Department of Energy & Climate Change

National Energy Efficiency Data-Framework

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What's covered

- What data DECC get and where data come from
- What is NEED?
- Summary of results
- How outputs have been used to date
- Future developments

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Background

- Published energy consumption data in the Digest of UK energy Statistics since 1948 – national level data based on aggregate information from energy suppliers.
- UK energy policy required more detailed data to help deliver and monitor reductions in energy use and emissions - DECC wanted a low cost solution to meeting requirements.
- Worked closely with energy industry and a large number of users to find a solution - concluded data from the administrative systems of the energy companies would meet the requirements.
- Data at individual meter point – for all properties in Great Britain, around 30 million electricity meters and 25 million gas meters - was first obtained in 2004. Now collected annually under the Statistics of Trade Act.
- Future utility of the meter point data was considered at an early stage – further work with the energy industry and other key stakeholders led to the creation of a framework for linking information about energy consumption with information on energy efficiency and property attributes.

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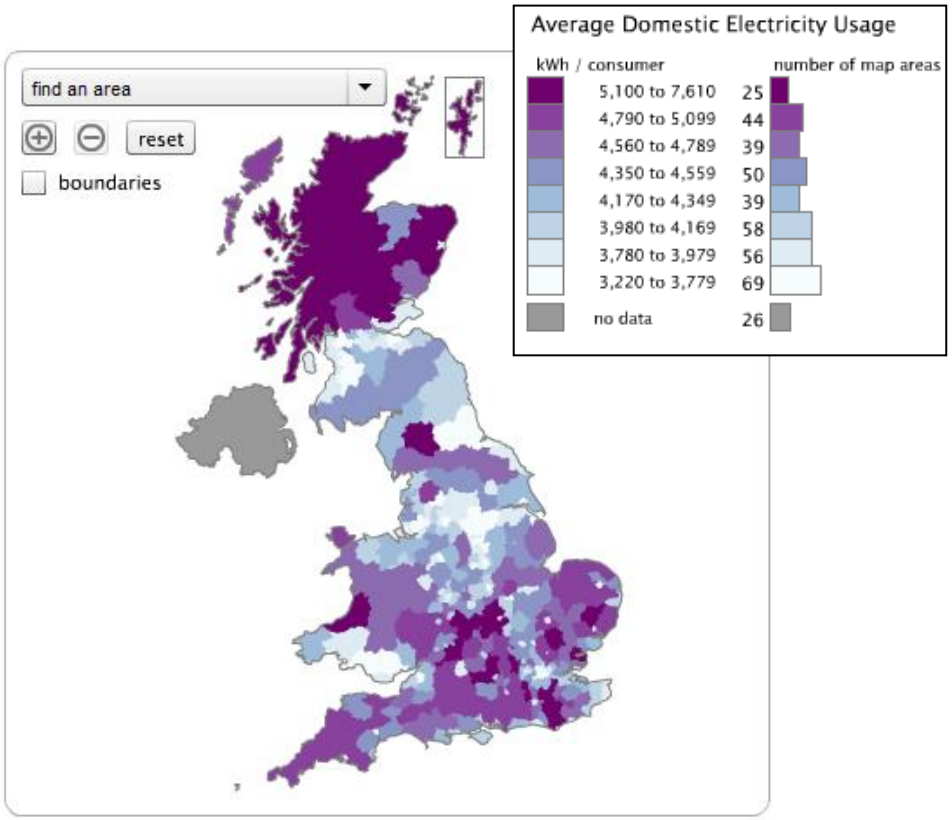
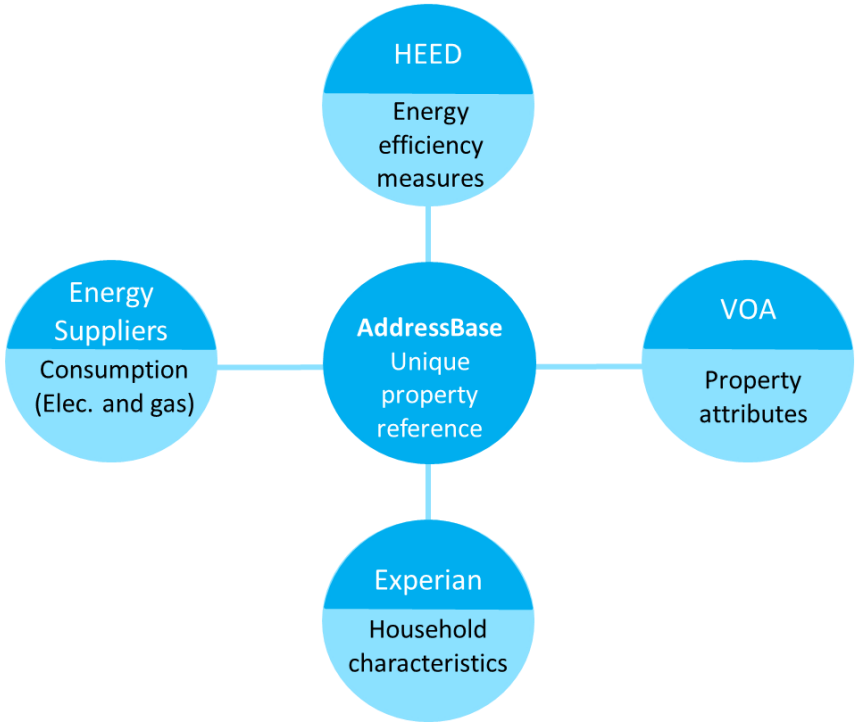
How are data used?

