



Department for
Business, Energy
& Industrial Strategy

Electricity Statistics – data sources and methodologies

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Electricity Statistics – data sources and methodologies

1. Introduction

The UK's electricity system is a large system, with the following distinct businesses: generation, transmission, distribution and supply. The Department for Business, Energy and Industrial Strategy (BEIS)'s electricity volume statistics cover all of these areas.

Electricity statistics cover both the public distribution system and non-grid consumption, with production from major power producers and other generators. This distinction between major power producers and other generators is an important part of the statistics; further information on the definition of these two groupings can be found in Box 1, on page 2 of this note.

1.1 Users of electricity data

One of the main users of the electricity data is BEIS itself. The data feed directly into other energy statistics produced by BEIS (renewables, coal, gas, oil and overall energy statistics), and are also used in the measurement of emissions, producing projections of future energy demand and fuel mix, and developing and monitoring policy.

The electricity industry itself is another key user, including the National Grid and the electricity generators, distributors and suppliers. Central and regional government (particularly the devolved administrations, who are a key user of the statistics BEIS produce at a UK country level), academics, consultants, policy groups, the media, overseas energy institutions, and the general public are all extensive users of the electricity data.

Along with other countries, BEIS is also required to submit electricity statistics to the Statistical Office of the European Communities (SOEC, also referred to as Eurostat) and the International Energy Agency (IEA) on a monthly and annual basis. These organisations collate this information and publish it in order to produce an EU or global picture of energy and to facilitate comparisons between member countries.

2. Publications

BEIS produces energy statistics tables on a monthly, quarterly and annual basis. On a quarterly and annual basis, it also produces "energy balances". Energy balances reconcile demand for energy with supply of energy, and it is on this basis that statistics are compiled, and the main tables in Energy Trends (ET) and the Digest of UK Energy

Statistics (DUKES) are published. Further information on energy balances can be found in the energy balances methodology note, available at:

<https://www.gov.uk/government/publications/energy-balance-methodology-note>

On an annual basis, electricity balances are published, in DUKES, tables 5.1 to 5.3. These statistics are disaggregated into approximately 30 categories of demand. Further tables are published showing fuel use (table 5.4), electricity sales (table 5.5), and generation and supply (table 5.6), all by volume of energy. Additional tables show electricity generation capacity – tables 5.7 to 5.9 – peak demand, load factors and thermal efficiencies (table 5.10). Meanwhile, table 5.11 details information on generation capacity of the major power producers. Further annual tables, 5.1.1 to 5.1.2 show volumes over a longer time span, using classifications consistent with the early years - this is not in energy balance format, but uses the same information as in tables 5.1 and 5.2.

On a quarterly basis, two tables are published in ET, 5.1 (covering fuel used for electricity, electricity generated and electricity supplied) and 5.2, which is in the format of an energy balance and disaggregated into approximately nine categories of demand. The quarterly figures published in the ET tables are consistent with those published in DUKES.

On a monthly basis, data are for major power producers only, which account for around 90 per cent of generation. Table 5.3 shows the amounts of fuel used, split by type, by major power producers; table 5.4 shows the amount of electricity available to the public distribution system (PDS), including electricity supplied, split by type, by major power producers, imports and purchases from smaller generators; and table 5.5 shows how this electricity available to the PDS is consumed.

Additional annual electricity statistics are published in Energy Sector Indicators (Maximum demand), and UK Energy In Brief. Additional data for this come from the National Grid, with no additional input from BEIS, and are thus not covered in this note.

Box 1: Major Power Producers and Other Generators

Major Power Producers (MPPs) are those companies whose prime purpose is the generation of electricity. Some renewable generators, with a smaller capacity portfolio, are excluded from this list. At the end of 2016, MPPs were:

AES Electric Ltd., Baglan Generation Ltd., Barking Power Ltd., British Energy plc., Centrica Energy, Coolkeeragh ESB Ltd., Corby Power Ltd., Coryton Energy Company Ltd., Derwent Cogeneration Ltd., Drax Power Ltd., EDF Energy plc., E.ON UK plc., Energy Power Resources, Gaz De France, GDF Suez Teesside Power Ltd., Immingham CHP, International Power Mitsui, Magnox North Ltd., Premier Power Ltd., RGS Energy Ltd, Rocksavage Power Company Ltd., RWE Npower plc., Scottish Power plc., Scottish and Southern Energy plc., Seabank Power Ltd., SELCHP Ltd., Spalding Energy Company Ltd., Western Power Generation Ltd, Fred Olsen, HG Capital, Renewable Energy Systems, Vattenfall Wind Power.

The term 'other generators' refers to companies who produce electricity as part of their industrial or commercial activities but whose main business is not electricity generation. The majority of electricity produced by these schemes is consumed on the site but some producers also transfer electricity to the public supply system. A number of renewable electricity generators (for example small wind farms) are also included under the term 'other generators' due to their comparatively small size. Just under 10 per cent of the UK's electricity is generated by 'other generators'.

3. Annual Statistics

Each year, three main electricity surveys are carried out – one detailed survey of the major power producers (MPPs), one survey of the major suppliers, and one less detailed survey of electricity distributors. These are supplemented with additional data from the electricity autogenerators survey, the National Grid, Iron and Steel Statistics Bureau, AEA Technology, as well as internal analysis. The annual statistics are published one year in arrears (t-1), but revisions are typically carried out to the previous two years, t-2 and t-3, where revised data has been received.

3.1 Data Sources

3.1.1 Main Electricity Surveys

- Major Power Producers (MPPs) survey (annual): census of approximately 35 MPPs surveyed electronically – for fuel used, electricity generated, net electricity supplied to the grid, own use of electricity, sales, and capacity, broken down by generation type/fuel. For pumped storage plants, any electricity consumed in pumping is also reported.
 - Coverage: all MPPs, representing approximately 90% of electricity generation
 - Response rate: approximately 100%
 - Some MPPs' power stations will report individually
- Electricity Suppliers survey (annual): approximately 30 main suppliers surveyed electronically – sales data split by SIC code. This also includes information on the value of sales, which is used in the calculation of energy prices.
 - Covering approx. 95% of electricity sales
 - Response rate: approximately 100%
- Electricity Distributors survey (annual): 13 Distribution Network Operators (DNOs) - all except the two Scottish DNOs, surveyed for quantity of electricity distributed and losses.

3.1.2 Additional Data Sources

- Autogenerators survey (annual): For more information, see Section 5.
- International Steel Statistics Bureau (ISSB) (annual): electricity generated, consumed and lost by the iron and steel industry, blast furnaces and coke ovens.
- AEA Technology/RESTATS database (annual): renewables (including co-firing) generation. More information on this can be found in the Renewables methodology note, at:
<https://www.gov.uk/government/publications/renewable-energy-statistics-data-sources-and-methodologies>

- BEIS (annual internal analysis): Calorific Values and Conversion factors, used to convert fuel masses to energy units. More information on this can be found at: <https://www.gov.uk/government/statistics/dukes-calorific-values> and <https://www.gov.uk/government/publications/energy-statistics-explanatory-notes>
- British Energy (annual): Average thermal efficiencies for Nuclear electricity.
- National Grid: electricity exports/imports to/from France, half-hourly, available at: <http://www2.nationalgrid.com/uk/Industry-information/electricity-transmission-operational-data/>
- Single Electricity Market Operator: electricity exports/imports to/from the Republic of Ireland, half-hourly, available at: <http://www.sem-o.com/Pages/default.aspx>
- Elexon (monthly): transmission losses and generation data for the GB National Grid.
- Ofgem: distribution units and loss percentages summary, available at: <https://www.ofgem.gov.uk/publications-and-updates/electricity-distribution-units-and-loss-percentages-summary>

3.2 Methods

3.2.1 Electricity Supply

Electricity supply includes electricity produced (generated) and net trade. Electricity generated is separated into MPPs and other generators (which includes autogenerators and smaller renewable generators). MPPs generation plus transfers (purchases) from other generators, plus net trade, provide the supply for the PDS. Other generators' generation less transfers provide the non-grid supply.

