ofgem Making a positive difference for energy consumers

Appendices for insights paper on households with electric and other non-gas heating

Research Paper - Appendices

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Team: Consumer Vulnerability Team

Email: vulnerability@ofgem.gov.uk

Overview:

In Great Britain (GB), around 4m households do not use mains gas for heating. These non-gas households are a priority area for our Consumer Vulnerability Strategy, in part because they are more likely to be fuel poor. Just over half of all non-gas households use electricity as their primary heating source, which Ofgem regulates.

This document supplements our main report. It covers four appendices which set out more detail referred to in the main report. These are:

- Analysis of demographic and housing data for households with electric heating
- Analysis of consumer contacts data for households with electric heating
- Further analysis of market engagement for households with electric heating
- Glossary explaining the main technical terms

Context

Ofgem is the Office of Gas and Electricity Markets. We are the independent regulator of the electricity and gas system in Great Britain. Our principal objective is to protect the interests of existing and future energy customers. We have particular duties to have regard to the interests of consumers in vulnerable situations.

Energy is an essential service. It requires a regulatory approach that reflects this. Our Consumer Vulnerability Strategy (CVS) was published in July 2013. It aims to protect and empower customers in vulnerable situations, so as to reduce the likelihood and impact of vulnerability and ensure all customers can access market benefits.

In 2014 we identified non-gas households as a priority area for our CVS largely because they are more likely to be fuel poor. This insights paper is the next phase of our work in this area, following our investigation into the dynamic tele-switching market, and the conclusion of our recent review of Fuel Poor Network Extension Scheme. The paper includes our analysis of the demographics and market experience of electric heating customers who comprise the majority of non-gas households, and are within our remit to protect. It is intended to enhance the evidence base in this area and inform our regulatory activity.

In line with our CVS ways of working, and our Corporate Strategy, we use our expertise and knowledge to inform the wider policy debate where it can benefit energy consumers. In January 2015, Ofgem's CEO Dermot Nolan made a commitment to the Energy and Climate Change Committee (ECCC) to submit a paper to the UK government which set out options to better protect consumers that use other non-gas fuels. In fulfilling our commitment to ECCC, this report also offers thinking on potential options for those non-gas sectors, where there are currently no direct sectoral regulators, ie heating oil, LPG, solid fuel and district heat.

This document covers four appendices which set out more detail referred to in the main report.

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Appendix 1 – Analysis of demographic and housing data

Background and methodology

1.1 This Annex presents the results of our analysis of the Scottish Household Survey (SHS) and the English Housing Survey (ESH). For Wales, the latest housing surveys have not covered a physical inspection with the latest data being available for 2008. This has been analysed and published by Consumer Futures and is available on their website[1].

1.2 Statistics for Scotland are based on our analysis of the SHS for the combined years of 2011 to 2013. This is with the exception of table 1, which is based on the most recent year only (2013) to be consistent with figures published by the Scottish government.[2] For the remaining statistics, we have combined three years to ensure a sufficiently large sample size for the detailed physical and social analysis. This means that figures can be different to the aforementioned report by the Scottish government which is based on the 2013 results only.

1.3 For England, statistics are based on our analysis of the English Housing Survey (EHS) 2012/13 and 2013/14. The SHS covers inhabited dwellings only whilst the EHS also covers vacant dwellings. For consistency purposes and because our interest is in households with electric heating– rather than vacant dwellings – we have only focused on inhabited dwellings for England as well.

1.4 Where possible we have analysed the same questions for England and Scotland. However, some questions are asked and recorded differently, or not at all, in each survey. Hence, the analysis varies slightly between both surveys.

Definition of electric storage heating systems and direct-acting heating systems without storage functionality

1.5 For the purposes of the detailed analysis of physical and social characteristics, we sought to understand the different characteristics of households that use "electric storage heating systems" and "direct-acting heating systems without storage functionality". For this purpose, we had to categorise electric heating households into these two categories.

1.6 For England, the EHS[3] categorises electric heating systems as "Electricity (7hr on peak)", "Electricity (7hr off peak)", "Electricity (standard tariff)", "Electricity (10hr on peak)", "Electricity (10hr off peak)", and "Electricity (24hr

[1] http://www.consumerfutures.org.uk/reports/off-gas-consumers-information-on-households-without-mains-gas-heating.
[2] http://www.gov.scot/Publications/2014/12/6903
[3] For more detail, see the physical inspection form used for EHS inspections: https://www.gov.uk/government/publications/english-housing-survey-physical-surveys

heating tariff)". This is based on the physical inspection of the dwelling, in particular the heating system and meter type (rather than actual tariffs that households are on).