Local Area Consumption



National Energy Efficiency Data-Framework (NEED)



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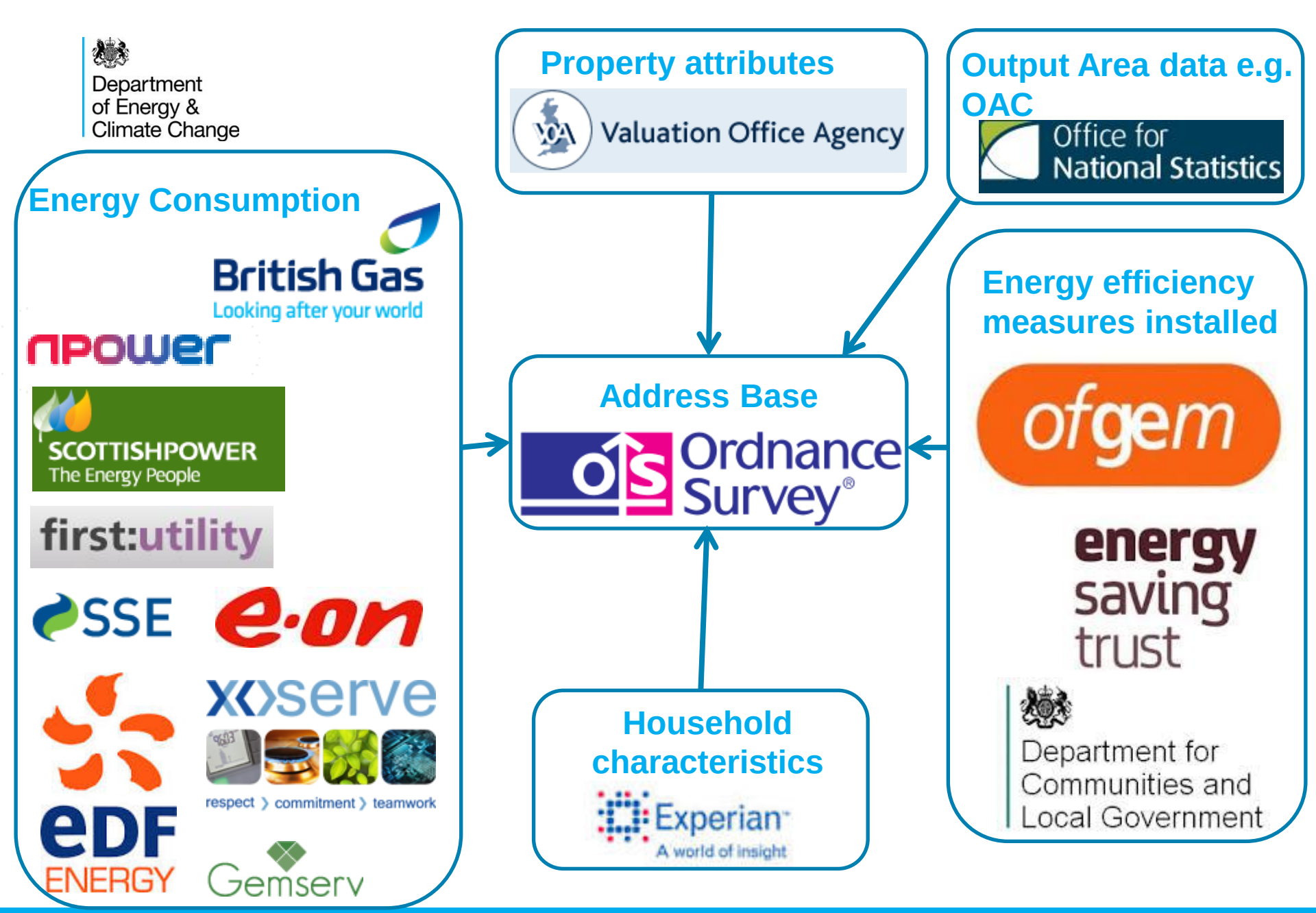
What is NEED?

