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Employment based energy consumption mapping in the UK

National Atmospheric Emissions Inventory 2013
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Report for DECC, Defra and the Devolved Administrations

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List of Abbreviations

BRES	Business Register and Employment Survey
DECC	Department of Energy and Climate Change
DOENI	Department of the Environment Northern Ireland
Defra	Department for Environment, Food and Rural Affairs
ECUK	Energy Consumption in the UK
ETS	Emissions Trading System
GHG	Greenhouse Gases
GIS	Geographic Information Systems
IDBR	Inter-Departmental Business Register
IGZ	Intermediate Geography Zones
LA	Local Authority
MSOA	Middle Super Output Area
NAEI	National Atmospheric Emissions Inventory
ONS	Office for National Statistics
PI	Purchases Inquiry
SPRI	Scottish Pollution Release Inventory
SIC	Standard Industrial Classification

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Appendices

1 Introduction

Data on energy use by large industrial and commercial sites (also known as Point Sources) are collected and compiled within the National Atmospheric Emissions Inventory (NAEI). These data include fuel consumption from all regulated processes in the UK, all installations covered by the EU Emissions Trading Scheme (EU-ETS) and other sites that are significant sources of air pollution. The method used to compile these estimates is documented in a report on Local and Regional CO_2 emission estimates[1].

The energy used by smaller industrial and commercial sites is also significant in terms of overall energy consumption, representing about 70% of CO_2 emissions in 2012 from the 'other industrial', commercial and public sectors (where 'other industry' excludes large energy intensive industrial processes such as iron and steel, cement etc.). However, energy consumption data for these sites are not available in a consistent format across the UK. Therefore proxy data on employment and energy use are used to estimate energy use and emissions at these locations.

This report describes the methods used to estimate the energy use at the UK level by the smaller industrial, commercial and public sectors and to model the distribution of the energy use across the UK at 1x1km resolution. The methods described in this report replace those previously used for the NAEI. The approach used is similar to that used previously, using a combination of employment data from the Inter-Departmental Business Register database and National energy statistics by industrial and commercial sector.

The outputs of this work are used in the generation of detailed 1x1km resolution emission maps for air quality and climate change gases as well as for other spatially dis-aggregated NAEI outputs such as the Local and Regional CO_2 statistics, the Devolved Administration Inventories and the sub-national energy statistics for solid and liquid fuels[2]

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[1] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/400751/20120624_Local_CO2_-_Technical_Report_2012.pdf
[2] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/358018/uk_sub_national_consumption_of_other_fuels_2012.pdf

2 Data sources

This section of the report describes the data sets used as inputs to the modelling process for energy use from industrial, commercial and public sector facilities that are not included in the NAEI point source database.

2.1 Employment data

The Inter-Departmental Business Register[3] (IDBR) database provides detailed data on number of employees at each registered UK business entity. This database has 2.1 million businesses listed and covers approximately 99% of economic activity across the UK.

An extract from the IDBR was obtained from the Office for National Statistics (ONS), with the data fields as shown in Table 1. The grid reference attribute was used to aggregate total numbers of employees for each 1km grid square by Standard Industry Classification (SIC) sector.

Table 1 Information held on the IDBR[3] for each business

Field	Description
Local Unit	Local Unit Reference Code
Enterprise	Enterprise Reference Code
Reporting Unit	Reporting Unit Reference Code
Name	Local Unit Name
Address	Local Unit Address
Postcode	Local Unit Postcode
Employment	Total number of employees figure plus working proprietors
Employees	Total number of people employed, excluding proprietors
SIC2003	UK Standard Industry Classification 2003
SIC2007	UK Standard Industry Classification 2007
GOR	Regions (Former Government Offices for the Regions)
Grid Reference	Locations on map using Cartesian coordinates

Each business has been allocated to the 2007 Standard Industry Classification[4] (SIC) 5-digit codes. Appendix 1 indicates the divisions of these codes, also noted as two digits SIC. The business entities are classified into Local units and Enterprise Units.

The map on Figure 1 below shows a small sample of employment in the IDBR, showing the density of this dataset within a mixed rural and urban area of South Oxfordshire.

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[3] http://www.ons.gov.uk/ons/about-ons/products-and-services/idbr/index.html
[4] http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html