MPPs generation data receipt and aggregation (see Annex 1): When all MPPs surveys are received, the generation forms are initially checked to ensure the data are consistent with the monthly data previously received. Any large disparities are investigated, and any resulting monthly and quarterly revisions are then published with the annual data.

MPPs fuel used data receipt and aggregation (see Annex 2): The volume of fuel used in generation is also reported in the MPPs survey. This applies only to secondary forms of electricity only – i.e. electricity generated from primary fuel sources, such as Coal, Natural Gas or Oil. Primary forms of electricity – for example, Nuclear, Hydro and Wind (which only become a usable energy source upon electricity generation) - are dealt with differently (see next section).

When all forms are received, the data are checked by calculating the thermal efficiencies for several fuels, such as Natural Gas and Coal, where efficiency is generation divided by fuel used. Typical thermal efficiencies for these fuels are around 30-35% and 45-50% respectively. Any derived efficiencies diverging from this are investigated. In addition, the data are compared with the monthly data previously received. Any large disparities are

investigated, and any resulting monthly and quarterly revisions are then published with the annual data.

All types of fuel, including any co-fired with other fuels, are reported. The data are then collated and aggregated, by type of fuel (with less common fuels aggregated with major categories, such as Petroleum Coke with Oil), to give overall totals for the amount of fuel used. Fuel used data are initially reported by mass (aside from Natural Gas, which is reported in therms), but are also reported in energy units in DUKES tables 5.4 and 5.6. In this case, calorific values (CVs) are used to convert these to joules, and then to million tonnes of oil equivalent (mtoe) or GWh. CVs for unusual fuels are also reported on the form.

MPPs primary electricity fuel used: The amount of fuel used by Nuclear stations is not easily reported by generators (since stations are only periodically refuelled with uranium). It is therefore calculated by using thermal efficiencies calculated by British Energy and Magnox, applied to the amount of generation reported. These thermal efficiencies are calculated as a ratio of the heat produced from the nuclear reaction to the electricity generated, averaged across all the Nuclear power stations.

Non-thermal renewable sources, such as Hydro, Wind and Solar Photovoltaics do not use fuel sources in order to generate electricity. For the purposes of aggregating the amount of fuel used in generation, that used by these sources is considered, by international convention, to be the same as the amount of electricity generated.

MPPs Co-firing adjustments: Some power stations, whilst reporting output from thermal capacity, such as Coal, Natural Gas or Oil, may actually be co-fired with other thermal fuels, such as Oil or types of Biomass. Adjustments are therefore made to the total electricity supplied from Coal, Oil and Biomass, to account for this co-firing, by utilising the proportions of the various fuels reported. These adjustments are calculated by AEA Technology as part of their renewables work. Further information on this can be found in the renewables methodology note, available at:

<https://www.gov.uk/government/publications/renewable-energy-statistics-data-sources-and-methodologies>

Renewable generation adjustments: Electricity generation data for renewables are also collected on an annual basis by AEA Technology, and are used to produce the Renewables chapter of DUKES. For consistency, the data reported there must match that reported in the Electricity chapter. In the case of Hydro, more detailed information is used by AEA, so both the MPPs and other generators' generation figures are adjusted to match. For Wind and Biomass, the MPPs figures are accurate, so only the other generators' generation figure is adjusted.

Other generators' generation and fuel used: See Section 5 for more information.

Trade: Imports and exports data are downloaded on a half-hourly basis from National Grid (for trade between Great Britain, GB, and France) and the Single Electricity Market Operator (for trade between Northern Ireland and the Republic of Ireland). The two sets of data are each aggregated to give annual totals, and then summed to give total imports and exports.

3.2.2 Electricity Demand

Electricity demand is split into that supplied via the PDS and that by other generators. Both parts include final consumption (industry, transport, domestic, commercial, agriculture, public administration and miscellaneous), losses and energy industry use.

PDS Sales data receipt and aggregation (see Annex 3): PDS sales data comes from both the MPPs survey (several of whom are also electricity suppliers) and the Electricity suppliers survey. When all sales surveys are received, they are initially checked to ensure the data matches, as closely as possible, the monthly data previously received. Any large disparities are investigated, and any resulting revisions to monthly data are noted. The data from the sales surveys are then collated and aggregated, to give overall totals for the various sectors. In the case of domestic sales, this is broken down by tariff type (standard, economy 7, prepayment etc), rather than by units consumed at peak/off-peak times.

Other generators' consumption: See Section 5 for more information. Note: Autogeneration – and its consumption - is currently only in the industrial and public administration sectors.

Iron and Steel: Data for electricity consumed from the grid by the iron and steel industry is provided by the ISSB survey, rather than the Electricity Sales survey, as it is considered to be more accurate as it is from a direct survey of final users. The difference between this figure, and that obtained from the Electricity Sales survey, is removed from/added to the other industrial categories, according to their share of overall industrial consumption. For autogenerators, the total consumption figure for the iron and steel industry from the autogenerators' survey is used, after deducting blast furnaces, coke ovens and losses (see below).

Energy Industry Use: Electricity consumed from the grid by coke ovens, petroleum refineries, and in oil and gas extraction are provided by the sales survey. For autogenerators, ISSB provide consumption data for coke ovens and blast furnaces, while petroleum refineries consumption data comes from the autogenerators survey, from self generation, often CHP, plants.

Electricity generation consumption includes electricity used on works by generators, as well as that consumed in pumping by pumped storage stations. The amount of electricity used in pumping the water uphill is greater than that generated as the water flows downhill through the turbines. The net supply from pumped storage schemes across the year is therefore negative. The MPPs survey and the autogenerators survey provide this data on own use of electricity.

Losses: Losses make up the final element of electricity demand. For the PDS, this consists of transmission losses, distribution losses and theft.

An Ofgem consultation document, in 2004, estimated that approximately 0.3% of electricity is lost to theft. Therefore, this percentage of electricity available is deemed to be lost in this way. A link to the consultation is as follows:

<https://www.ofgem.gov.uk/publications-and-updates/theft-electricity-and-gas-discussion-document?docid=1&refer=Markets/RetMkts/Compl/Theft>

Annual transmission losses are obtained by aggregating the monthly Elexon transmission loss returns.

Distribution losses are derived from the monthly distributors' returns (see Annex 4) for 13 of the 15 DNOs. For the two remaining, Scottish DNOs, information for the latest year is obtained from the annual Ofgem report on distribution units and loss percentages (given in financial years). The data reported for electricity distributed and distribution losses are aggregated, with an annual ratio obtained for the percentage of electricity distributed that is lost. This ratio is applied to the electricity available figure already computed (total supply minus electricity used on works and in pumping), after deducting transmission losses, to give a final figure for distribution losses.