NEED is a framework for combining data from existing sources (administrative and commercial) to provide insights into how energy is used and what the impact of energy efficiency measures is, for different types of property and household.

In Scope	Out of Scope
Domestic and non-domestic properties	Very large consumers e.g. power stations
Great Britain	Northern Ireland
Metered gas and electricity	Non-metered fuels e.g. oil, coal
Energy Efficiency Measures in HEED	DIY measures and others not recorded on HEED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Property attributes
Valuation Office Agency
Output Area data e.g. OAC
Office for National Statistics
Energy Consumption
British Gas
Looking after your world
npower
SCOTTISHPOWER
The Energy People
first:utility
SSE
e·on
xoserve
respect › commitment › teamwork
EDF ENERGY
Gemserv
Address Base
Ordnance Survey
Household characteristics
Experian
A world of insight
Energy efficiency measures installed
ofgem
energy saving trust
Department for Communities and Local Government

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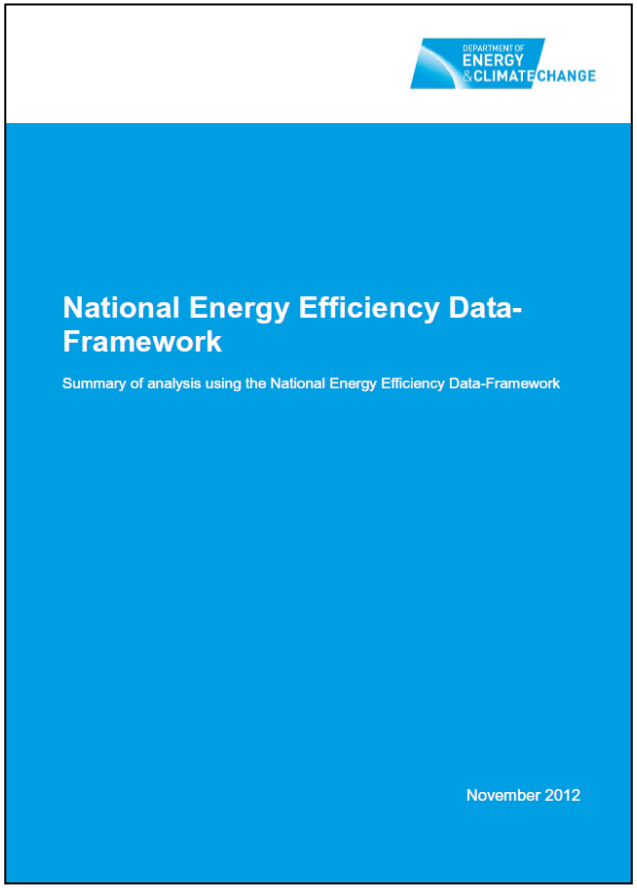
What can we find out from the data?



For more information:

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Website
https://www.gov.uk/government/organisations/department-of-energy-climate-change/about/statistics