Figure 1 Illustration of a sample of the IDBR site locations
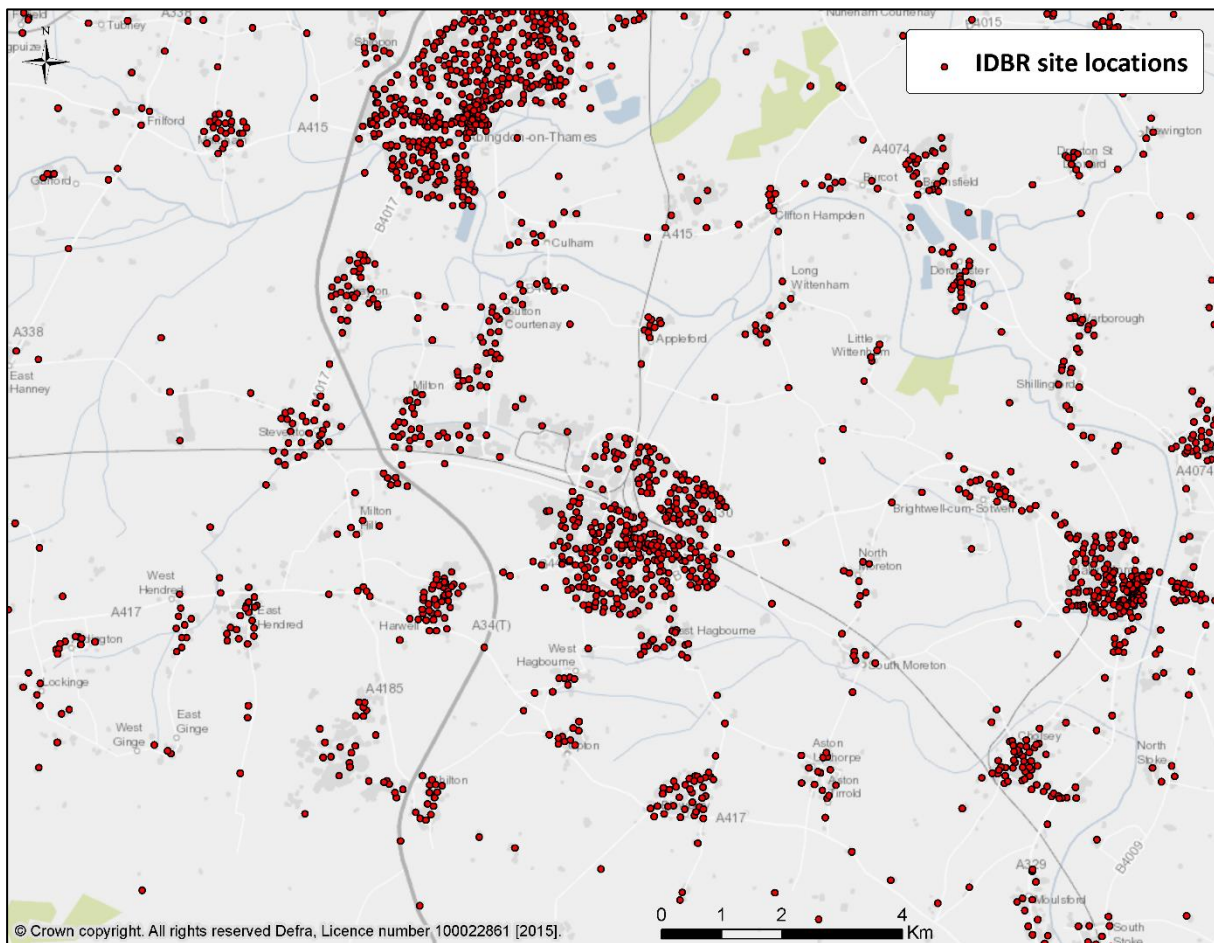
2.2 Energy statistics

Sector specific fuel use statistics are available on an annual basis from DECC via the Energy Consumption in the UK (ECUK) publication[5]. This study make heavy use of the Industrial data tables, and Service sector data tables.

The Industrial and Service sector data tables are compiled from the Purchases Inquiry (PI), a sub-survey of the ONS's Annual Business Inquiry. As part of this survey a sample of 6,000 businesses is conducted to collect information on the monetary value of purchases of fuel and electricity. The ECUK User Guide[6] explains how the survey data were aggregated to cover all businesses in each sector.

Table 2 and Table 3 **Error! Reference source not found.**below present a breakdown of the fuel consumption in industrial, commercial and services sectors in 2012 as provided from the ECUK tables described above. A time-series of statistics was produced using the following ECUK tables:

- Industrial final energy consumption at two digit SIC2007 level by fuel type, for the years 2013-2009[7]
- Service sector final energy consumption by sub-sector, for the years 2013-2005

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[5] https://www.gov.uk/government/statistics/energy-consumption-in-the-uk
[6] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/337462/ecuk_user_guide_2014.pdf
[7] Pre-2009 ECUK tables were only available at SIC2003 level

Table 2 Industrial energy consumption by fuel type in 2012 (thousand tonnes of oil equivalent) based on ECUK[8] Table 4.06[9]

SIC(2007) codes	Description	Coal	Manufactured fuel	LPG	Gas oil	Fuel oil	Natural gas	Electricity
08	Other mining and quarrying	-	-	-	123	3	95	128
10	Manufacture of food products	25	-	-	29	72	1,393	762
11	Manufacture of beverages	6	-	-	7	17	334	183
12	Manufacture of tobacco products	-	-	-	-	-	7	11
13	Manufacture of textiles	34	-	-	26	-	294	162
14	Manufacture of wearing apparel	10	-	-	20	-	139	71
15	Manufacture of leather and related products	-	-	-	-	-	17	17
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	-	-	-	10	-	98	217
17	Manufacture of paper and paper products	80	-	-	25	-	516	601
18	Printing and publishing of recorded media and other publishing activities	-	-	-	3	-	93	333
19	Manufacture of coke and refined petroleum products	958	1,532	-	-	358	162	392
20	Manufacture of chemicals and chemical products	44	-	-	95	16	1,184	1,329
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	5	-	-	10	2	123	138
22	Manufacture of rubber and plastic products	166	-	-	8	-	225	886
23	Manufacture of other non-metallic mineral products	743	-	-	40	-	1,203	452
24	Manufacture of basic metals	49	379	3	1	2	600	723
25	Manufacture of fabricated metal products, except machinery and equipment	8	-	-	-	-	313	363
26	Manufacture of computer, electronic and optical products	3	-	-	1	-	101	326
27	Manufacture of electrical equipment	-	-	-	1	-	125	206
28	Manufacture of machinery and equipment n.e.c.	-	-	-	-	-	189	245
29	Manufacture of motor vehicles, trailers and semi-trailers	35	-	-	89	1	244	276

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[8] https://www.gov.uk/government/statistics/energy-consumption-in-the-uk
[9] Burning oil and Bioenergy & Waste consumption is not shown as all is allocated to unclassified sectors, and therefore not used in this study