Generation by autogenerators in the iron and steel industry also has losses – this is reported in the ISSB survey, and reallocated from the total PDS losses to the losses figure for other generators.

3.2.3 Balancing Supply and Demand

DUKES tables 5.1 to 5.3 are produced and published as energy balances, where total demand equals total supply. Table 5.3 also shows balances for the PDS and other generators separately. The statistical difference (SD) between supply and demand arises because data collected on production and supply do not match exactly with that collected for consumption. The gross demand figure is adjusted to be within +/- 0.5% of the total supply figure.

Electricity supply data are generally considered to be more accurate than demand data. Therefore, where a large SD exists between the two, it is the PDS demand figures that are adjusted to close the deficit. The ISSB, Losses and Energy Industry Use figures are not adjusted while the annual domestic sales figures are also considered to be accurate. Therefore, adjustments, if required, are made to the industrial and commercial sales figures only, at individual category level.

Adjustments are carried out with consideration of the current economic and energy climate, and past trends of the individual time-series, rather than using a statistical methodology. When considering the past time-series, it may also be necessary to redistribute consumption from one category to another. A new, more statistically robust, mechanism for carrying out these adjustments is being developed.

3.2.4 Capacity

Information on generation capacity is also published in DUKES tables 5.7 to 5.9. For MPPs, this is collected on a Transmission Entry Capacity (TEC) basis, and in MW terms. For other generators, this is collected on a Declared Net Capacity (DNC) basis. More information on these definitions can be found in the glossary, or in chapter 5 of DUKES, available at:

<https://www.gov.uk/government/statistics/electricity-chapter-5-digest-of-united-kingdom-energy-statistics-dukes>

MPPs capacity data receipt and aggregation (see Annex 5): These data, which represent the capability to generate, come from the MPPs survey, and, and are broken down by

approximately ten categories of generation, and also by UK country. When all returns are received, the reported capacities are checked against that reported for the previous year, with any reporting errors corrected, and any large disparities investigated. The data for each category are then aggregated for each UK country, and for the UK as a whole. For some renewable technologies, an adjustment is made to the reported figures to account for intermittency of them. In the case of Wind, this involves multiplying the reported figure by 0.43, while small-scale Hydro is multiplied by 0.365. Further information on the origin of this adjustment can be found in the renewables methodology note, available at: <https://www.gov.uk/government/publications/renewable-energy-statistics-data-sources-and-methodologies>

Other generators' capacity: See Section 5 for more information. Other generators' capacity is collected on a DNC basis. As with MPPs, the Hydro and Wind capacity figures are adjusted by the intermittency factors given above. For each of the five categories, the data are aggregated (for the UK as a whole), with an additional breakdown of the total capacity showing the industrial/commercial sectors in which these schemes operate.

3.2.5 Maximum load, Load factors & Thermal efficiencies

Maximum Load: Maximum load data are provided by National Grid (for GB) and Northern Ireland Electricity (for Northern Ireland, NI) on an annual basis. Upon receipt of the maximum load met, and the time and date it happened in GB, the corresponding figure is sought from NI, to give a UK peak figure. The maximum demand as a percentage of UK capacity can be obtained by dividing this by the amount of capacity available to the grid to meet this demand. This capacity is the total TEC figure for MPPs only, and does not include any capacity available from other generators nor that available via the interconnectors.

Load Factors: Plant load factors are an indication of how well utilised plant have been across the year, expressed as a percentage of the maximum possible generation. These are calculated for six categories of generation, as well as an overall load factor for all plant and a system load factor. These are calculated by dividing the total electricity supplied (after deducting own use of electricity) across the year by the maximum possible generation for each plant. The maximum possible generation is calculated by multiplying the total TEC for each technology by the number of hours in the year.

Thermal Efficiencies: Thermal efficiencies are calculated for three technologies, Combined Cycle Gas Turbines (CCGT), Coal and Nuclear. For CCGT and Coal, these are calculated by dividing total generation for each of the categories by the total fuel used, in terms of energy. For Nuclear, this information is obtained from British Energy. To obtain the denominator in the same unit of energy, CVs and conversion factors are used.

4. Monthly/Quarterly Statistics

Each month, surveys are carried out of generators, suppliers, and distributors. This is supplemented with additional data from the quarterly autogenerators survey and several other sources. Several other components are estimated using annual figures divided by four – where the current year is not yet available, the previous year's monthly/quarterly estimates are used. Data are published two months (for monthly data), and one quarter

(for quarterly data) in arrears, with revisions made to the current calendar year if revised data has been received.

4.1 Data Sources

4.1.1 Main Electricity Surveys

- Major Power Producers (MPPs) survey (monthly): census of approximately 35 MPPs surveyed electronically – for fuel used, electricity generated, electricity supplied to the grid, broken down by generation type/fuel, as well as sales.
 - Coverage: all MPPs, representing approximately 90% of electricity generation
 - Response rate: approximately 100%
 - Some MPPs' power stations will report individually
- Electricity Suppliers survey (monthly): approximately 30 main suppliers surveyed electronically – sales data split by industry; services; domestic; and other.
 - Covering approx. 95% of electricity sales
 - Response rate: approximately 100%
- Electricity Distributors survey (monthly): 12 Distribution Network Operators surveyed – for distribution and losses information.

4.1.2 Additional Data Sources

- Autogenerators survey (quarterly): See Section 5 for more information.
- National Grid: electricity exports/imports to/from France, half-hourly, available at: <http://www2.nationalgrid.com/uk/Industry-information/electricity-transmission-operational-data/>
- Single Electricity Market Operator: electricity exports/imports to/from the Republic of Ireland, half-hourly, available at: <http://www.sem-o.com/Pages/default.aspx>
- Elexon (monthly): transmission losses and generation data for the GB National Grid.
- British Energy (annual): Nuclear thermal efficiencies
- BEIS (annual internal analysis): Calorific Values and Conversion factors, used to convert fuel masses to energy units. More information on this can be found at: <https://www.gov.uk/government/statistics/dukes-calorific-values> and <https://www.gov.uk/government/publications/energy-statistics-explanatory-notes>

4.2 Methods

4.2.1 Electricity Supply

Electricity supply includes electricity produced (generated) and net trade. Electricity generated is separated into MPPs and other generators (which include autogenerators and other smaller renewable generators). MPPs plus transfers (purchases) from other generators, as well as net trade, provide the supply for the public distribution system (PDS), while other generators less transfers provide the non-grid supply.

MPPs generation data receipt and aggregation (see Annex 6): When all generation forms are received, they are aggregated, to give overall totals for the various sectors. Figures are quality assured by comparison with data given for the previous month, as well as the corresponding month in the previous year. The generation form consists of generation, own use of electricity and net electricity supplied (which deducts own use of electricity from generation), by generation technology. For pumped storage plants, any electricity consumed in pumping is also reported.

Net electricity supplied is the mandatory data required. Whilst electricity generated and own use of electricity are also reported by most generators, for consistency, these series are calculated by applying fixed percentages to the net supplied figures. All three series are then collated and aggregated by technology.

MPPs fuel used data receipt and aggregation (see Annex 7): Data on the volume of fuel used in generation is reported in the MPPs survey. As with the annual data, this applies to secondary forms of electricity only, such as Coal, Natural Gas or Oil. (see annual section on 'MPPs primary electricity fuel used').