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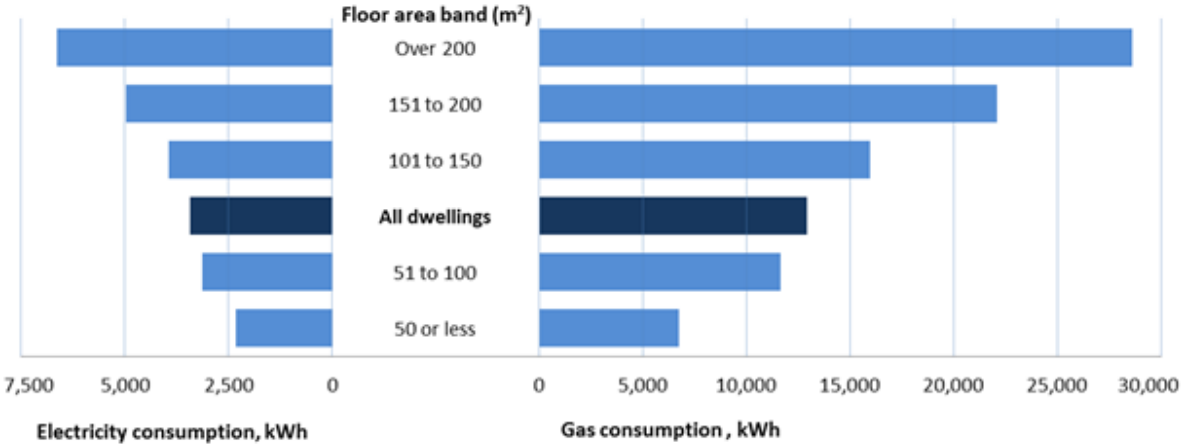
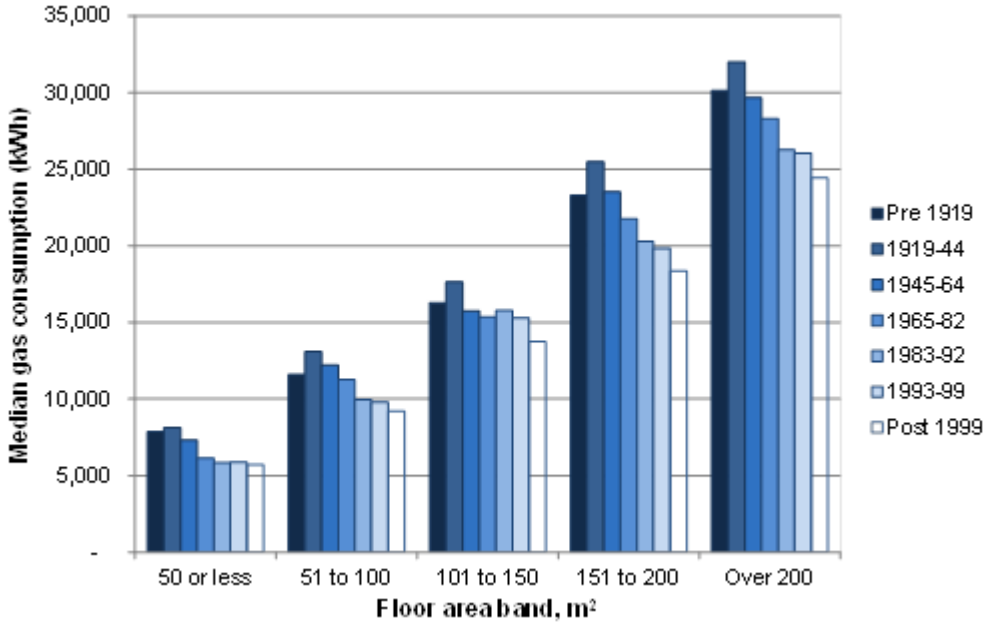
Domestic consumption