SIC(2007) codes	Description	Coal	Manufactured fuel	LPG	Gas oil	Fuel oil	Natural gas	Electricity
30	Manufacture of other transport equipment	-	-	-	53	2	101	160
31	Manufacture of furniture	-	-	-	1	-	38	83
32	Other manufacturing	-	-	-	2	-	51	112
35	Electricity, gas, steam and air conditioning supply	-	-	-	-	-	-	-
36	Water collection, treatment and supply	-	-	-	2	-	15	445
38	Waste collection, treatment and disposal activities; materials recovery	-	-	-	17	-	10	51
42	Civil engineering/construction	5	-	-	152	3	362	128

Table 3 Service sector final energy consumption by sub-sector by fuel in 2012 (thousand tonnes of oil equivalent) based on ECUK[10] Table 5.15

SIC(2007) codes	Subsector	Electricity	Natural Gas	Oil	Solid fuel	Heat Sold	Bioenergy and Waste
33, 41, 58, 62-66, 68-74, 78-82	Commercial Offices	781	862	108	-	1	-
49, 50, 51, 52, 53, 60, 61	Communication and Transport	429	81	5	2	-	6
85	Education	743	1,640	181	3	177	38
84	Government	529	1,035	98	1	112	15
75, 86, 87	Health	354	1,043	39	3	113	36
55, 56	Hotel and Catering	965	1,616	63	5	2	21
77, 94-99	Other	387	545	58	1	1	3
45, 47	Retail	2,750	1,099	60	-	1	-
90-93	Sport and Leisure	442	556	6	-	1	-
46	Warehouses	984	1,129	346	-	1	-

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[10] https://www.gov.uk/government/statistics/energy-consumption-in-the-uk

2.3 Point sources

Data on location specific (point source) fuel consumption are collated in the NAEI point source database. They are compiled from data for regulated processes reported in the Environment Agency's Pollution Inventory, the Scottish Pollution Release Inventory (SPRI), the Department of the Environment Northern Ireland (DOENI) Inventory of Statutory Releases, the EU-ETS and from other data obtained by the inventory. The Local and Regional CO_2 technical report[11] describes in more detail the methodology used to calculate fuel use at point sources. Figure 2 shows the locations of industrial and commercial point sources around the Greater London Area to illustrate the level of detail within this dataset.

Figure 2 Illustration of a sample of Industrial and commercial point sources in the London area
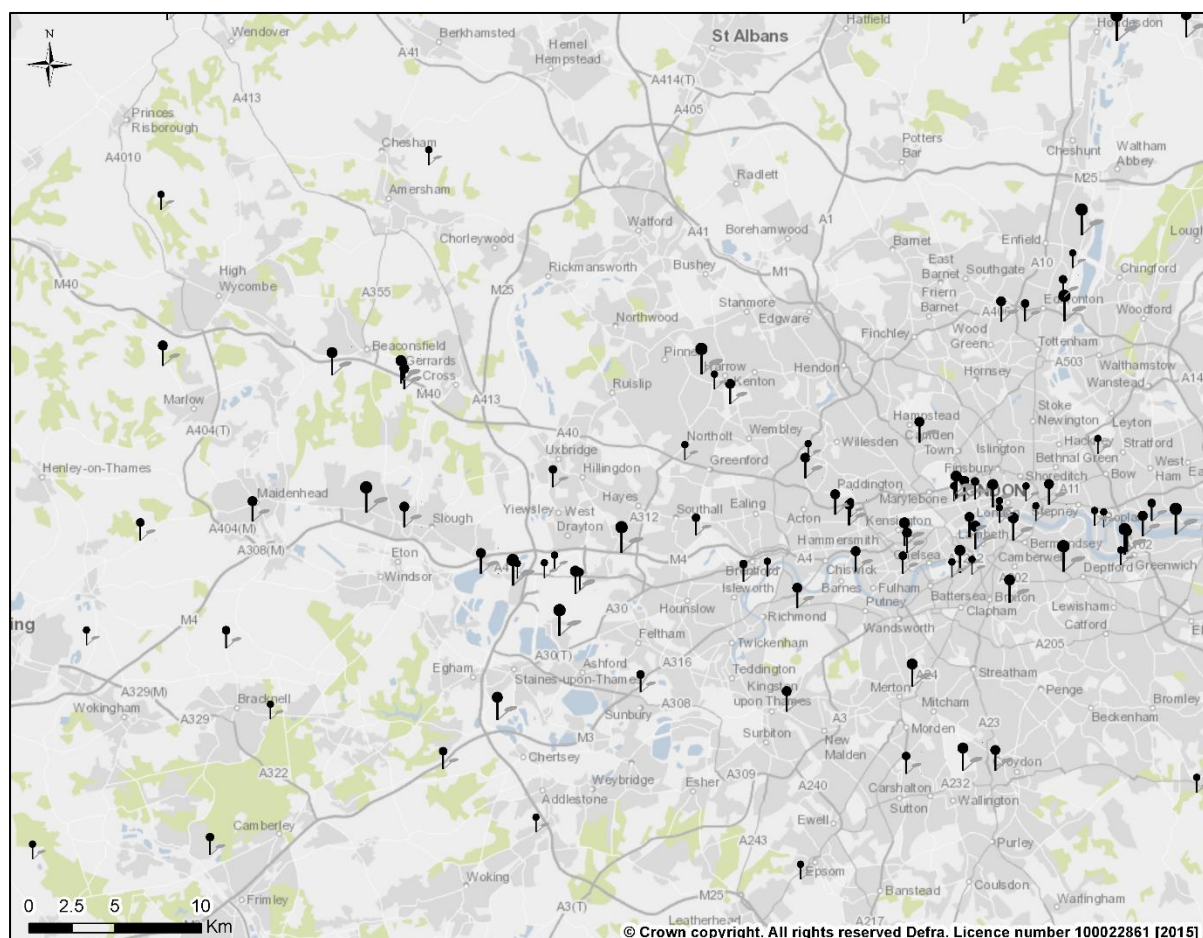
2.4 Gas consumption data for England, Wales, Scotland and Northern Ireland

Data on gas consumption and the distribution of gas consumption for industry and commerce is available from DECC within the sub-national gas consumption data collection[12]. For this exercise, gas consumption data at Middle Super Output Areas (MSOA) for England and Wales and Intermediate Geography Zones (IGZ) for Scotland have been used (hereafter both dataset will be referred to as the MSOA gas data as they are in effect equivalent statistical geographies[13]).