When all forms are received, the data are checked to ensure this matches, as closely as possible, the monthly data previously received. Any large disparities are investigated, and any resulting monthly revisions are noted. As with the annual, the reported data are checked by calculating the thermal efficiencies for several fuels, such as Natural Gas and Coal, where efficiency is generation divided by fuel used, with any disparities investigated. All types of fuel, including any co-fired with other fuels, are reported. The data are then collated and aggregated, by type of fuel (with less common fuels aggregated with major categories, such as Petroleum Coke with Oil), to give overall totals for the amount of fuel used. Fuel used data are initially reported by mass (aside from Natural Gas, which is reported in therms), but are also reported in energy units in ET table 5.1. In this case, calorific values are required to convert these to joules, and then energy conversion factors to million tonnes of oil equivalent (mtoe) or GWh. CVs for unusual fuels are also reported on the form.

Co-firing adjustments: Some power stations, whilst reporting output from Coal or Oil-fired capacity, will actually be co-fired with Oil and/or thermal renewable sources (for example, Biomass). As with the annual data, co-firing adjustments are made to Coal, Oil and Biomass, using the latest annual figure apportioned across the months according to the months' shares in total supply.

Other generators' generation and fuel used: See Section 5 for more information

Transfers to the PDS from other generators: The quarterly autogenerators survey includes information on transfers to the PDS. However, this is required on a monthly basis for table ET 5.4. Monthly estimates are therefore calculated by applying that month's share of quarterly MPP net electricity supplied to the quarterly transfers figure. Where the quarterly transfers data are not yet available, the month on month growth rates from the previous year are applied to the latest month.

Trade: Imports and exports data are downloaded on a half-hourly basis from National Grid (for trade between GB and France) and the Single Electricity Market Operator (for trade between Northern Ireland and the Republic of Ireland). The two sets of data are aggregated to give monthly totals for imports and exports.

4.2.2 Electricity Demand

Electricity demand is split into that consumed by the PDS and that by other generators. Both parts include final consumption (industry, transport, domestic, commercial, agriculture, public administration and miscellaneous), losses and energy industry use.

Sales data receipt and aggregation (see Annex 8): PDS sales data comes from both the MPPs survey (several of whom are also electricity suppliers) and the Electricity suppliers survey. When all sales surveys are received, they are initially checked against that provided the previous month and the corresponding month in the previous year, with any large disparities investigated. Unlike the annual data, which is disaggregated into several categories, the monthly sales forms only cover four sectors (domestic, services, industry and other), and these headings also cover some of the other sectors (for example, energy industry use and public administration). Table ET 5.5 also splits total PDS consumption between England and Wales, Scotland and Northern Ireland - each supplier includes this information on its form.

Other generators' consumption: See Section 5 for more information. Autogenerators' consumption data is likewise compiled and aggregated for each of the sectors, from the autogenerators survey.

Transport: PDS transport consumption is given as the annual figure divided by four, while autogenerators' consumption comes from the quarterly autogeneration survey.

Industry (and Iron and Steel): Sales data for industry as a whole is from the sales survey. PDS electricity consumed from the grid by the Iron and Steel industry is estimated as the annual figure divided by 12. To obtain the other industry figure, Iron and Steel and energy industry use (minus that used in generation) are deducted from the overall industry figure. For autogenerators, the total consumption figure for the iron and steel industry from the autogenerators' survey is used, after deducting blast furnaces, coke ovens and losses (see below).

Energy Industry Use: Electricity consumed from the PDS by coke ovens, petroleum refineries, and in oil and gas extraction are estimated by using the latest year's figure divided by four. This is the same for autogenerators' coke ovens and blast furnaces, while petroleum refineries data comes from the autogenerators survey.

Electricity generation consumption includes electricity used on works by generators, as well as that consumed in pumping by pumped storage stations. This data comes from the MPPs survey for the PDS, and the autogenerators survey for other generators.

Losses: Losses consist of transmission losses, distribution losses and theft. Transmission losses data for the GB National Grid comes from Elexon on a monthly basis. Elexon manages the systems and services which balance and settle the wholesale electricity market. From the data reported for electricity supplied to the grid and transmission losses, a ratio is obtained for the percentage of electricity transmitted lost. For each month, this ratio is applied to the electricity available figure already computed (electricity supply minus used on works and in pumping).

Distribution losses are obtained from the 13 monthly distributors' returns.

The data reported for distribution losses are aggregated. As these returns do not include the two Scottish DNOs, the totals for each month are upgraded by a factor to take account of this, as well as the theft component of losses. This factor is obtained by the ratio of the latest annual losses figure (from DUKES), minus the transmission losses figure obtained above, to the aggregated monthly distribution losses figure from the corresponding year

The distribution and transmission losses figures obtained are summed to give a total Losses figure for the PDS.

Other generators' losses are the latest year's figure divided by four, and reallocated from the total PDS losses.

Energy Trends Table 5.5 shows losses combined with the statistical difference term. For the latest three months (until demand and supply have been balanced at the end of the quarter), this combined term is highly provisional.

4.2.3 Balancing Supply and Demand

Balancing of total demand and total supply is carried out on a quarterly basis. As with the annual balances, the statistical difference (SD) is usually within +/- 0.5% of total supply. As with the annual, supply data are generally considered to be more accurate than demand data. Therefore, where a large SD exists between the two, it is the electricity demand figures that are adjusted to close the deficit. Some of these components cannot be adjusted, as they may be estimated from annual data, or, in the case of autogenerators' consumption, are a small component of overall demand. Therefore, adjustments are made to the monthly PDS industrial/commercial/domestic/other sales figures, at an aggregate level.

Adjustments are carried out with consideration of the current economic and energy climate, and past trends of the individual time-series, rather than using a statistical methodology. When considering the past time-series, it may also be necessary to redistribute consumption from one category to another. A new, more statistically robust, mechanism for carrying out these adjustments is being developed.

4.2.4 Annual-Quarterly-Monthly Reconciliation

It is important that the monthly and quarterly statistics published by BEIS are both consistent with each other, and with the better quality annual statistics.

The reconciliation process begins with the receipt of the annual survey forms. These are thoroughly checked against the sum of the monthly data previously received. Any large discrepancies between the two sources are investigated, with monthly data resubmitted by the data suppliers if necessary to ensure consistency with the annual data.

When the production of the annual data for DUKES is complete, the second phase of the reconciliation process is begun. Alongside the publication of DUKES, the previously published monthly and quarterly tables are re-published consistent with DUKES. In order to do this, all the monthly and quarterly data are revised to match the annual data, with any balancing adjustments made amended to match the annual adjustments, and estimates and calculations based on previous years' annual data updated.

As an indication of the scale of the adjustments, the table below shows revisions made to the total electricity supply series, for the four quarters of 2009, as a result of the reconciliation process.

	Provisional figures (published in March 2010)	Final figures (published in July 2010)	Absolute adjustment	Adjustment as percentage of original figure
2009Q1	104,928	105,770	842	0.8
2009Q2	86,029	87,249	1,220	1.4
2009Q3	85,824	86,896	1,072	1.2
2009Q4	97,834	98,611	777	0.8
2009	374,615	378,526	3,911	1.0

5. Other generators

As described in previous sections, data on electricity generation by 'other generators' feed into the quarterly and annual electricity tables. The tables listed below specifically separate out the contribution from 'other generators' from Major Power Producers.