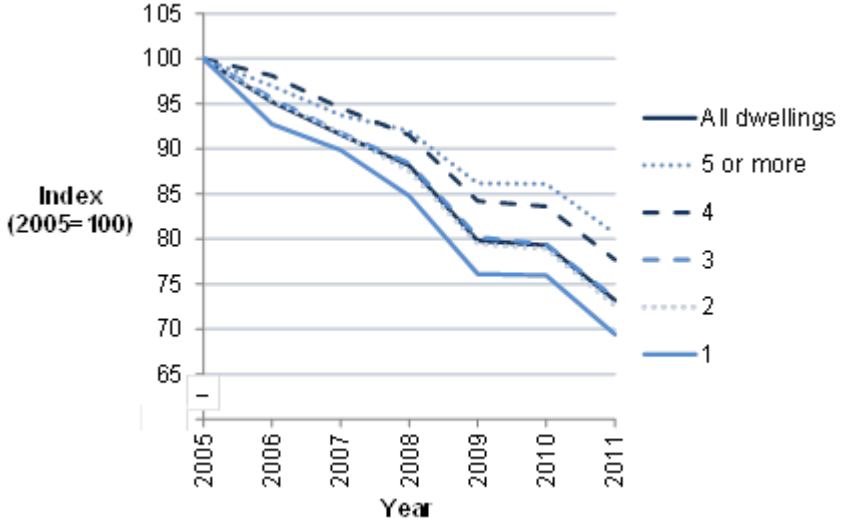
Median gas and electricity consumption



Median gas consumption in 2011 by floor area and property age



Change in gas consumption over time, number of bedrooms



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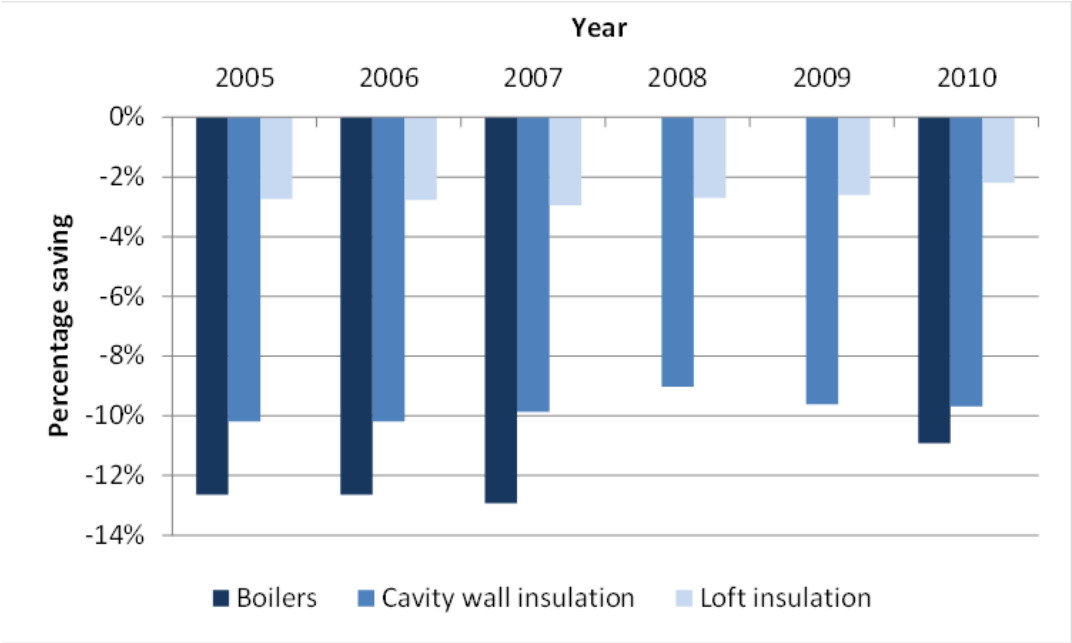
Impact of energy efficiency measures



- CWI – median savings in 2010 8.9 per cent
- Loft – 2.2 per cent
- Condensing boiler – 10.7per cent

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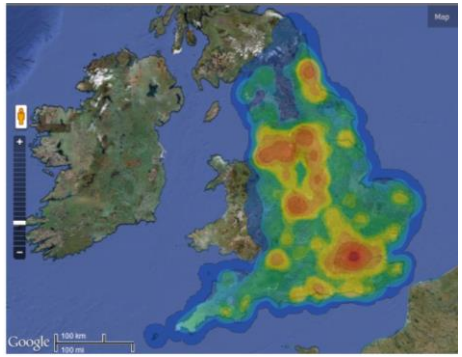
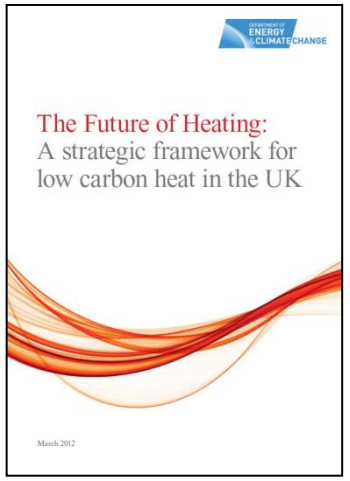
Use of outputs within DECC

Outputs from NEED have already been used to inform a number of important policies, including:

- Estimates of savings from insulation measures to inform Green Deal and ECO.
- Consumption by income and tenure to inform Fuel Poverty policy.
- Consumption by property attributes to inform development of heat policy.
- DECC's Heat Map.
- Targeting DECC research (e.g. Domestic energy use study)





