste; database of all UK clinical waste incinerators | Environment Agency (EA) |
| Landfill Gas Sites | Environment Agency (EA) |
| Major Power Producers (MPP) Survey (large-scale hydro, co-firing and poultry litter combustion) | DECC |
| NFFO Database; includes Scottish Renewables Obligation (SRO) and the Northern Ireland NFFO (NI-NFFO) | Non Fossil Purchasing Agency (NFPA) for England, Wales and Scotland and shortly to incorporate Northern Ireland. |
| Renewable Energy Planning Database (Data on schemes working their way through Planning Applications) | DECC (currently being integrated with the RESTATS database) |
| ROCs Database of Accredited Generating Stations and the ROCs Register | Ofgem |
| Solar PV; annual report reviewing solar activities in the UK | IT Power |
| Technology Experts and Trade Associations | (AEA Technology plc, Forestry Commission, Ground Source Heat Pumps Association, HETAS, Renewable Energy Association and Solar Trade Association) |
| Tyres for cement production | British Cement Association (via (DECC) |

6.3 Population frame and reporting unit

These data sources are listed in the previous section.

6.4 Sample size and unit non-response rate

No one approach has been shown to be completely effective so the protocol for conducting these surveys is summarised below:

- Small number of large projects: specific project types are all surveyed annually if the required data cannot be obtained from other sources
- Large numbers of small projects: estimates are based on survey of a sub-sample
- On-line survey forms are also made available from a secure web site as an alternative method of responding
- Modelling and estimates are made where surveys are not practical, with independent assessment and verification of the data where practicable

The estimated proportion of respondents and the percentage of energy that comes from each is summarised in the following Table:

Data sources currently in use

| Approach | % of Respondents | % of Energy |
|---------------------------|-------------------------|--------------------|
| Small # of Large projects | 12% | 13% |
| Large # of Small projects | 80% | 3% |
| On-line form | 8% | 3% |
| Models/est | 0% | 6% |
| Other sources | 0% | 74% |
| TOTAL | 100% | 100% |

6.5 Classifications

Data are collected using the UK Standard Industrial Classification (SIC) 2007, which is aligned with NACE. Classification currently identify renewables used for transformation and final consumption, which is split into "Industry", "Transport", "Domestic", "Public Administration", "Commercial" and "Agriculture". No breakdown of industrial use is published, as the data are considered to be disclosive due to the small number of users for particular fuel types.

6.6 Compilation of the final data set, models and statistical estimation techniques used

Historically, the RESTATS project annually surveyed all renewables technologies but has now gradually integrated with other data collection activities (e.g. DECC's Major Power Producers Survey) which in turn made it more effective. In addition, incorporating new data sources (e.g. Ofgem's ROCs database) gave the project more complete coverage. 'Gap Analysis' Surveys for less important technologies (e.g. clinical waste incinerators) are undertaken on a 3 year cycle.

This approach, however, gave rise to issues of data quality from these disparate sources and led to the development of appropriate quality checking procedures. This includes data cleansing (duplicates), where GIS is helpful, crosschecking with other data sources to ensure, to best endeavours, that these data are both complete and consistent, and undertaking 'sanity' checks (e.g., comparison of load factors) to confirm that data are meaningful prior to acceptance.

Ofgem ROCs database: Data relating to electrical generating capacity and electricity generation are submitted by operators to Ofgem every month. As the quantity of electricity generated has a financial value in the form of ROCs, a minimum standard of electricity metering accuracy is stipulated by Ofgem. These standards are subject to audit by Ofgem at which time a check is also made that site held data corroborates the data and calculations submitted to Ofgem.

Whilst DECC's Major Power Producers (MPP) Survey, the NFFO Database, CHAPSTATS, and the Renewable Energy Planning Database, all have their own internal checking procedures to ensure data quality procedure, checking is also undertaken by RESTATS before these data are imported into the database.

In a few cases (the domestic wood use, active solar and straw combustion for heat surveys) where good data are not available, these are currently estimated by the appropriate lead Technical Expert having a good knowledge of both the technology and industry, and peer reviewed by a competent external organisation/contractor (e.g., the Forestry Commission). The information on which these estimates are based is supplemented, where possible, by carrying out a limited survey on a sub-sample of projects (e.g. domestic wood use).