Furthermore, a dataset of 1x1km resolution gas consumption by non-domestic users was obtained from DECC for the purpose of this modelling. This data set enabled the production of a map of the

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[11] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/400751/20120624_Local_CO2_-_Technical_Report_2012.pdf
[12] https://www.gov.uk/government/collections/sub-national-gas-consumption-data
[13] https://www.gov.uk/government/statistics/lower-and-middle-super-output-areas-gas-consumption

extent of the gas network (presence or absence of gas supply) and was used as an indicator for gas availability to industry and commercial sites.
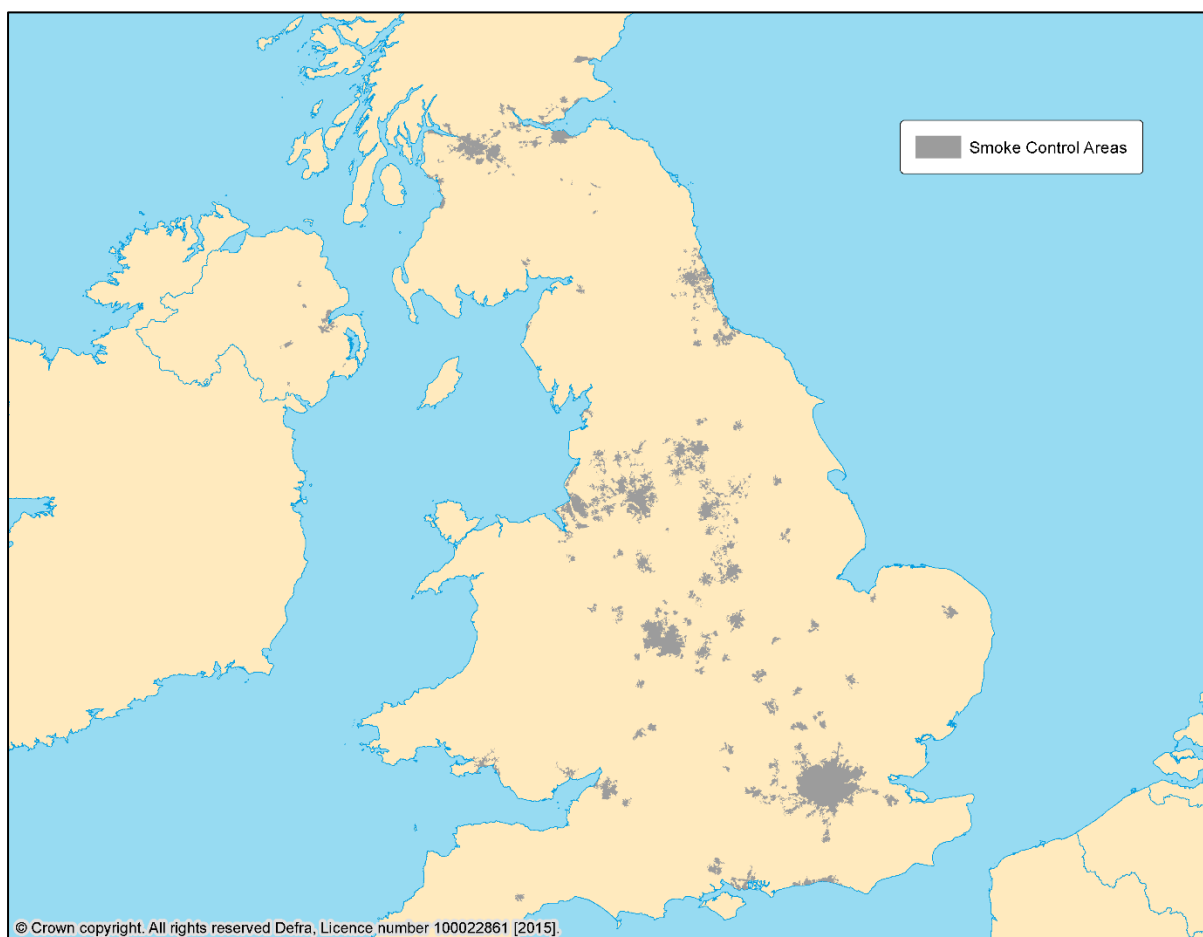
2.5 Off-gas postcodes

In order to identify sites with no gas connection even though they are within areas of gas availability, Xoserve Off-Gas Postcode dataset[14] has been used to filter the businesses which may be using a fuel other than natural gas.

2.6 Smoke control area boundaries

A map of Smoke Control Areas was created by combining of a digital image of Smoke Control Area available from Defra and the ONS urban areas boundary data set. This map was used to assign the locations of coal consumption in some sectors outside these boundaries.