Annual (DUKES)	tables	Content
5.3		Overall production and consumption by sector within which the scheme is classified. Also provides a figure for transfer to the public supply system.
5.4		Fuel used in generation (in mtoes)
5.6		Fuel used, electricity generated and supplied by fuel type (in GWh)
5.7		Plant capacity by fuel type
5.9		Plant capacity by industrial sector
5.12		List of large scale CHP schemes ¹
Quarterly tables		
ET 5.1		Fuel used, electricity generated and supplied

¹ Only CHP schemes that have given permission for their details to be published

5.1 Data collection

There are several sources of data feeding into the tables listed above and the annual data collection differs from the quarterly.

5.1.1 Annual data

In 2008 'other generators' produced 34,365GWh of electricity, this electricity came from the following sources:

- CHPQA: 50 per cent of production from 'other generators' comes from good quality combined heat and power (CHP). Good quality CHP data are collected annually through the CHPQA scheme and are published in chapter 6 of DUKES. This data collection process is described on our CHP statistics web page. The CHPQA data collection system covers all plants which are certified as having Good Quality CHP, this includes 6 plants that are also classified as Major Power Producers. To avoid double counting the fuel used and electricity produced by MPP plants are deducted from the CHP figures published in chapter 6. A further 15 per cent of electricity produced by 'other generators' is produced by the 'power only' part of the CHP plants, which consists of the electrical capacity in CHP plants which do not qualify as Good Quality and is derived from the data collected through the CHPQA process.
- EGI quarterly survey: A further 15 per cent of electricity generation came from 'power only' plants. Data for these plants are collected quarterly via a survey run by the Office of National Statistics (ONS) on behalf of BEIS. The quarterly EGI survey is explained in more detail in Section 5.2.
- RESTATS database: The final 20 percent is produced by renewable thermal plants (e.g. landfill gas) which are not covered by CHPQA or the ONS survey and by non-thermal renewable electricity plants (e.g. wind turbines). This data is collected via the renewables database (<https://restats.decc.gov.uk/cms/welcome-to-the-restats-web-site/>).
- Iron and Steel Statistics Bureau (ISSB): The data sources listed above include electricity generation by plants within the Iron and Steel industry. To ensure consistency with other chapters in DUKES this data is replaced with that received from ISSB. ISSB data is considered to be of better quality as ISSB work with the Iron and Steel companies on a daily basis.

5.1.2 Quarterly data

The EGI survey carried out by ONS is the main data source for the quarterly data. The sample for this survey consists of just over 100 sites selected from the CHPQA database. There are also 15 sites in the sample which are not CHP (power only sites). This survey is known as the EGI survey and a copy of the form which is sent to each company to collect the information can be found in Annex 10.

Estimates for quarterly renewables data are made using the Renewable Obligation Certificate (ROC) register as guidance. ROC data is publically available from the Ofgem

website². The ROC database contains information on the number of ROCs issues each month by technology type, this can be converted into generation (for example for onshore wind 1 ROC is awarded for each MWh generated). At the time of BEIS's quarterly publication only the first two months of each quarter are available. Therefore data for the third month is estimated using an average of the two preceding months. This is then updated with actual data in the following quarter. Data for wind and hydro generation by MPPs (which are collected by BEIS on a monthly basis) are deducted to leave an estimate for renewable generation by 'other generators'.

5.2 Methodology and data quality relating to the EGI survey

5.2.1 Sample size and weighting

Once a scheme has been selected for the EGI survey it will remain in the sample until it closes down (in 2009 9 schemes left the sample). Each year a list of new CHP schemes is obtained and sites with a capacity of over 1MW are selected to replace those schemes leaving the survey. The schemes are selected to ensure the sample maintains a reasonable number of schemes for each fuel type.

The sample consists of just over 100 CHP sites which is less than 10 per cent of the schemes on the CHPQA database. However, as the larger schemes are chosen the proportion of generation covered by the quarterly survey is higher (67 per cent). The table below gives the proportion of generation by each fuel type which is covered in the survey (based on 2008 generation figures).

Fuel type	Total generated (sites in EGI Survey) GWh	Total generated (all CHP sites) GWh	% covered in survey
Coal	604	611	99
Oil	386	2,449	16
Natural gas	10,750	15,125	71
Thermal renewables	500	1,161	43
Other	2,535	2,709	94
Total	14,775	22,055	67

As the annual generation figures are known weights can be calculated for the survey so the results are representative of all CHP sites. However, as the annual results are only available at the end of the year the previous year's weights are used for the initial quarterly publications. These are then updated after the publication of DUKES and the quarterly figures revised accordingly. The table below shows the difference between the results obtained from the quarterly survey and those calculated from the annual data sources at the end of the year.

The biggest percentage change is for generation by oil and 'other' fuels. This is partly because these categories have the lowest generation figures and also because the oil in the quarterly survey refers to fuel oil with other oils (e.g. gas oil) being grouped in the 'other' category until more detailed data is available at the end of the year.

² <https://www.renewablesandchp.ofgem.gov.uk/>

Fuel type	Sum of 2008 quarterly survey (GWh)	Annual 2008 (GWh)	% difference
Coal	4,307	4,063	6%
Oil	1,900	2,434	-22%
Natural gas	16,115	15,170	6%
Thermal Renewables	7,841*	7,704	2%
Other	2,674	2,293	17%
Total	32,837	31,664	4%

* Includes estimate from ROC database

As the EGI survey is the only source of data which breaks down the annual generation figures for each quarter the weighting system assumes that sites in the sample follow the same seasonal pattern of generation as the sites outside of the sample.

5.2.2 Response rates

The response rate for the EGI survey is high (over 90% each quarter). In cases where schemes do not respond data from the previous quarter are used.

There is a degree of estimation relating to the data on fuel used. A number of plants only know the total amount of fuel used but not necessarily the split between heat and electricity generation. In these cases a formula is used to split the fuel. The ratios used for generation:heat are as follows: gas 1:1, oil 1.5:1 and coal 3:1.

Quality assurance is carried out on the data returned, for example fuel efficiencies are calculated for each plant. This also provides an indication of whether the above ratios used for fuel allocation are realistic. Any efficiencies that are below 10 percent and above 90 percent are clarified with data providers.

Glossary and Acronyms

Autogenerators - businesses who generate electricity primarily for their own use, and sell any surplus to the Public Distribution System

BEIS – Department for Business, Energy and Industrial Strategy

Biomass – plant, animal or waste matter, burned to produce electricity

Blast furnace gas – residual gas from blast furnaces (used for steel production), used to generate electricity onsite.

Calorific Values – amount of energy stored by a mass of fuel, measured in joules per tonne (or joules per cubic metre for Natural Gas)

Capacity - a measure of power stations' ability to generate, usually measured in mega-watts.

Co-firing – the inclusion of other thermal fuels alongside a main fuel, in the generation of electricity, typically Biomass and Oil.

Coke oven gas – residual gas from coke ovens (used to create coke, for iron smelting), used to generate electricity by onsite.

Colliery Methane - methane found in coal seams and beds. It is usually used on the coal mine site or nearby, either for heating or for electricity generation

CCGT - Combined Cycle Gas Turbine. Power station using natural gas to generate electricity through a gas turbine, with waste heat used to generate via a steam turbine. More efficient than stations employing a single gas or steam turbine.

CHP - Combined Heat and Power. Process whereby the residual lower temperature waste heat, obtained from electricity generation from thermal sources, is used for heating purposes, usually nearby premises.