Domestic Wood Use was for a long time estimated from a survey carried out in 1989. The results of numerous follow-up studies were always inconclusive to warrant making changes to these data but a review in 2002 of a different approach to calculating domestic wood provided a revision based on anecdotal evidence for a 50 per cent growth rate over a 2-3 year period and subsequently supported from other data sources.

Active Solar Heating figures are currently estimated using a spreadsheet model developed using data provided by the UK Solar Trade Association.

Straw combustion for heat is currently based, in the absence of better data, on a historic survey data. Alternative data sources through the national agricultural survey are being investigated.

6.7 Overall accuracy

The activities described in the previous section have allowed a view to be formed of the accuracy and consistency of the data from these and other various data sources. The ROCs generation figures should be at least the same as NFFO and could be greater if the site is generating more than its NFFO contract; it can never be less. NFFO data therefore provide a good crosscheck with ROCs as these schemes are recorded in both databases. When ROCs first began, there were a number of discrepancies that were primarily related to combustion schemes as the latter required proof of the nature and calorific value of the fuels and would result in a delay in the issuing of certificates. At present, there is usually a good correlation in >99% of the schemes. Errors can arise as a result of duplicates where multiple ROCs accreditation (reference) numbers are issued for the same project; we remain vigilant for these.

Following the request by DECC that Major Power Producers provide both hydro and wind data on a site-by-site basis, rather than on an aggregated basis, data quality has improved enormously and there is now a > 99% correlation with both NFFO and ROCs data sources if they also hold information on these schemes. More dependence will be placed on MPP data where possible though this is currently the norm in the data acceptance procedures for RESTATS as it represents directly surveyed data that has priority over other data sources. Some schemes are generating before they are ROCs accredited (so there are no ROCs certificates); this was picked up through the MPP survey but gives rise to the possibility that there may be some non-MPP schemes also in the same position that would therefore not be picked up.

Some errors can arise from non-respondents and incomplete responses for both the RESTATS annual and gap analysis surveys, and the MPP survey, especially where the potential respondents concerned are a major player for that technology. This can give rise to problems where key pieces of information are missing, such as biomass feedstocks not being fully specified, tonnages not known, etc. These can sometimes be corrected for through the use of market intelligence information and cross-checking, where possible, with other data sources.

The REPD provides a crosscheck with electricity generating schemes that have become operational during the reporting year to ensure the completeness of schemes being reported. There are some limitations as the database only holds data on schemes >0.01MW that require a planning approval and provides only installed capacity and address details. In addition, some technologies, such as Sewage Gas and Co-firing, which do not require planning approval, will not be picked up.

Accuracy and consistency of other data sources is varied, especially when they are only used for estimates.

In DUKES, data on renewables operation are reported for a number of years in order to give a historic time series perspective. Where better data have been identified, it is normal practice for revisions to be made to the data for previous years. The data entries concerned are suffixed with an 'r'.

6.8. Data revision policy

The DECC energy statistics revision policy is available in the “supporting documents” section of the following webpage: <http://www.decc.gov.uk/en/content/cms/statistics/governance/governance.aspx>

7. Supplementary documentation

7.1 Methodology

<http://www.decc.gov.uk/assets/decc/Statistics/source/renewables/60-renewable-statistics-methodology.pdf>

7.2 Quality documentation

<http://www.decc.gov.uk/assets/decc/Statistics/source/renewables/60-renewable-statistics-methodology.pdf>

4. GERMANY – MONTHLY COAL STATISTICS

Methodology and Summary Quality Report on Energy Statistics

Part A - General Information

Country: Germany

Year: 2012

1. Name of the data collection

“Kohlenstatistik”, statistics of domestic solid fuels (coal and lignite) in Germany

2. National body responsible

Statistik der Kohlenwirtschaft e.V., Herne/Köln

- Section coal (Steinkohle): Postfach 101820, D-44608 Herne

- Section lignite (Braunkohle): Max-Planck-Str. 37, D-50898 Köln

3. Objective and history

Founded in 1954 as statistical body for the associations of the German coal and lignite industry. Duty to provide all required statistical data of the coal mining sector in Germany for the authorities, to fulfil the legal information obligations of its members and to advise state agencies or other competent institutions (as AG Energiebilanzen) on statistical issues referring to the coal and lignite industry.