Figure 3 Smoke control areas in the UK

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[14] www.xoserve.com/wp-content/uploads/Off-Gas-Postcodes.xlsx

2.7 Employment time-series

A time-series of employment activity was back-calculated with the use Business Register and Employment Survey (BRES) annual employment estimates[15]. The time-series was calculated at a regional level for each Broad Industry Group (SIC2007). Table 4 shows an example of this dataset for East Midlands. This was available for the years 2013-2008[16].

Table 4 BRES annual employment (thousands) estimates by Broad Industry Group in East Midlands

Broad Industry Group	2008	2009	2010	2011	2012	2013[17]
Accommodation & Food Services	126.7	118.6	109.6	114.5	110.0	126.7
Agriculture, Forestry & Fishing	39.3	37.8	37.6	38.0	39.5	36.1
Business Administration and Support Services	184.3	156.7	166.0	171.6	168.8	180.2
Construction	117.8	112.3	96.5	102.0	87.2	78.2
Education	177.3	174.0	186.5	191.4	189.3	199.3
Finance & Insurance	45.6	34.9	34.8	37.5	34.8	33.8
Health	241.8	238.5	253.9	252.6	258.0	251.9
Information & Communication	49.9	48.2	49.5	45.8	38.2	53.1
Manufacturing	270.0	262.7	265.3	252.2	263.5	258.7
Mining, Quarrying & Utilities	24.8	28.1	26.4	27.5	31.9	33.0
Motor Trades	40.6	42.2	41.3	44.9	45.1	42.0
Other	84.9	94.6	88.2	87.0	81.0	81.8
Professional, Scientific & Technical	111.5	120.1	112.5	99.9	117.2	120.4
Property	23.3	35.1	22.0	23.2	22.4	28.1
Public Administration	98.3	103.4	103.7	92.0	84.1	79.3
Retail	205.2	203.3	195.1	204.4	203.1	194.4
Transport & Storage (inc Postal)	99.3	96.5	105.2	98.5	101.1	101.2
Wholesale	108.6	98.7	101.9	99.4	102.4	98.1

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[15] http://www.ons.gov.uk/ons/rel/bus-register/business-register-employment-survey/index.html
[16] Pre-2008 activity has been estimated from earlier NAEI studies
[17] Provisional publication

3 Analysis

This section describes the methods used to analyse and combine the datasets to model the distribution of energy consumption across the UK by fuel type. Estimates of gas consumption were compared with and corrected against detailed metered data at Local Authority and MSOA level. These were only produced for one year at 1x1km (to support the air quality and greenhouse gas maps for the latest inventory). However, estimates of consumption of other fuels (oils and coal) are more uncertain because there are no consistent data sets on actual consumption of these fuels. For these datasets additional steps were made, in order to create time-series for DECC's Local Authority level statistics.

3.1 Process flow diagrams

The following pages graphically summarise the data flows and modelling processes implemented for each fuel type considered.

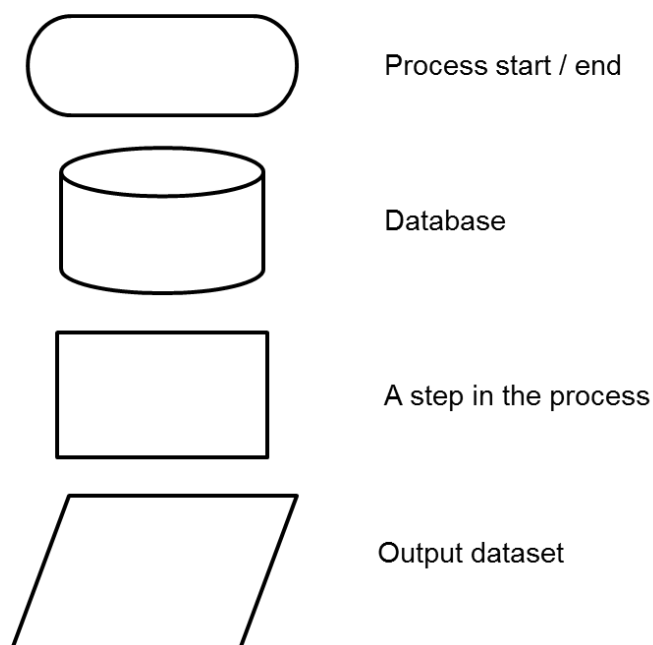**Figure 4 Legend for the process flow diagrams below**