1.7 For the purposes of this analysis, we categorised households as "electric storage heating system" if they fall into any of the following categories: "Electricity (7hr off peak)", "Electricity (10hr off peak)", and "Electricity (24hr heating tariff)". All others have been categorised as "direct-acting heating", ie "Electricity (standard tariff)", "Electricity (7hr on peak)"[4] and "Electricity (10hr on peak)".

1.8 Table 1 shows the electric heating systems that fall into these categories. The majority of storage heating systems are "storage heaters" while the majority of direct-acting electric heating systems without storage functionality are "room heaters".

1.9 In the case of Scotland, the SHS records electric heating systems as "peak" and "off-peak" and does not use the categories outlined above. Therefore, these categories have been used as a proxy for "storage heating systems" and "direct-acting heating without storage capacity". Table 2 shows in more detail the electric heating systems that fall within these categories. This is based on the combined years of 2011, 2012 and 2013 that we have used for the detailed analysis. Table 3 shows the results for year 2013 only.

1.10 For the purposes of the detailed physical and social analysis, we have re-classified heat pumps as "other heating" .

1.11 Only 202 cases of households with direct-acting electric heating are recorded in the EHS, and only 119 in the SHS. Given the small sample size, results need to be treated with caution. Tables in this annex set out when sub-samples include results based on less than 30 observations.

1.12 We note that these categories are a simplified categorisation for these broader categories of heating systems. We think it is a reasonable proxy as the peak and off-peak categorisation are largely done on the basis of the heating system as such (ie whether or not it has storage capacity) rather than actual tariff. Because of the sample size, it is not possible to split out these categories further to understand the characteristics of households that use different types of heating systems within these broader categories.

[4] We have been advised by the Building Research Establishment (BRE) that these are properties with Economy 7 type meters but where the property might use peak electricity due to the nature of the heating system. It is however also possible that this is a different type of meter.

Table 1: Heating systems in England

	Boiler	Storage heating	Room heating	Warm air system	Heat pump	Other systems	Total
Electricity (7hr on peak)[5]							
Household number	0	18,838	125,012	0	0	18,097	161,947
Per cent row	0%	12%	77%	0%	0%	11%	100%
Per cent column	0%	1%	21%	0%	0%	4%	1%
Sample size	0	11	49	0	0	7	67
Electricity (7 hr. off peak)							
Household number	0	1,232,482	0	6,729	0	0	1,239,211
Per cent row	0%	99%	0%	1%	0%	0%	100%
Per cent column	0%	91%	0%	6%	0%	0%	5%
Sample size	0	713	0	5	0	0	718
Electricity (standard tariff)							
Household number	22,139	14,014[6]	264,937	3,700	0	0	304,790
Per cent row	7%	5%	87%	1%	0%	0%	100%
Per cent column	0%	1%	44%	3%	0%	0%	1%
Sample size	12	7	106	3	0	0	128
Electricity (10 hr. on peak)							
Household number	907	0	15,717	0	0	0	16,624
Per cent row	5%	0%	95%	0%	0%	0%	100%
Per cent column	0%	0%	3%	0%	0%	0%	0%
Sample size	1	0	6	0	0	0	7
Electricity (10 hr. off peak)							
Household number	7,261	49,427	0	696	0	0	57,384
Per cent row	13%	86%	0%	1%	0%	0%	100%
Per cent column	0%	4%	0%	1%	0%	0%	0%
Sample size	6	24	0	1	0	0	31
Electricity (24 hr heating tariff)							
Household number	0	33,603	6,438	0	0	0	40,041
Per cent row	0%	84%	16%	0%	0%	0%	100%
Per cent column	0%	2%	1%	0%	0%	0%	0%
Sample size	0	18	2	0	0	0	20
Mains gas							
Household number	18,987,843	0	141,562	99,954	0	0	19,229,359
Per cent row	99%	0%	1%	1%	0%	0%	100%
Per cent column	95%	0%	23%	90%	0%	0%	85%
Sample size	10,117	0	53	55	0	0	10,225
Other heating							
Household number	1,054,529	0	50,402	0	32,525	395,933	1,533,389
Per cent row	69%	0%	3%	0%	2%	26%	100%
Per cent column	5%	0%	8%	0%	100%	96%	7%

[5] The BRE advised that households in this category (other than those with room heaters) are recorded as having non-standard electric systems. It is not clear whether these have storage functionality or not but we were advised to best classify them as direct-acting room heaters.