Public availability of time series data on the website: www.kohlenstatistik.de

4. Reference period, frequency and transmission deadline

Monthly (with a transmission lag of +/- 2 month), quarterly and annual surveys.

Methodology and Summary Quality Report on Energy Statistics

Part B - Detailed information

5. Legal framework

Statutes of the *Statistik der Kohlenwirtschaft e.V.* National Legislation (especially the reasons for the law of the “Energiestatistikgesetz”, the national Energy Statistics Act)
EU Energy Statistics Regulation

6. Statistical concepts and method

6.1 Variables surveyed and derived

- production of hard coal, lignite and coal products (as briquettes, coke, powder etc.)
- employment in the coal and lignite producing industry
- capacities in the coal and lignite producing industry
- stocks in the coal and lignite producing industry
- productivity in the coal and lignite producing industry

6.2 Type of data collection

Business survey, census.

6.3 Population frame and reporting unit

All undertakings of the coal and lignite producing industry.

6.4 Sample size and unit non-response rate

All producing units of the coal and lignite industry, normally no non-response rate.

6.5 Classifications

National WZ 2008 B 05

6.6 Compilation of the final data set, models and statistical estimation techniques used

Different ways of data-checking are used. Several automatic checks of the original data by the industries' business units, cross-checks by the Statistik der Kohlenwirtschaft e.V. as well as feedback by the receiving state agencies.

6.7 Overall accuracy

Good accuracy by regular plausibility checks and data revisions. Measurement units and graded process of condensation are occasional sources of error.

6.8. Data revision policy

Revisions possible within a month or a quarter.

7. Supplementary documentation

7.1 Methodology

See below

7.2 Quality documentation

To implement (Until now the statistics on German coal and lignite are part of the not-webbed Quality Report for the Energy Balances in Germany by the EEFA Institute, Münster/Berlin)

5. SPAIN – ANNUAL COAL STATISTICS

Methodology and Summary Quality Report on Energy Statistics

Part A - General Information

Country: Spain

Year: 2012

1. Name of the data collection

Estadística de Destilación de Carbones (Coal Distillation Statistic)

2. National body responsible

Ministry of Industry, Energy and Tourism

3. Objective and history

This statistic mainly studies the transformation process in coke ovens (inputs and outputs of the process and uses of the outputs). It also covers part of the transformation process in blast furnaces. Results of the statistic are used in Table 1 of the Coal Questionnaire. Results of the statistic are available since 2000.

4. Reference period, frequency and transmission deadline

Companies of the sector have to send the questionnaire annually with the information of the previous year in February.

Methodology and Summary Quality Report on Energy Statistics

Part B - Detailed information

5. Legal framework

Mandatory

National law: Ley 12/1989 de la Función Estadística Pública (http://noticias.juridicas.com/base_datos/Admin/12-1989.html).

6. Statistical concepts and method

6.1 Variables surveyed and derived

- Inputs and outputs of the transformation process in coke ovens: coking coal (t), coke (t), coke oven gas (1000 m3), blast furnace gas gas (1000 m3).
- Stocks, imports and consumption of coking coal (t).
- Stocks, production, consumptions and exports of coke (t).
- Production, consumptions and losses of coke oven gas and blast furnace gas (1000 m3).

6.2 Type of data collection

- Type: Business survey.
- Format: Census

6.3 Population frame and reporting unit

The survey is a census of all the companies of the sector.

6.4 Sample size and unit non-response rate

- Sample size: Four companies.
- Unit non-response rate: 0%

6.5 Classifications

Product classification: coking coal, coke, coke oven gas, blast furnace gas.

6.6 Compilation of the final data set, models and statistical estimation techniques used

Final data are obtained by aggregation of individual data. No models and no statistical estimation techniques are used.

6.7 Overall accuracy

Due to the reduced number of companies involved, the accuracy depends only on the accuracy of the information provided by the companies.

6.8. Data revision policy

If a company sends revised data, the results of the survey are revised.