Process start / end

Database

A step in the process

Output dataset

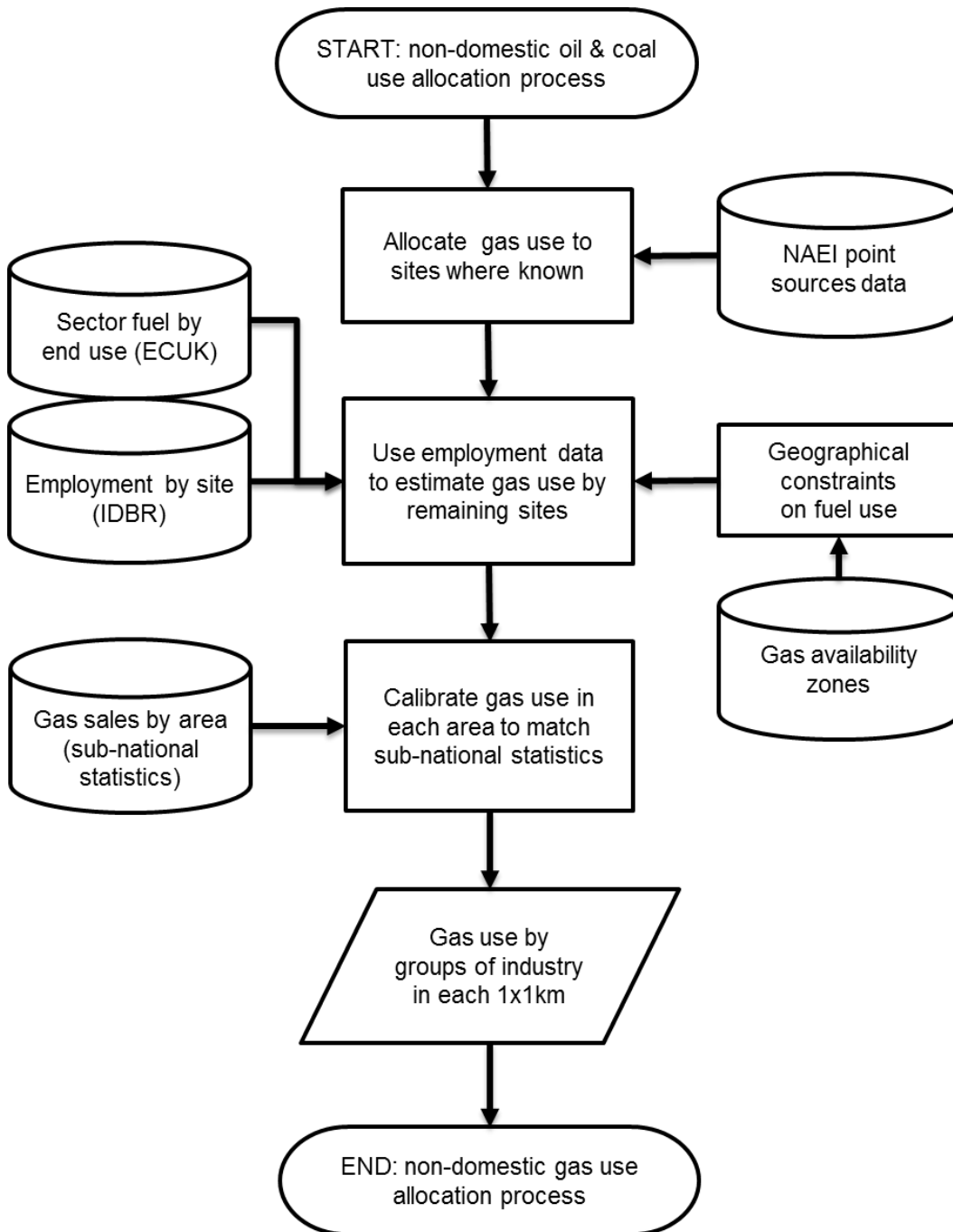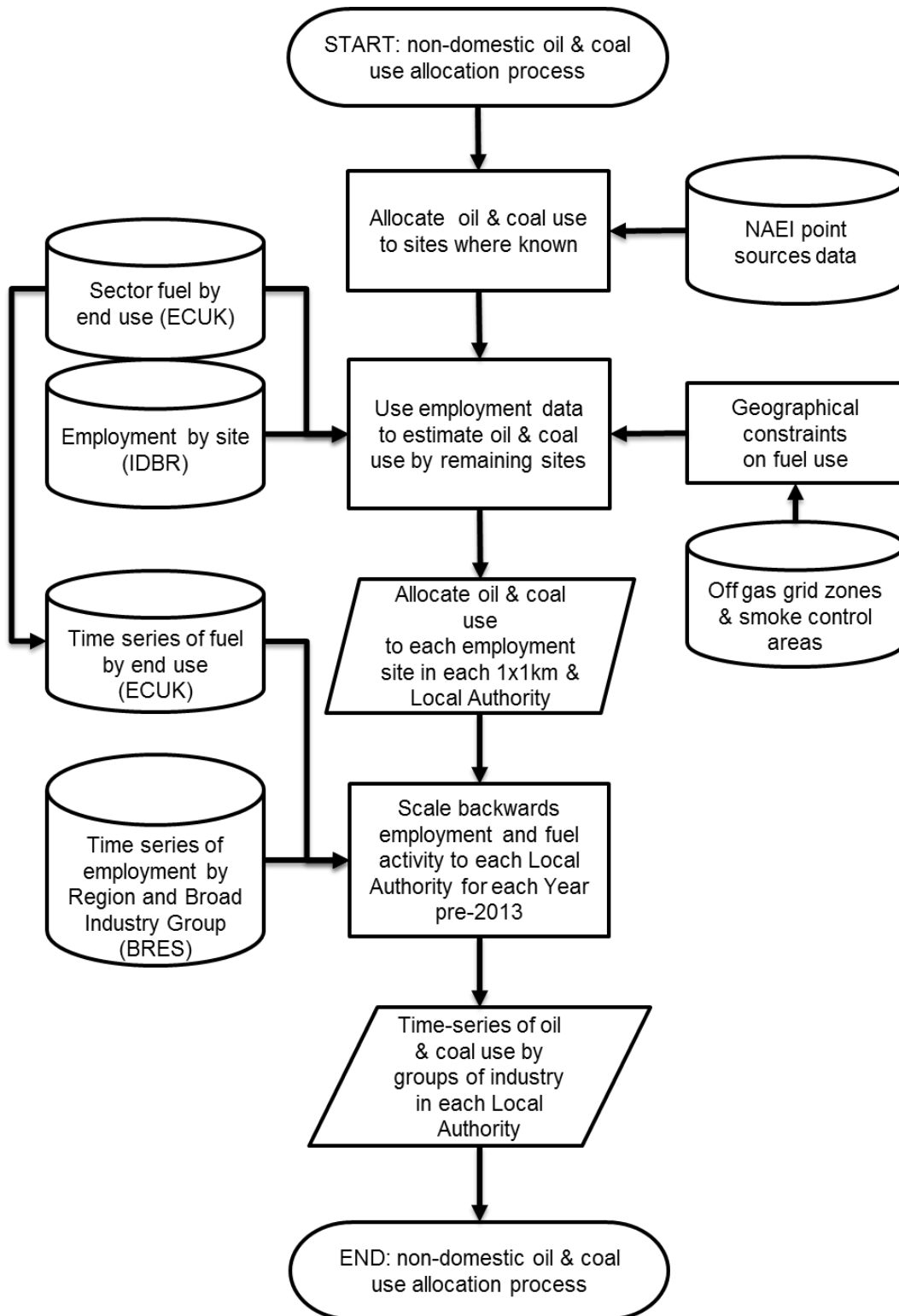**Figure** 5 **Non-domestic gas use allocation process**