CHPQA – CHP Quality Assessment. Scheme to assess those CHP schemes qualifying as 'Good Quality' (where a certain proportion of the waste heat is utilised).

Conventional thermal – power stations that generate electricity by burning thermal fuels, to produce steam from water to drive steam turbines.

DNC – Declared Net Capacity. The maximum power available for export from a power station, minus electricity used to run the plant.

DNO – Distribution Network Operator. Operator of one of the 15 United Kingdom regional electricity distribution networks.

DUKES – Digest of United Kingdom Energy Statistics

ET – Energy Trends

EU-ETS - European Union Emissions Trading System

GW - Gigawatt – Rate of energy consumption or production, in joules per second. 1 GW = 1000 MW

GWh - Gigawatt-hour – Quantity of energy consumed or produced in one hour. 1 GWh = 1000 MWh

Heat sold – Heat generated and sold to a third party, typically the waste heat from CHP plants.

Hydro-electric – electricity generated from the flow of water over turbines, usually downhill from a reservoir or dammed river.

ISSB – Iron and Steel Statistics Bureau

MW - Megawatt - Rate of energy consumption or production, in joules per second. 1 MW = 1000 kilowatts (kW)

MWh – Megawatt-hour - Quantity of energy consumed or produced in one hour. 1 MWh = 1000 kilowatt-hours (kWh)

MPPs – Major Power Producers

Natural gas – methane rich gas burned to drive turbines for electricity generation.

Nuclear – electricity generated from the heat produced from the nuclear fission of uranium.

Load factor – A measure of the utilisation of a power plant, given by the amount of electricity generated over a period of time divided by the maximum possible generation (given by the capacity multiplied by the number of hours in the period).

Thermal Efficiency – Efficiency of conversion of the energy content of a fuel into electricity. A proportion of the energy content of a fuel is lost as waste heat in the generation process.

PDS – Public Distribution System, or the National Grid.

Solar Photovoltaics – Cells that convert sunlight to usable electricity.

Primary electricity – electricity generated from a source that is immediately converted to usable electricity, eg nuclear or hydro-electric

Pumped storage – a form of electricity storage and peak generation, whereby electricity is used to pump water uphill to a reservoir when it is not required for consumption (ie. at off-peak times), and electricity is generated (for consumption at peak times), by releasing the water to flow downhill through turbines (to another reservoir).

SD – Statistical Difference – the difference between total demand and total supply.

Secondary electricity – electricity generated by utilising the heat obtained from burning a natural primary sources of energy, eg coal, gas or biomass.

TEC – Transmission Entry Capacity – a measure of capacity

Therm – a unit of energy, typically used for natural gas

Wind – electricity produced from natural wind flows over turbines

Annex 1: Annual Generation

GENERATORS

GA-SA-NIGA1

RESTRICTED –COMMERCIAL

(when completed)

PLEASE RETURN BY 20 FEBRUARY 2010

COMPANY NAME :

Contact Name:

Telephone Number:

THE PERIOD COVERED BY THIS FORM:

1 January 2009 to 31 December 2009

1. Generation and Supply of Electricity

	Electricity Generated		Own Use		Electricity Supplied
Type of Plant used	MWh		MWh		MWh
1.1 Fossil fuelled plant:	Col 1	minus	Col 2	=	Col 3
1.1.1 Conventional Steam (totals)	0		0		0
Power station name					0
					0
					0
					0
					0
					0
1.1.2 Combined Cycle	0		0		0
Power station name					0
					0
					0
					0
1.1.3 Single Cycle					0
					0
1.2 Nuclear					0
1.3 Hydro:					
1.3.1 Natural Flow					0
1.3.2 Pumped Storage					0
1.3.3 Electricity used for pumping and motoring					
1.4 Wind					0
1.5 Other (Please specify individually)					0
					0
					0
					0
Total	0		0		0

Conventional Steam :
If possible please enter data for individual power stations.
Otherwise enter totals only
in first row.

Combined Cycle :
If possible please enter data for individual power stations.
Otherwise enter totals only
in first row.

Annex 2: Annual Fuel Used

GENERATORS - FUEL USED

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RESTRICTED –COMMERCIAL

(when completed)

PLEASE RETURN BY THE 20th FEBRUARY

COMPANY NAME :

Contact Name:

Telephone Number:

THE PERIOD COVERED BY THIS FORM:

1 January 2009 to 31 December 2009

2. Combustible fuels used in fossil fuelled plant

2.
1

Fuel input to conventional steam plant

Total quantity used to generate electricity

- | | | |
|-------|---------------------|-----------------|
| 2.1.1 | Coal ⁽¹⁾ | tonnes |
| 2.1.2 | Oil | tonnes |
| 2.1.3 | Diesel/Oil Engine | tonnes |
| 2.1.4 | Natural gas | thousand therms |
| 2.1.5 | Sour gas | thousand therms |

2.1.6

Other: PLEASE INCLUDE UNUSUAL FOSSIL FUELS (E.G PETCOKE) HERE (enter in the appropriate row(s)) :

Quantity

Associated CVs (GJ/tonne)

0

N/A
N/A

2.1.7

Other (please give in tonnes) PLEASE INCLUDE ALL BIOMASS HERE :

Quantity

Associated CVs (GJ/tonne)

	Biomass Consumption
	If possible please indicate power station where each bio-fuel was consumed.
	Otherwise enter totals only for each biomass fuel.

TOTAL	0
--------------	----------

2.2	Fuel input to combined cycle plants	Total quantity used to generate electricity
------------	--	--

2.2.1	Oil	tonnes	0
	power station name		

2.2.2	Diesel/Oil Engine	tonnes	0
	power station name		

2.2.3	Natural gas	thousand therms	0.0
	power station name		

2.2.5	Sour Gas	thousand therms	0
	power station name		

2.2.4	Other (please specify with units) :		

2.3	Fuel input to single cycle plants	Total quantity used to generate electricity
------------	--	--

2.3.1	Oil	tonnes	
2.3.2	Diesel/Oil Engine	tonnes	
2.3.3	Natural gas	thousand therms	

2.3.4	Other (please specify with units) :		

Combined Cycle :

If possible please

enter data for individual power stations.

Otherwise enter totals only

in first row for each fuel.

Footnotes:

⁽¹⁾ Excluding coke which should be included under "Other" at 2.1.6

Annex 3: Annual Sales

SALES

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RESTRICTED –COMMERCIAL

PLEASE RETURN BY 20 FEB 2010

COMPANY NAME :

Contact Name:

Telephone Number:

THE PERIOD TO BE COVERED BY THIS FORM:

1 January 2009 to
31 December 2009

1. Sales of electricity to final consumers in calendar year ended 31 DECEMBER 2009 (1)

	Industrial Sector ⁽²⁾	Quantity sold MWh
1.1		
1.1.1	Iron and Steel	
1.1.2	Non-ferrous metals	
1.1.3	Mineral products	
1.1.4	Chemicals	
1.1.5	Mechanical engineering and metal products	
1.1.6	Electrical and instrument engineering	
1.1.7	Vehicles	
1.1.8	Food, beverages and tobacco	
1.1.9	Textiles, clothes, leather and leather products	
1.1.10	Pulp, paper, publishing and printing	
1.1.11	Other industries	
	Total Industrial Sector	0