7. Supplementary documentation

7.1 Methodology

<http://www.mityc.es/energia/balances/Estadisticas/Paginas/Carbon.aspx>

7.2 Quality documentation

<http://www.mityc.es/energia/balances/Publicaciones/Paginas/DestilacionCarbon.aspx>

6. FRANCE – SURVEY ON THE ANNUAL PRODUCTION OF ELECTRICITY (IN FRENCH)

Methodology and Summary Quality Report on Energy Statistics Part A - General Information

Country: FRANCE

Year: 2012

1. Name of the data collection

Enquête annuelle sur la production d'électricité

2. National body responsible

Service de l'Observation et des Statistiques (SOeS) / Sous-direction des statistiques de l'énergie (SDSE)
Ministère de l'Ecologie, du Développement Durable,
des Transports et du Logement (MEDDTL)
Commissariat général au Développement durable (CGDD)
Service de l'Observation et des Statistiques (SOeS)
Sous-Direction des statistiques de l'énergie - Bureau des statistiques de l'offre d'énergie
Tour Voltaire
92055 LA DÉFENSE CEDEX

3. Objective and history

Objectif de l'enquête : L'ensemble des données sur la production électrique nationale sont collectées via cette enquête. Ainsi, des informations sur la production électrique annuelle, sur la puissance, sur la composition du parc électrique –part des énergies renouvelables par exemple – et, dans le cas des installations thermiques classiques, sur la consommation de combustibles, peuvent être appréhendées grâce à cette enquête.

Champ de la collecte : L'enquête annuelle sur la production d'électricité vise l'exhaustivité sur l'ensemble du territoire français, départements d'outremer compris.

Pour les installations photovoltaïques, les données de production sont recensées par le biais des obligations d'achats (fichier mis à disposition par les entreprises qui y sont soumises, EDF et les entreprises locales de distributions). En effet, du fait de la multiplicité des producteurs d'électricité photovoltaïque une collecte directe via les producteurs serait trop complexe, trop chronophage pour une plus-value nulle face aux données mises à disposition dans le fichier des obligations d'achats.

Pour tous les autres types d'installations, tous les producteurs d'électricité sont directement interrogés.

L'ensemble du territoire français (hors communautés d'outre-mer) est interrogé.

Historique de l'enquête : Les séries les plus anciennes de l'enquête annuelle sur la production d'électricité datent de 2000 (collecte 2001). En 2007, un nouveau module a été intégré pour répondre au questionnaire sur la cogénération. Il permet alors de collecter des données plus fines sur la production d'électricité et de chaleur pour les installations de cogénération. Ainsi, la série la plus ancienne sur les installations de cogénération porte sur la production de 2006.

En outre, à partir de 2007, les départements d'outre-mer sont interrogés.

Jusqu'en 2012 les enquêtés répondaient sur un formulaire papier. Celui-ci était identique pour toutes les installations, qu'elles soient hydrauliques, thermiques ou bien qu'il s'agisse de parcs éoliens.

Egalement, la collecte était réalisée par la sous-direction des statistiques de l'énergie avec le soutien des relais locaux. En 2012, du fait de la réorganisation des services déconcentrés du ministère, ce mode de collecte a été abandonné.

A partir de la collecte de 2012, cette enquête se fait via internet. Les utilisateurs téléchargent leur formulaire et peuvent envoyer leurs réponses de manière électronique. Aussi, pour chaque filière de production il existe un formulaire différent, n'incluant que les questions concernant la filière sélectionnée par l'utilisateur.

La collecte est entièrement assurée par la sous-direction des statistiques de l'énergie.

Fourniture de données : Cette enquête permet de répondre aux questionnaires de l'Agence Internationale de l'Energie (AIE) et d'Eurostat sur la production d'électricité et la consommation de combustibles.

Aussi, elle est l'unique source pour la réponse au questionnaire d'Eurostat sur la cogénération.

4. Reference period, frequency and transmission deadline

La période de référence est l'année calendaire. Les données de l'année N sont collectées l'année N+1.

Collecte 2011 : Les producteurs d'électricité avaient jusqu'au 18 mars pour répondre à l'enquête annuelle sur la production d'électricité. Une première vague de rappel était effectuée par les directions départementales. La sous-direction a récupéré les formulaires entre mai et juin 2011. Une fois les données saisies, une nouvelle vague de rappels fut effectuée entre août et septembre 2011. La reconstitution des données (méthode décrite au paragraphe 6.6) à partir des obligations d'achats fut faite en septembre-octobre 2011.