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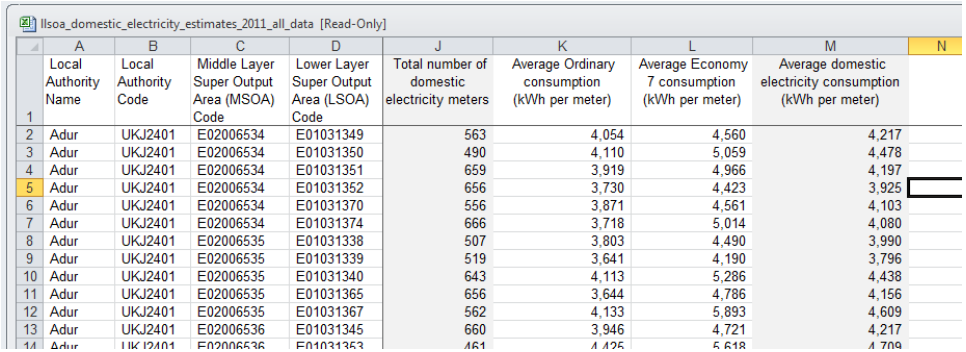
Making more data available

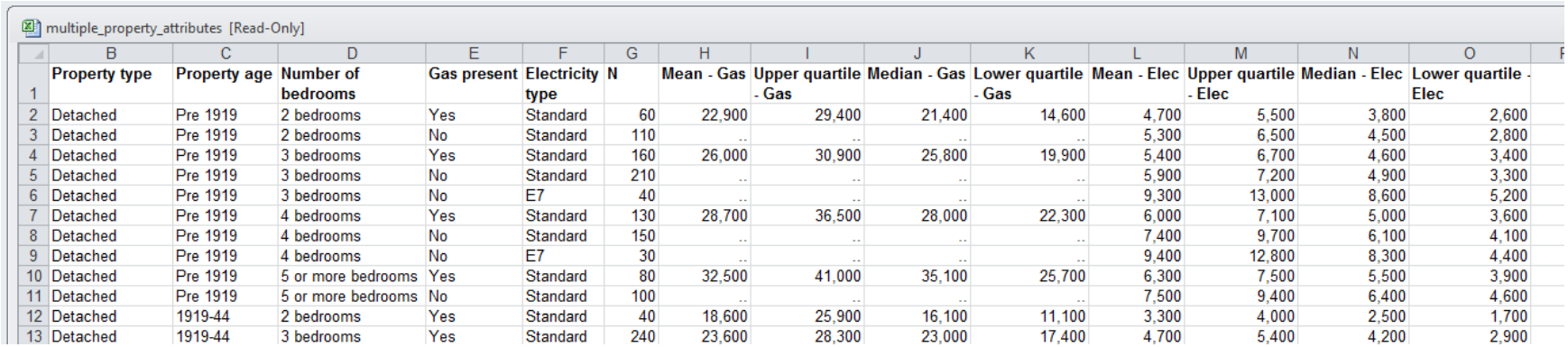
Local area consumption down to lower level super output area



llsoa_domestic_electricity_estimates_2011_all_data [Read-Only]

	A	B	C	D	J	K	L	M	N
1	Local Authority Name	Local Authority Code	Middle Layer Super Output Area (MSOA) Code	Lower Layer Super Output Area (LSOA) Code	Total number of domestic electricity meters	Average Ordinary consumption (kWh per meter)	Average Economy 7 consumption (kWh per meter)	Average domestic electricity consumption (kWh per meter)	
2	Adur	UKJ2401	E02006534	E01031349	563	4,054	4,560	4,217	
3	Adur	UKJ2401	E02006534	E01031350	490	4,110	5,059	4,478	
4	Adur	UKJ2401	E02006534	E01031351	659	3,919	4,966	4,197	
5	Adur	UKJ2401	E02006534	E01031352	656	3,730	4,423	3,925	
6	Adur	UKJ2401	E02006534	E01031370	556	3,871	4,561	4,103	
7	Adur	UKJ2401	E02006534	E01031374	666	3,718	5,014	4,080	
8	Adur	UKJ2401	E02006535	E01031338	507	3,803	4,490	3,990	
9	Adur	UKJ2401	E02006535	E01031339	519	3,641	4,190	3,796	
10	Adur	UKJ2401	E02006535	E01031340	643	4,113	5,286	4,438	
11	Adur	UKJ2401	E02006535	E01031365	656	3,644	4,786	4,156	
12	Adur	UKJ2401	E02006535	E01031367	562	4,133	5,893	4,609	
13	Adur	UKJ2401	E02006536	E01031345	660	3,946	4,721	4,217	
14	Adur	UKJ2401	E02006536	E01031363	461	4,425	5,618	4,709	

Table of data by multiple attributes (4424 rows of data), published with limited formatting to allow it to be easily reused