[6] We have been advised by BRE that these are households that are recorded as having storage heating but without a Time of Use meter. Hence, they will use standard-rate electricity. The sample size is very low (7) and we do not know the reason for this arrangement. For the purpose of this analysis, we classified them as "direct-acting heating" along with the rest of households that are classified as "electricity standard tariff" by the BRE.

Sample size	446	0	22	0	31	313	812
Total							
Household number	20,072,679	1,348,364	604,068	111,079	32,525	414,030	22,582,745
Per cent row	89%	6%	3%	0%	0%	2%	100%
Per cent column	100%	100%	100%	100%	100%	100%	100%
Sample size	10,582	773	238	64	31	320	12,008

Table 2: Electric heating systems in Scotland (2011-2013)

	Off peak electric	Peak electric	Mains gas	Other	Total
Boiler					
Household number	14,791	6,794	1,821,284	184,159	2,027,029
Per cent row	1%	0%	90%	9%	100%
Per cent column	5%	18%	99%	83%	85%
Sample size	57	24	6,222	951	7,254
Storage heating					
Household number	272,472	0	0	0	272,472
Per cent row	100%	0%	0%	0%	100%
Per cent column	94%	0%	0%	0%	11%
Sample size	1,132	0	0	0	1,132
Room heater					
Household number	583	30,144	6,714	5,836	43,278
Per cent row	1%	70%	16%	13%	100%
Per cent column	0%	82%	0%	3%	2%
Sample size	1	95	20	28	144
Warm air system					
Household number	3,219	0	8,134	375	11,728
Per cent row	27%	0%	69%	3%	100%
Per cent column	1%	0%	0%	0%	0%
Sample size	13	0	27	5	45
Heat pump					
Household number	0	0	0	4,882	4,882
Per cent row	0%	0%	0%	100%	100%
Per cent column	0%	0%	0%	2%	0%
Sample size	0	0	0	40	40
Community heating					
Household number	0	0	0	25,960	25,960
Per cent row	0%	0%	0%	100%	100%
Per cent column	0%	0%	0%	12%	1%
Sample size	0	0	0	116	116
Total					
Household number	291,065	36,938	1,836,132	221,213	2,385,348
Per cent row	12%	2%	77%	9%	100%
Per cent column	100%	100%	100%	100%	100%
Sample size	1,203	119	6,269	1,140	8,731

Table 3: Electric heating systems in Scotland (for 2013)

	Off peak electric	Peak electric	Mains gas	Other	Total
Boiler					
Household number	14,546	6,842	1,861,480	183,311	2,066,179
Per cent row	1%	0%	90%	9%	100%
Per cent column	5%	23%	100%	82%	86%
Sample size	19	9	1967	297	2292
Storage heating					
Household number	257,727	0	0	0	257,727
Per cent row	100%	0%	0%	0%	100%
Per cent column	93%	0%	0%	0%	11%
Sample size	329	0	0	0	329
Room heater					
Household number	1,750	23,492	2,406	7,277	34,926
Per cent row	5%	67%	7%	21%	100%
Per cent column	1%	77%	0%	3%	1%
Sample size	1	22	2	15	40
Warm air system					
Household number	3,577	0	6,240	226	10,043
Per cent row	36%	0%	62%	2%	100%
Per cent column	1%	0%	0%	0%	0%
Sample size	3	0	7	2	12
Heat pump					
Household number	0	0	0	7,835	7,835
Per cent row	0%	0%	0%	100%	100%
Per cent column	0%	0%	0%	4%	0%
Sample size	0	0	0	18	18
Community heating					
Household number	0	0	0	25,088	25,088
Per cent row	0%	0%	0%	100%	100%
Per cent column	0%	0%	0%	11%	1%
Sample size	0	0	0	34	34
Total					
Household number	277,601	30,335	1,870,125	223,738	2,401,798
Per cent row	12%	1%	78%	9%	100%
Per cent column	100%	100%	100%	100%	100%
Sample size	352	31	1,976	366	2,725

Results

1.13 Table 4 shows the heating systems for England, Scotland and Wales. To be comparable with published statistics, the results for England refer to 2012/13 and 2013/14 whilst the results for Scotland refer to 2013 only. The figures for Wales are based on the aforementioned report by Consumer Futures using 2008 data.[7] For the purposes of this table only, we show the results for heat pumps separately and include these in the total number of households with electric

[7] The figures for storage heating systems and direct-acting heating systems for Wales have been estimated based on the electric heating system outlined in the Consumer Futures report.

heating systems. This is so that figures can be compared with other published statistics.