Collecte 2012 : La première vague de collecte a eu lieu entre le 5 février et le 10 mars 2012. Pour les nouvelles installations, la collecte s'est étalée entre le 27 février et le 10 avril 2012. Des lettres de rappel sont envoyées début mai 2012, les enquêtés ont jusqu'au 27 mai pour répondre.

5. Legal framework

Après l'avis favorable du Conseil National de l'Information Statistique, l'enquête annuelle sur la production d'électricité est une enquête statistique obligatoire,

- visa n° 2012X064EQ (collecte 2012) - JORF n°0299 du 27 décembre 2011 page 22301 texte n° 27
- visa n° 2011A063EQ (collecte 2011) - JORF n°0037 du 13 février 2011 page 2787 texte n° 10

6. Statistical concepts and method

6.1 Variables surveyed and derived

L'enquête annuelle sur la production d'électricité permet d'obtenir les informations suivantes :

- production et puissance électrique,
- consommation de combustibles,
- pour les installations de cogénération, production de chaleur et puissance thermique,
- âge des groupes de production,
- nombre d'heures de fonctionnement des groupes de production,
- pour les centrales hydrauliques, des données sur le type d'installation (au fil de l'eau, avec retenue, avec pompage),
- pour les centrales hydrauliques, des informations sur le cours d'eau.

En outre, il est possible de décliner ces données selon les modalités suivantes :

- le type d'installation (parcs éoliens, hydraulique, thermique classique – hors cogénération - , cogénération, nucléaire²),
- pour les centrales thermiques classiques, le type de technologie.

Aussi, pour chaque centrale sont collectées des informations sur :

- la commune de la centrale,
- l'activité principale et le numéro SIRET propre à l'installation électrique,
- le propriétaire de la centrale, son numéro SIRET et son activité principale.

Pour répondre aux questions posées sur les consommations de combustibles ou bien la production d'électricité, sont utilisés les facteurs de conversion suivants :

- | | |
|--------------------------------|-----------------------------|
| - Ammoniac | 1 tonne = 4,0 MWh |
| - Bagasse | 1 tonne = 2,3 MWh |
| - Biogaz | 1 m ³ = 10,0 MWh |
| - Bois&Déchets bois | 1 tonne = 3,0 MWh |
| - Charbon marchand | 1 tonne = 7,2 MWh |
| - Charbon non marchand | 1 tonne = 4,7 MWh |
| - Coke de pétrole | 1 tonne = 8,9 MWh |
| - Déchets ménagers | 1 tonne = 2,6 MWh |
| - Ethane | 1 tonne = 13,2 MWh |
| - Farines animales | 1 tonne = 5,1 MWh |
| - Fioul lourd | 1 tonne = 11,1 MWh |
| - FOD ou Gazole | 1 tonne = 14,0 MWh |
| - Gaz de raffinerie | 1 tonne = 19,6 MWh |
| - Gaz Naturel | 1 MWh PCS = 0,9 MWh |
| - Gaz de four à coke (MWh) | |
| - Gaz de hauts fourneaux (MWh) | |
| - Hydrogène | 1 tonne = 3,0 MWh |
| - Résidus de papeterie | 1 tonne = 3,5 |
| - Résidus de raffinerie | 1 tonne = 11,6 |
| - Résine (MWh) | |
| - Soufre | 1 tonne = 2,6 MWh |
| - Vapeur | 1 tonne = 0,8 MWh |

² Pour les installations nucléaires ne sont connues que la production et la puissance électrique

6.2 Type of data collection

Enquête réalisée auprès d'entreprises essentiellement. Toutefois, des particuliers sont également interrogés. Enfin, une partie des non-réponses³ est reconstituée à l'aide du **fichier des obligations d'achats**. Il regroupe l'ensemble des quantités d'électricité produite de façon renouvelable rachetées par EDF ou les entreprises locales de distributions.