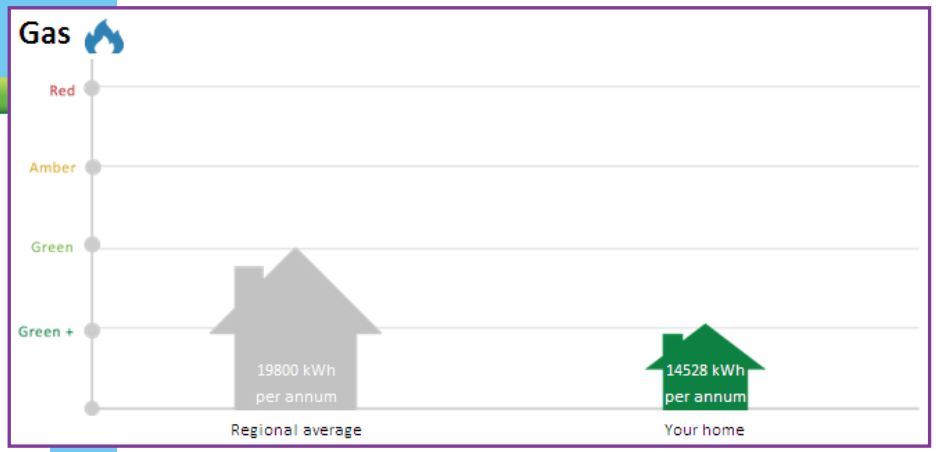


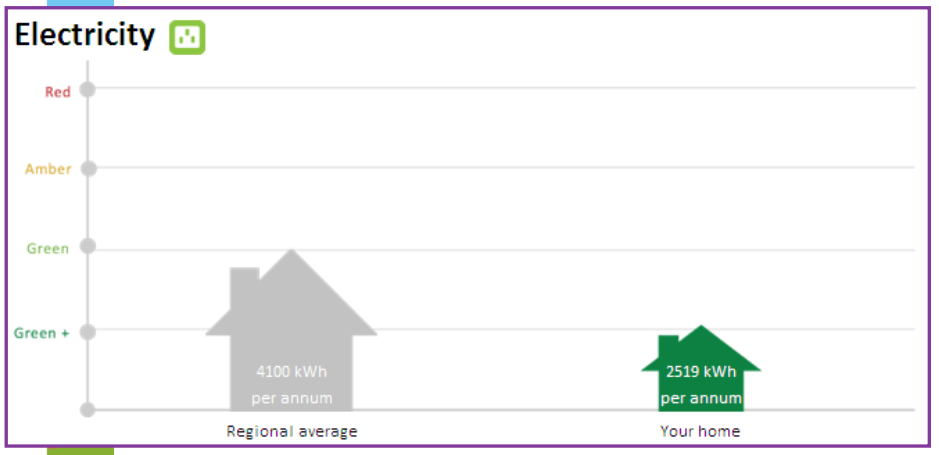
multiple_property_attributes [Read-Only]

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Property type	Property age	Number of bedrooms	Gas present	Electricity type	N	Mean - Gas	Upper quartile - Gas	Median - Gas	Lower quartile - Gas	Mean - Elec	Upper quartile - Elec	Median - Elec	Lower quartile - Elec
2	Detached	Pre 1919	2 bedrooms	Yes	Standard	60	22,900	29,400	21,400	14,600	4,700	5,500	3,800	2,600
3	Detached	Pre 1919	2 bedrooms	No	Standard	110	..	..	..	..	5,300	6,500	4,500	2,800
4	Detached	Pre 1919	3 bedrooms	Yes	Standard	160	26,000	30,900	25,800	19,900	5,400	6,700	4,600	3,400
5	Detached	Pre 1919	3 bedrooms	No	Standard	210	..	..	..	..	5,900	7,200	4,900	3,300
6	Detached	Pre 1919	3 bedrooms	No	E7	40	..	..	..	..	9,300	13,000	8,600	5,200
7	Detached	Pre 1919	4 bedrooms	Yes	Standard	130	28,700	36,500	28,000	22,300	6,000	7,100	5,000	3,600
8	Detached	Pre 1919	4 bedrooms	No	Standard	150	..	..	..	..	7,400	9,700	6,100	4,100
9	Detached	Pre 1919	4 bedrooms	No	E7	30	..	..	..	..	9,400	12,800	8,300	4,400
10	Detached	Pre 1919	5 or more bedrooms	Yes	Standard	80	32,500	41,000	35,100	25,700	6,300	7,500	5,500	3,900
11	Detached	Pre 1919	5 or more bedrooms	No	Standard	100	..	..	..	..	7,500	9,400	6,400	4,600
12	Detached	1919-44	2 bedrooms	Yes	Standard	40	18,600	25,900	16,100	11,100	3,300	4,000	2,500	1,700
13	Detached	1919-44	3 bedrooms	Yes	Standard	240	23,600	28,300	23,000	17,400	4,700	5,400	4,200	2,900