1.14 Please note that category "other heating" contains communal heating. The heating source for communal heating is not recorded in household surveys, so could for example be mains gas.

Table 4: Households by heating systems in Great Britain

		England	Scotland	Wales	Total GB
Number of households by heating (in 000's)	Total number of households	22,583	2,402	1,268	26,253
	Electric heating systems	1,853	316	63	2,231
	Mains gas heating	19,229	1,870	995	22,094
	Other heating	1,501	216	211	1,928
Per cent of households by heating	Electric heating	8%	13%	5%	8.5%
	Mains gas	85%	78%	78%	84.2%
	Other heating	7%	9%	17%	7.3%
Types of electric heating (in 000's)	Storage heating systems	1,337	278	51	1,665
	Direct-acting heating	483	30	12	526
	Heat pumps	33	8	-	40

Results for England

1.15 Table 5 shows the detailed results of our analysis for England. The percentages add up to 100% for each heating type within each category: For example, 17% of all households with storage heating systems live in dwellings that were built before 1919. For table 6 on the other hand, the same statistics are shown but with percentages adding up to 100% in each row. For example: Amongst all dwellings that were built before 1919, 5% use storage heating systems. Table 6 also shows the unweighted sample size for each row (this will also apply to table 5).

1.16 Some categories are only applicable to a sub-set of people. For example the question "Reason for not being able to keep living room warm" only applies to households that cannot keep their living room warm enough. Any question this applies to is marked as "if applicable". Sample sizes for these questions will be lower as can be seen in table 6.

1.17 For an explanation of the Decent Home Standard, see the latest EHS headline report[8]. Data on income quintiles, vulnerability (DECC definition for fuel poverty purposes), payment type, and fuel poverty have been taken from DECC's fuel poverty dataset which accompanies the EHS.

[8] Criteria 1 ('minimum standard') is based on 15 HHSRS (Housing Health and Safety Rating System) hazards to be consistent with the EHS headline report: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284648/English_Housing_Survey_Headline_Report_2012-13.pdf.

Table 5: Results of survey analysis for England, percentages shown add to 100% for each heating system within one category

	Households by heating fuel				All households	
	Storage heating system	Direct-acting heating	Mains gas	Other heating	Per cent	In thousands
Age of dwelling						
Pre 1919	17%	27%	19%	31%	20%	4,437
1919-1964	19%	22%	39%	24%	36%	8,234
1965-1990	41%	32%	28%	30%	29%	6,506
Post 1990	23%	19%	14%	15%	15%	3,406
Rural or urban						
City	30%	42%	21%	17%	21%	4,812
Suburban residential	49%	42%	66%	16%	61%	13,775
Rural areas	20%	15% ^	14%	67%	18%	3,996
Dwelling type						
House or bungalow	37%	33%	84%	75%	80%	17,991
Low-rise flat	55%	62%	15%	17%	18%	4,141
High-rise flat	8%	5%	1%	8%	2%	451
Tenure						
Owner occupied	37%	50%	66%	64%	63%	14,323
Private rented	37%	43%	18%	16%	19%	4,336
Local authority	8%	3% ^	7%	9%	7%	1,665
Registered Social Landlord	18%	5% ^	10%	10%	10%	2,259
Region						
North East	2% ^	5% ^	5%	3%	5%	1,142
North West	11%	12% ^	14%	6%	14%	3,073
Yorkshire and the Humber	10%	10% ^	10%	8%	10%	2,271
East Midlands	7%	3% ^	9%	8%	9%	1,934
West Midlands	10%	7% ^	10%	12%	10%	2,304
East	13%	14% ^	10%	18%	11%	2,487
London	11%	15%	15%	13%	15%	3,330
South East	16%	24%	16%	15%	16%	3,659
South West	19%	10% ^	9%	17%	11%	2,382
Deprived area						
Amongst 20% most deprived	24%	24%	20%	13%	20%	4,475
In between	65%	68%	59%	71%	60%	13,580
Amongst 20% least deprived	11%	9% ^	21%	16%	20%	4,528
Age of heating system						
Less than 3 years	11%	23%	28%	22%	27%	6,060
3 to 12 years	26%	53%	49%	39%	47%	10,554
More than 12 years	63%	24%	23%	40%	26%	5,969
Energy Efficiency Rating (EPC)						
A, B or C	28%	10% ^	24%	17%	23%	5,236
D or E	58%	33%	74%	54%	71%	15,995
F or G	14%	57%	2%	28%	6%	1,352
Type of wall						
Cavity wall	73%	52%	69%	62%	69%	15,541
Solid	23%	44%	29%	36%	29%	6,582