Enfin, **pour les installations photovoltaïques**, EDF et les entreprises locales de distribution nous transmettent la quantité d'électricité d'origine photovoltaïque qu'ils ont rachetée à des entreprises ou des particuliers. Pour le photovoltaïque, il s'agit de l'unique source de données. De plus, les producteurs ont tout intérêt à ne pas auto-consommer l'électricité du fait d'un tarif de rachat intéressant, si bien que l'on considère que l'électricité vendue équivaut à l'électricité produite.

6.3 Population frame and reporting unit

L'unité statistique est la centrale électrique. Une centrale peut être composée de plusieurs groupes de production - un groupe de production étant par exemple une turbine hydraulique, un moteur à combustion interne, une éolienne etc. De même, une entreprise peut posséder plusieurs centrales électriques.

Notons que si une centrale produit de l'électricité à partir de deux filières différentes, on considère dans l'enquête qu'il existe deux centrales. Une centrale électrique ne peut appartenir qu'à une unique filière de production.

Il existe en 2011 deux types de collecte :

- La première par questionnaire auprès de tous les producteurs « historiques » soient EDF, la CNR et la SHEM. Ces entreprises font leur réponse directement dans une base de données. En 2011, cela représente 595 centrales.
- La seconde collecte se fait questionnaire auprès des autres producteurs d'électricité. En 2011, la sous-direction a pour la dernière fois utilisé les Directions Départementales des Territoires comme intermédiaires. Néanmoins, il s'est avéré que ce réseau est de moins en moins en mesure de mener à bien cette mission compte tenu de sa charge de travail. Lors de la collecte 2011, cela représente 3 584 centrales.

Enfin, en cours d'année, à partir de ce même fichier des obligations d'achats, sont repérés de nouveaux producteurs. Dans ce cas, on intègre leur production. En 2011, ont été ajoutés 187 centrales.

En 2011, 4 366 centrales sont interrogées.

En 2012, seule l'entreprise EDF est interrogée différemment. Tous les autres producteurs doivent compléter les formulaires téléchargeables sur internet. **En 2012, 4 554 centrales** sont au total interrogées (les centrales EDF sont incluses dans ce total). Si de nouveaux producteurs sont identifiés à la fin de la collecte les données de leur production seront ajoutées à partir du fichier des obligations d'achats.

6.4 Sample size and unit non-response rate

En 2011, le taux de réponse est de 91,3 % (3 986 centrales). Il est calculé à l'issu des vagues de rappels. Après redressement de la non-réponse³, on obtient un **taux de réponse final de 97,2 %** (4442 centrales).

6.5 Classifications

Les filières de production distinguées sont les suivantes :

- parcs éoliens,
- hydraulique,
- thermique classique – hors cogénération,
- cogénération,
- nucléaire.

Les types de technologies thermiques qui peuvent être choisis par les utilisateurs sont les suivants :

- moteur à combustion interne,
- moteur stirling,
- moteur à vapeur,
- turbines à combustion avec brûleur de post-combustible,
- turbine à gaz avec récupération de chaleur,
- turbine à gaz à cycle combiné avec récupération de chaleur,
- micro-turbine,
- turbine d'extraction à condensation de vapeur,
- turbine à vapeur à contre-pression,
- turbine à vapeur à condensation et soutirage, pile à combustible et cycle de rankine

Les activités principales des entreprises sont décrites selon la nomenclature Naf-Rev2.

³ Méthode décrite dans le paragraphe 6.6

6.6 Compilation of the final data set, models and statistical estimation techniques used

Traitement de la non-réponse : Lorsque les centrales ne répondent pas, les données sont complétées à partir des obligations d'achats. Pour rappel, ce fichier regroupe l'ensemble des données de production vendue auprès d'EDF ou bien d'entreprises locales de distribution, soient les acteurs historiques. En effet, ceux-ci sont dans l'obligation de racheter aux producteurs d'électricité l'énergie électrique que ceux-ci souhaitent vendre.

Pour compléter les données manquantes, on considère que la production nette totale est égale à la production vendue. Cette hypothèse peut sembler forte, toutefois, dans le cas des productions hydraulique et éolienne, cela est généralement le cas.

En 2011, la réponse de 256 centrales a été complétée de cette manière.