1.2	Commercial Sector ⁽²⁾	Quantity sold MWh
1.2.1	Wholesale and retail distribution	
1.2.2	Insurance, banks, offices	
1.2.3	Hotels and restaurants	
1.2.4	Combined domestic and commercial premises	
1.2.5	Post and telecommunications	
	Total commerical sector	0 Quantity sold MWh
1.3	Transport and Storage Sector ⁽²⁾	
1.4	Agriculture sector ⁽²⁾	
1.5	Public lighting sector ⁽²⁾	
1.6	Public administration sector ⁽²⁾	
1.7	Energy industries ⁽²⁾	Quantity sold MWh
1.7.1	Coal and coke	
1.7.2	Extraction of oil and gas	
1.7.3	Petroleum refineries	0
1.7.4	Nuclear fuel production	0
1.7.5	Gas and electricity supply	
	Total Energy Sector	0

1.8	Domestic Sector ⁽²⁾	Quantity sold MWh
1.8.1	Purchase at the standard rate where each unit of electricity carries the same charge ⁽³⁾ and some form of prepayment system is used eg token, key, card or coins	0
1.8.2	All other purchases at the standard rate where each unit of electricity carries the same charge ⁽³⁾	
1.8.3	Purchases that include an element of off-peak electricity priced at a reduced unit rate and some form of prepayment system is used eg token, key, card or coins	0
1.8.4	All other purchases that include an element of off-peak electricity priced at a reduced unit rate	0
1.8.5	Sales to domestic consumers under any other arrangement (please specify)	0
	Total Domestic Sector	0
1.9	Other Sectors ⁽²⁾	Quantity sold MWh
1.9.1	Construction	
1.9.2	Other services	
1.9.3	Unclassified (please specify)	
	Total Other Sectors	0
1.10	Total All Sectors	0
2	Exports	Quantity sold MWh
2.1	Exports (via interconnectors with France or Ireland)	0

Footnotes:

(1) ie consumers to whom bills are rendered, including estimates for electricity sold but not yet billed (unbilled revenue).

(2) See accompanying notes (AN1) for a full description of these sectors.

(3) or where units in excess of a certain set level are sold at a different rate.

Annex 4: Annual Distribution

DISTRIBUTORS

RESTRICTED –COMMERCIAL

PLEASE RETURN BY 20 FEBRUARY 2010

COMPANY NAME :

Contact Name:

Telephone Number:

THE PERIOD COVERED BY THIS FORM:

1 January
2009 to 31
December
2009

1. Reconciliation of Electricity Received and Electricity Distributed.

Please give figures in **MWh**

1.	Electricity received at grid supply points	1	Electricity received from elsewhere (eg embedded generators)
1		2	
	Distribution losses incurred in your authorised area		
1			
3			
	Total electricity distributed in your authorised area		
1			
4			

Please check that: Box 1.4 = Box 1.1 + Box 1.2 - Box 1.3

Annex 5: Annual Capacity

GENERATORS - CAPACITY

RESTRICTED –COMMERCIAL

(when completed)

PLEASE RETURN BY THE 20th FEBRUARY

COMPANY

NAME :

Contact Name:

Telephone

Number:

4. Capacity of plant at the end of December 2009

Type of plant/fuel used	Transmission Entry Capacity (TEC) MW ⁽⁵⁾	Capacity on a different basis (please define this basis in the Box below) MW
		Genset Registered Capacity (GRC) MW - Internal measure
4.1 Coal		
4.2 Oil		
4.3 Natural and Sour gas		
4.4 Nuclear		
4.5 Diesel/Oil engine		
4.6 Hydro: Natural Flow		
4.7 Hydro: Pumped Storage		
4.8 Wind		
4.9 Other ⁽⁶⁾ (please specify individually)		
.....		
4.10 Total	0	0

Footnotes:

(5) Transmission Entry Capacity (TEC) is a generator's maximum allowed export capacity onto National Grid's transmission system. If you wish to use a different basis for reporting capacity, please use the adjacent column.

(6) Including mixed fired plants.

Annex 6 – Monthly generation

GENERATORS

GM-SM-NIGM-Gen &
Supply

RESTRICTED -COMMERCIAL
(when completed)

PLEASE RETURN ONE CALENDER MONTH AFTER THE END OF THE DATA MONTH.

COMPANY NAME :
Contact Name:
Telephone Number:

THE PERIOD COVERED BY THIS FORM:

1. Generation and Supply of Electricity

Type of Plant used	Electricity Generated MWh Col 1	minus	Own Use MWh Col 2	=	Electricity Supplied MWh Col 3
1.1 Fossil fuelled plant:					
1.1.1 Conventional Steam (totals) Power station name	0		0		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
1.1.2 Combined Cycle	0		0		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
1.1.3 Single Cycle	<input type="text"/>		<input type="text"/>		0
1.2 Nuclear	<input type="text"/>		<input type="text"/>		0
1.3 Hydro:					
1.3.1 Natural Flow	<input type="text"/>		<input type="text"/>		0
1.3.2 Pumped Storage	<input type="text"/>		<input type="text"/>		0
1.3.3 Electricity used for pumping & motoring	<input type="text"/>		<input type="text"/>		0
1.4 Wind	<input type="text"/>		<input type="text"/>		0
1.5 Other (Specify)	<input type="text"/>		<input type="text"/>		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
<input type="text"/>	<input type="text"/>		<input type="text"/>		0
Total	0		0		0

Conventional Steam :
If agreed please
enter data for individual
powerstations.
Otherwise enter totals only
in first row.

Combined Cycle :
If agreed please
enter data for individual
powerstations.
Otherwise enter totals only
in first row.

Comments (note here any events that have affected this month's figures)

Anything to report?

Annex 7 – Monthly fuel used

GENERATORS

GM-SM-NIGM-Fuel Used

RESTRICTED –COMMERCIAL

(when completed)

PLEASE RETURN ONE CALENDER MONTH AFTER THE END OF THE DATA MONTH.

COMPANY NAME :

Contact Name:

Telephone Number:

THE PERIOD COVERED BY THIS FORM:

2. Combustible fuels used in fossil fuelled plant

2.1

Fuel input to conventional steam plant

Total quantity used
to generate
electricity

2.1.1	Coal ⁽¹⁾	tonnes
2.1.2	Oil	tonnes
2.1.3	Diesel/Oil Engine	tonnes thousand
2.1.4	Natural gas	therms thousand
2.1.5	Sour gas	therms

2.1.6

Other: PLEASE INCLUDE UNUSUAL FOSSIL FUEL
(E.G PETCOKE) HERE (enter in the appropriate
row(s)) :

	tonnes
	tonnes
	thousand therms
	thousand therms
	tonnes of oil equiv
	tonnes of oil equiv

Quantity

0

Associated CVs (Gj/tonne)

N/A
N/A
N/A
N/A

2.1.7

Other (please give in tonnes) PLEASE INCLUDE ALL
BIOMASS HERE :

	tonnes
	tonnes
	tonnes
	tonnes
	tonnes
	tonnes
	tonnes
	tonnes
	tonnes
	tonnes

Quantity

0

Associated CVs (Gj/tonne)

Biomass Consumption
If agreed please
indicate power station
where each
bi-fuel was consumed.
Otherwise enter totals
only
for each fuel.