Figure 6 Non-domestic oil and coal use allocation process

3.2 Matching point sources to employment data

Overlaps between the NAEI point source database and the IDBR database were identified and flagged. This was necessary to prevent double counting of energy consumption at the national level and at the detailed spatial level.

To enable the data matching the NAEI point sources were allocated to SIC codes. The total energy consumption associated were then calculated at 2 digit SIC code using the bottom-up fuel use estimates in the NAEI point source database.

Subsequently, the locations of each of the NAEI point sources were matched to records in the IDBR using information in the location organisation name, SIC code and postcode. This matching allowed employment records to be removed from the modelling to prevent double counting.

3.3 Matching NAEI sectors to SIC codes

Allocation of SIC codes in the energy and employment datasets to NAEI sectors enabled the aggregation of fuel use estimates to NAEI sectors and a comparison of energy consumption totals. This procedure also facilitated the generation of maps which were consistent with NAEI sector boundaries for distributing emissions data. The two main NAEI sectors relevant to the fuel use mapping are 'Other industry' (i.e. not the largest industrial emitters such as iron and steel or the cement industry) and commercial and public sector.

3.4 Calculation of non-point source residual energy consumption

The comparison of energy data grouped by SIC code and NAEI sector provided an estimate of the total residual energy consumption, i.e. the energy not used at the identified sites. This residual energy was identified for re-distribution using the employment data. Table 5**Error! Reference source not found.** shows examples of these calculations for the services sectors just for oil use.

Table 5 Calculation of service sector oil consumption in 2012 (thousand tonnes of oil equivalent)

NAEI Sectors	Sub-sectors	Final UK energy consumption (ECUK Tables)	Total fuel from site-specific datasets (e.g. Points sources)	Total residual energy for modelling
Agriculture - stationary combustion	Agriculture	305.98	0.19	**305.79**
Miscellaneous industrial / commercial combustion	Commercial Offices	108.29	21.67	**86.61**
	Hotel and Catering	62.69		**62.69**
	Other	58.34	0.04	**58.30**
	Retail	60.37		**60.37**
	Sport and Leisure	5.84	0.04	**5.79**
	Warehouses	345.78	0.02	**345.76**
Public sector combustion	Education	181.36	0.46	**180.90**
	Government	97.72	6.64	**91.08**
	Health	39.29	3.44	**35.84**

The comparison and calculation of residual energy at this level supported the highest level of cross-checks across emissions subsectors to be retained for energy consumption mapping and is a significant improvement on previous versions of this data set.

In addition, more detailed allocations of specific industry SIC codes to NAEI sectors were also applied for the non-fuel emission modelling. Examples of these sectors are Brick manufacture, Marine industrial coatings, Ammonia production and many more.

3.5 Energy intensity factors

Estimates of fuel intensity per employee were used to distribute the residual energy by sector across the IDBR employment sites and create maps of fuel use. Total UK employee numbers in the IDBR were aggregated to an equivalent sector level to the DECC energy statistics which is at SIC 2007 2-digit code level for industrial sectors (see **Error! Reference source not found.** above) but at a higher evel for commercial and service sectors. The total numbers of employees by SIC code (4, 3, or 2 digit codes as appropriate) were then calculated from the IDBR database, excluding the allocated sites identified in **section 3.2**. This calculation also took account of the geographical areas appropriate to the relevant fuels.

The total residual energy by SIC code (as described above) and total number of employees for the same codes were then used to derive to a national average energy intensity factor per employee for each fuel type for each sector for these residual energy locations.

The fuel intensity factors were then applied across the employment distribution from the IDBR to create maps of fuel use by industry sector.

3.6 Gas consumption to adjust the distribution of gas predicted by the employment and energy intensity data

For gas consumption estimates model outputs are adjusted using real gas consumption data using an iterative approach of comparison and adjustment.

The DECC and 1x1km gas datasets were compared with initial modelled estimates of gas and adjustment factors were calculated to apply to improve the initial estimates and ensure modelled and measures estimates were consistent as far as possible. This correction was possible at the MSOA level in some locations but at Local Authority level in other locations owing to the levels of reporting of gas data in the DECC dataset. The reason for this is the aggregation of MSOA gas consumption across multiple MSOAs to prevent disclosure of sensitive data. There is also some gas that is unallocated to MSOAs in many Local Authorities because of insufficient geographic information for the allocation. In the cases where more than 5% of an Local Authority 's gas consumption was aggregated or unallocated adjustments of the modelled gas estimates were performed at the Local Authority level; i.e. apply the same adjustment factor to all MSOAs in the Local Authority. In cases where less than 5% of gas was aggregated or unallocated no adjustments to the modelled estimates in the relevant MSOAs were made although checks on the overall amount of gas estimated in the Local Authority have were performed to ensure that overall gas consumption in the Local Authority matches the measured gas consumption.