Pour les installations thermiques, cette technique n'est pas appliquée. Cela impliquerait ensuite de devoir estimer la consommation de combustibles par rapport aux données passées. Néanmoins, on ne dispose pas toujours de cette information. Aussi, les producteurs d'électricité thermique qui ne répondent pas, sont très souvent des producteurs dont ce n'est pas l'activité principale. Par conséquent, la production d'électricité répond très souvent à un besoin dans leur processus industriel, donc, l'électricité vendue est alors souvent différente de l'électricité produite.

La consommation de combustibles : Une très grande partie des producteurs d'électricité à partir d'une technique thermique classique répondent aisément à cette partie du questionnaire. Néanmoins, certains ont quelques difficultés à donner des réponses précises. Dans ce cas, leur consommation de combustible est estimée à partir du rendement théorique.

La consommation de combustible pour l'électricité seule et la chaleur seule : Pour chaque installation thermique sont fournies des informations sur le(s) type(s) de combustibles utilisé(s) et en quelle(s) quantité(s). Pour chaque installation est alors calculée la somme de combustibles consommés.

Les installations de cogénération produisent par définition de la chaleur et de l'électricité simultanément. Si on veut connaître la consommation pour l'électricité seule ou la chaleur seule, des estimations doivent alors être faites. Pour cela, sont calculées les parts que représentent l'électricité et la chaleur dans la quantité totale d'énergie produite. Ces deux parts sont ensuite appliquées aux quantités de combustibles consommées pour chacun des combustibles. Alors, peuvent être calculées les quantités de combustibles utilisées pour la production d'électricité et de chaleur séparément. Il est ainsi supposé que l'efficacité énergétique est la même pour chaque combustible pour produire la chaleur et l'électricité. Cette hypothèse est forte, toutefois nous n'avons pas d'autres moyens d'estimer les quantités différenciées de combustibles dans une unité de cogénération pour produire de la chaleur et de l'électricité.

La production d'électricité et de chaleur par combustibles : Comme cela est expliqué précédemment, pour chaque installation on peut estimer en quelle quantité est utilisé un combustible pour produire une certaine quantité de chaleur et d'énergie. On connaît donc la part de chaque combustible dans la production d'énergie. Cette part est ensuite appliquée à la production totale d'électricité - ou de chaleur si on considère les combustibles utilisés pour la chaleur. Alors on aura la production électrique - ou de chaleur - par type de combustible.

6.7 Overall accuracy

La plupart des variables collectées sont de qualité satisfaisante.

De nombreux producteurs ont **des difficultés à communiquer de manière précise la quantité de chaleur produite**. Si pour l'électricité la plupart possèdent des compteurs qui permettent de comptabiliser l'électricité produite et vendue, cela est différent pour la chaleur.

Aussi, la production de chaleur est demandée jusqu'en 2011 dans une unité par défaut, le GJ. Certains n'avaient pas connaissance de leur production de chaleur dans cette unité, et n'étaient pas en mesure de convertir leur production dans l'unité demandée, le GJ.

Cette difficulté relative à l'utilisation d'unités par défaut s'est également fait ressentir pour la déclaration des consommations de combustibles.

Pour la collecte 2012, les producteurs ont désormais le choix de l'unité. Un bilan quant à cette mesure pourra être établi en cours d'année 2012.

6.8. Data revision policy

Aucune révision des données n'est prévue.

7. Supplementary documentation

7.1 Methodology

Collecte 2011 :

Toutes les informations à propos de cette enquête sont disponibles à l'adresse suivante :

[http://www.statistiques.developpement-durable.gouv.fr/sources-methodes/enquete-nomenclature/1544/0/enquete-annuelle-production-delectricite.html?tx_ttnews\[catdomaine\]=966&cHash=b7e4c523a90a1493b857c964e96b39f5](http://www.statistiques.developpement-durable.gouv.fr/sources-methodes/enquete-nomenclature/1544/0/enquete-annuelle-production-delectricite.html?tx_ttnews[catdomaine]=966&cHash=b7e4c523a90a1493b857c964e96b39f5)

Collecte 2012 :

Le questionnaire peut être téléchargé à l'adresse suivante :

<https://enquetes-sesp.application.developpement-durable.gouv.fr/Enquetes/index.jsp?idEnquete=prodelect>

Pour télécharger un formulaire, peuvent être utiliser les identifiants suivants :

N° de questionnaire Q1, Code internet : 1

7.2 Quality documentation

Not available