TOTAL

2.2

Fuel input to combined cycle plants**Total quantity used
to generate
electricity**

2.2.1

Oil

tonnes

power station name

--

--

--

2.2.2

Diesel/Oil Engine

tonnes

power station name

0

--

--

2.2.3

Natural gas

thousand
therms*power station name*

--

--

--

2.2.5

Sour Gas

thousand
therms*power station name*

0

--

--

2.2.4

Other (please specify with units) :

--

--

--

2.3

Fuel input to single cycle plants**Total quantity used
to generate
electricity**

2.3.1

Oil

tonnes

2.3.2

Diesel/Oil Engine

tonnes

2.3.3

Natural gas

thousand
therms

2.3.4

Sour Gas

thousand
therms

2.3.5

Other (please specify with units) :

--

--

--

--

--

--

--

--

⁽¹⁾ Excluding coke**Comments (note here any events that have affected this month's figures)***Anything to report?**Combined Cycle :**If agreed please
enter data for individual
powerstations.**Otherwise enter totals only
in first row for each fuel.*

Annex 8 – Monthly sales

SALES	DM1- SALES																																													
RESTRICTED –COMMERCIAL (when completed)																																														
PLEASE RETURN ONE CALENDER MONTH AFTER THE END OF THE DATA MONTH.																																														
COMPANY NAME : Contact Name: Telephone Number:	<div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px;"></div>																																													
<b style="color: red;">THE PERIOD COVERED BY THIS FORM: <div style="border: 1px solid black; width: 300px; height: 20px; margin-left: 10px;"></div>																																														
<div style="border: 1px solid black; background-color: #e0f2f1; padding: 5px; margin-bottom: 10px;"> 1. Electricity Received </div>	<div style="background-color: #0070c0; color: white; padding: 5px; display: inline-block;">MWh</div>																																													
1.1 Electricity purchased from all sources for resale ⁽¹⁾ <div style="border: 1px solid black; width: 150px; height: 20px; margin-left: 10px;"></div>																																														
<div style="border: 1px solid black; background-color: #e0f2f1; padding: 5px; margin-bottom: 10px;"> 2. Sales of electricity to final consumers ⁽²⁾ </div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #0070c0; color: white;"> <th style="width: 45%;"></th> <th style="width: 15%; text-align: center;">Quantity to customers MWh</th> <th style="width: 15%; text-align: center;">sold direct</th> <th style="width: 15%; text-align: center;">Value of sales £ thousand (excl VAT)</th> <th style="width: 10%; text-align: center;">Value of Climate change Levy collected £ thousand</th> </tr> </thead> <tbody> <tr> <td>Type of consumer</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.1 Industrial Sector (Divisions 10 to 37,40,41,&45 of SIC 2003 ⁽³⁾)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.2 Services Sector (Divisions 50 to 52,55,60 to 67,70 to 80,85,90 to 93 and 99 of SIC 2003 ⁽³⁾)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.3 Domestic Sector (Not covered by SIC 2003)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.4 Other Sectors</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.5 Total all consumers</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>2.5.1 <i>of which</i> sales to all consumers in Scotland</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.5.2 <i>of which</i> sales to all consumers in Northern Ireland</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Quantity to customers MWh	sold direct	Value of sales £ thousand (excl VAT)	Value of Climate change Levy collected £ thousand	Type of consumer					2.1 Industrial Sector (Divisions 10 to 37,40,41,&45 of SIC 2003 ⁽³⁾)					2.2 Services Sector (Divisions 50 to 52,55,60 to 67,70 to 80,85,90 to 93 and 99 of SIC 2003 ⁽³⁾)					2.3 Domestic Sector (Not covered by SIC 2003)					2.4 Other Sectors					2.5 Total all consumers	0		0		2.5.1 <i>of which</i> sales to all consumers in Scotland					2.5.2 <i>of which</i> sales to all consumers in Northern Ireland				
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<p>⁽¹⁾ Covering purchases from generators (including embedded generators), and own generation but excluding interchanges with other electricity suppliers and distributors.</p> <p>⁽²⁾ i.e consumers to whom bills are rendered, including estimates for electricity sold but not yet billed (unbilled revenue). Exclude second tier supply in your area by other companies.</p> <p>⁽³⁾ SIC2003 = Standard Industrial Classification Revised 2003, produced by the Office for National Statistics. Question 2.1 covers manufacturing industry, construction, energy and water supply. Question 2.2 covers transport, public administration and other services and Question 2.4 covers agriculture, public lighting and combined domestic/commercial premises.</p> <p>⁽⁴⁾ Enter the total value of sales excluding VAT and excluding the Climate Change Levy collected relating to those sales</p>																																														
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Annex 9 – Monthly distribution

DISTRIBUTORS

DM2b,SM6a- DISTRIBUTORS

RESTRICTED –COMMERCIAL

PLEASE RETURN ONE CALENDER MONTH AFTER THE END OF THE DATA MONTH.

COMPANY NAME :

Contact Name:

Telephone Number:

THE PERIOD COVERED BY THIS
FORM:

1. Reconciliation of Electricity Received and Electricity Distributed.

Please give figures in **MWh**

1.1	Electricity received at grid supply points	1.2	Electricity received from elsewhere (eg embedded generators)
<div></div>		<div></div>	
		1.3	Distribution losses incurred in your company's authorised area
		1.4	Total electricity distributed in your company's authorised area
		<div></div>	

Check: Box 1.4 = Box 1.1 + Box 1.2 -
Box 1.3

Comments (note here any events that have affected this month's
figures)

Anything to report?

Annex 10 – Quarterly autogenerator survey

Quarterly inquiry into Electricity Generated

I. Electricity generated on site from your own generating plant

	MWh
1.1 Total generated	10
Used as follows:	
1.2 Consumed in power station complex.....	110
1.3 Used on site for power and processing.....	120
1.4 Sold to electricity generation/supply companies..... Electricity generation and supply companies include all companies licensed to sell electricity to consumers.	14
1.5 Sold to other customers off site.....	15
1.6 Is any of the electricity that you sell or use, and have included within the answers above, bought in rather than generated by your generating plant?	
	<input type="checkbox"/> Yes <input type="checkbox"/> No

If the answer to item 1.6 is 'No' then the sum of items 1.2 to 1.5 should agree with the amount given at 1.1.

Please check that you have quoted the values at items 1.1 to 1.5 in **MWh**.

2. Quantity of fuel used in boilers or turbines during quarter

If your plant is a Combined Heat and Power (CHP) unit or the heat (steam; hot water; hot air) your generating plant produces is used by yourselves or others rather than vented, please give a breakdown for generation and process or space heating. If the fuel used for electricity generation cannot be separately identified (which may be the case with a CHP unit) total fuel usage should be included and a note to this effect included in the remarks box.

DO NOT include fuels used in boilers that are used only for steam raising or space heating and NOT associated with electricity generation i.e. this question is about fuel used to generate electricity and fuel used in a CHP system only.

	Fuel used to generate electricity	Fuel used to process and/or space heat	Total fuel used in CHP plant or to generate electricity	
Natural Gas	44	45	46	MWh to convert therms to MWh multiply by 0.0293071
Fuel oil	47	48	49	
Coal	50	51	52	
Other fuels used: Specify type of fuel in this column				Specify the units in this column
530	53	54	55	550 unit
560	56	57	58	580 unit

"Other fuels" include oil other than fuel oil (for example gas diesel oil), coke, gas other than natural gas (for example, blast furnace gas and refinery gas), and waste or recovered gas from chemical processes. Fuels which are not quantifiable, such as wind and wave power, should not be included but a note as to what type they are should be put in the "remarks" box on the next page.