The DECC dataset does not provide a distribution of gas consumption in Northern Ireland. Data were added using information on gas consumption by industry and commerce at district level from Energy providers (i.e. SSE Airtricity[18], Firmus[19]) to adjust the modelled estimates in each Northern Ireland Local Authority.

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[18] http://www.airtricitygasni.com/in-business/
[19] http://www.firmusenergy.co.uk/

3.7 Other fuels

The other fuels modelled using this method are coal and oil (with fuel oil and gas oil modelled separately for industrial sectors). The calculations for the distribution of other fuels are simpler than those for gas (but more uncertain) because no measured data exists for these fuels.

Based on expert knowledge of fuel used by industry and businesses the distributions of Fuel Oil and Gas Oil have been modified so that consumption is lower per employee in grid squares covered by Gas supply through the use of a weighting factor.

The distribution of coal has been limited to only outside the locations of Smoke control areas.

4 Changes in methodology

This section documents the updates and improvements that have been adopted in this mapping study in order to estimate regional fuel consumption. The main improvements and changes are described below and quantified in Table 6**Error! Reference source not found.**:

- Increased use of Point Sources with reported site-specific fuel consumption
- Additional matching of Point Sources; for this study Display Energy Certificate datasets where not used, due to restricted timescales. This will be reviewed in the next inventory year.
- Use of multi-year statistics to improve the energy trends:
  - BRES regional annual employment statistics by Broad Group Industry
  - ECUK sector specific fuel use statistics
- Modification of fuel allocation to employment sites with the use of Xoserve Off-Gas Postcode dataset

Table 6 Improvements since last study

	2013 Inventory Method	2010 Inventory Method	2006 Inventory Method
No of sites	Point sources: 1,810	Point sources: 1,549	Point sources: 744
No of sites matched with employment data	2,017	33,851[20]	149
Time series	Employment: 2013-2005 Energy: Industrial: 2013-2009 Services: 2013-2005	Employment: 2010, 2009, 2008 Energy: 2010, 2009, 2008	Employment: 2007 Energy: 2005
No of 5-digit SIC allocated to the NAEI sectors	726	690	370
Gas adjustment resolution	1x1km, MSOA & Local Authority	1x1km, MSOA & Local Authority	MSOA & Local Authority
Geographical constrain of oil consumption	Gas supply areas & Off-gas postcode	Gas supply areas	Urban areas

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[20] This figure includes sites identified within Display Energy Certificates data

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Appendix 1 - 2-digit Standard Industrial Classification 2007

SIC(2007) codes	Description
01	Crop and animal production, hunting and related service activities
02	Forestry and logging
03	Fishing and aquaculture
05	Mining of coal and lignite
06	Extraction of crude petroleum and natural gas
07	Mining of metal ores
08	Other mining and quarrying
09	Mining support service activities
10	Manufacture of food products
11	Manufacture of beverages
12	Manufacture of tobacco products
13	Manufacture of textiles
14	Manufacture of wearing apparel
15	Manufacture of leather and related products
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
17	Manufacture of paper and paper products
18	Printing and reproduction of recorded media
19	Manufacture of coke and refined petroleum products
20	Manufacture of chemicals and chemical products
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
22	Manufacture of rubber and plastic products
23	Manufacture of other non-metallic mineral products
24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
26	Manufacture of computer, electronic and optical products
27	Manufacture of electrical equipment
28	Manufacture of machinery and equipment n.e.c.
29	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture of other transport equipment
31	Manufacture of furniture
32	Other manufacturing
33	Repair and installation of machinery and equipment
35	Electricity, gas, steam and air conditioning supply
36	Water collection, treatment and supply
37	Sewerage
38	Waste collection, treatment and disposal activities; materials recovery
39	Remediation activities and other waste management services.
41	Construction of buildings

SIC(2007) codes	Description
42	Civil engineering
43	Specialised construction activities
45	Wholesale and retail trade and repair of motor vehicles and motorcycles
46	Wholesale trade, except of motor vehicles and motorcycles
47	Retail trade, except of motor vehicles and motorcycles
49	Land transport and transport via pipelines
50	Water transport
51	Air transport
52	Warehousing and support activities for transportation
53	Postal and courier activities
55	Accommodation
56	Food and beverage service activities
58	Publishing activities
59	Motion picture, video and television programme production, sound recording and music publishing activities
60	Programming and broadcasting activities
61	Telecommunications
62	Computer programming, consultancy and related activities
63	Information service activities
64	Financial service activities, except insurance and pension funding
65	Insurance, reinsurance and pension funding, except compulsory social security
66	Activities auxiliary to financial services and insurance activities
68	Real estate activities
69	Legal and accounting activities
70	Activities of head offices; management consultancy activities
71	Architectural and engineering activities; technical testing and analysis
72	Scientific research and development
73	Advertising and market research
74	Other professional, scientific and technical activities
75	Veterinary activities
77	Rental and leasing activities
78	Employment activities
79	Travel agency, tour operator and other reservation service and related activities
80	Security and investigation activities
81	Services to buildings and landscape activities
82	Office administrative, office support and other business support activities
84	Public administration and defence; compulsory social security
85	Education
86	Human health activities
87	Residential care activities
88	Social work activities without accommodation
90	Creative, arts and entertainment activities
91	Libraries, archives, museums and other cultural activities

SIC(2007) codes	Description
92	Gambling and betting activities
93	Sports activities and amusement and recreation activities
94	Activities of membership organisations
95	Repair of computers and personal and household goods
96	Other personal service activities
97	Activities of households as employers of domestic personnel
98	Undifferentiated goods- and services-producing activities of private households for own use
99	Activities of extraterritorial organisations and bodies

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