Working with industry

http://www.comparemyenergy.org.uk/





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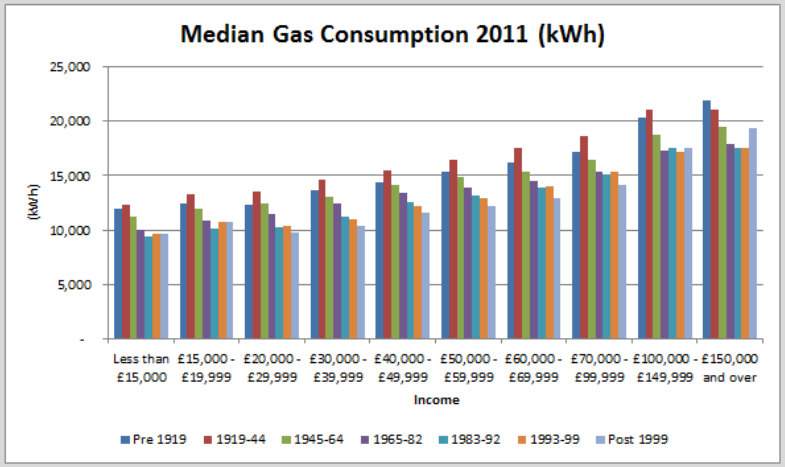
Making more data more accessible – produced a number of tools

Variable 1 (Column): Income | Median/Mean: Median | Fuel: Gas | Year: 2011

Variable 2 (Row): Property Age

Median Gas Consumption 2011 (kWh)

		Income										
		Less than £15,000	£15,000 - £19,999	£20,000 - £29,999	£30,000 - £39,999	£40,000 - £49,999	£50,000 - £59,999	£60,000 - £69,999	£70,000 - £99,999	£100,000 - £149,999	£150,000 and over	Total
Property Age	Pre 1919	12,000	12,400	12,300	13,700	14,400	15,300	16,200	17,200	20,300	21,900	**13,600**
	1919-44	12,300	13,300	13,500	14,600	15,500	16,500	17,600	18,600	21,100	21,100	**14,600**
	1945-64	11,200	11,900	12,400	13,100	14,100	14,900	15,400	16,400	18,800	19,500	**12,800**
	1965-82	10,000	10,800	11,500	12,400	13,400	13,900	14,500	15,400	17,300	17,900	**12,100**
	1983-92	9,400	10,100	10,200	11,200	12,600	13,200	13,900	15,100	17,500	17,600	**11,600**
	1993-99	9,600	10,700	10,400	11,000	12,200	12,900	14,000	15,300	17,200	17,600	**11,900**
	Post 1999	9,600	10,700	9,800	10,400	11,600	12,200	12,900	14,200	17,500	19,400	**11,500**
Total		**10,900**	**11,800**	**12,000**	**12,900**	**13,900**	**14,600**	**15,300**	**16,400**	**18,900**	**20,000**	**12,900**



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Future developments

Anonymised dataset

- Planning to produced a record level dataset of a sample of data from NEED which will be available to researchers.

Non-domestic NEED

Plan to publish initial results from non-domestic NEED.

Model of gas consumption

Making use of the data to develop a model of gas consumption:

- reviewed models previously done by contractors;
- identified most important variables using English Housing Survey;
- next step to model consumption using (large) sample of data from NEED.

Policy evaluation

Intend to use NEED to inform evaluation of a range of DECC policies, including Green Deal and Smart Meters.

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Future developments

Model of gas consumption

Making use of the data to develop a model of gas consumption

- reviewed models previously done by contractors
- identified most important variables using English Housing Survey
- next step to model consumption using (large) sample of data from NEED

National Statistics Assessment

- Local area consumption data down to MSOA already a NS output.
- UKSA Assessment of DECC outputs taking place this autumn – including LSOA consumption data and NEED.
  - Outputs already published in line with code of practice
  - Completion of WEFA and ensuring documentation up to date

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Questions