Other wall	3% ^	3% ^	2%	1% ^	2%	460
Cavity wall insulation (if applicable)						
Not insulated	54%	53%	39%	37%	40%	6,154
Insulated	46%	47%	61%	63%	60%	9,387
Solid wall insulation (if applicable)						
Not insulated	87%	87%	94%	89%	93%	6,150
Insulated	13%	13% ^	6%	11%	7%	432
Loft insulation (if applicable)						
None	7% ^	17% ^	4%	6%	4%	836
Less than 150mm	38%	44%	39%	32%	39%	7,623
150mm or more	55%	39%	57%	62%	57%	11,261
Meets decent home standard (based on the four criteria below)						
Decent	49%	20%	84%	69%	80%	18,041
Non decent	51%	80%	16%	31%	20%	4,542
Decent home criteria 1: Minimum standard for housing by being free of hazards						
Pass	86%	50%	90%	77%	88%	19,964
Fail	14%	50%	10%	23%	12%	2,619
Decent home criteria 2: Meets thermal comfort criterion						
Pass	57%	23%	98%	88%	93%	21,012
Fail	43%	77%	2%	12%	7%	1,571
Decent home criteria 3: Meets homes repair criterion						
Pass	96%	94%	96%	95%	96%	21,620
Fail	4% ^	6% ^	4%	5%	4%	963
Decent home criteria 4: Meets modern facilities criterion						
Pass	97%	94%	98%	98%	98%	22,155
Fail	3% ^	6% ^	2%	2% ^	2%	428
Reason for failing criteria 2 (thermal comfort)						
Failed on heating measure only	0% ^	50%	21%	6% ^	18%	288
Failed on heating and insulation measure	1% ^	37%	9% ^	22% ^	14%	219
Failed on insulation measure only	99%	14% ^	70%	72%	68%	1,064
Cost of works required to meet decent home standard (if applicable)						
Less than £2000	76%	15% ^	51%	41%	51%	2,305
Between £2000 and £5000	11%	32%	15%	20%	16%	747
More than £5000	13%	53%	34%	40%	33%	1,490
Problems with rising damp, penetrating damp or serious condensation/mould						
No problems	94%	86%	96%	96%	96%	21,634
Problem present	6%	14% ^	4%	4%	4%	949
Water system						
With central heating	1% ^	3% ^	98%	92%	89%	20,208
Dedicated boiler	2% ^	3% ^	0% ^	2% ^	0%	89
Electric immersion heater	94%	78%	1%	5%	9%	1,987
Instantaneous	3% ^	16% ^	1%	1% ^	1%	299
Connection to mains gas						

grid						
Mains gas supply	6%	25%	100%	10%	87%	19,581
No mains gas supply	94%	75%	0% ^	90%	13%	3,002
Type of electricity meter						
Single-rate meter	0% ^	63%	0% ^	2% ^	1%	332
Economy 7	93%	34%	0% ^	0% ^	6%	1,406
Other Time of Use meter	7%	3% ^	0% ^	0% ^	1%	114
Not recorded	0% ^	0% ^	100%	98%	92%	20,730
Household composition						
Couple, no dependent child(ren)	25%	32%	37%	43%	36%	8,189
Couple with dependent child(ren)	10%	9% ^	22%	18%	21%	4,719
Lone parent with dependent child(ren)	6%	2% ^	8%	4%	7%	1,635
Other multi-person households	5%	14% ^	8%	6%	8%	1,847
One person under 60	25%	29%	11%	11%	12%	2,788
One person aged 60 or over	29%	13%	14%	19%	15%	3,405
Adults in household						
Only one adult	59%	45%	33%	33%	35%	7,828
At least two adults	41%	55%	67%	67%	65%	14,755
Children in household						
No children	84%	87%	69%	78%	71%	16,001
At least one child	16%	13%	31%	22%	29%	6,582
Age of oldest person						
34 years or under	24%	32%	16%	11%	16%	3,716
Between 35 and 64 years	41%	46%	55%	50%	54%	12,117
65 years or older	35%	22%	29%	39%	30%	6,750
Length of residency						
Less than 4 years	52%	57%	34%	33%	35%	7,998
5 to 9 years	15%	14%	19%	18%	18%	4,166
10 years or more	33%	29%	47%	49%	46%	10,419
Income quintile (including benefits and before housing costs)						
Lowest quintile	36%	31%	19%	19%	20%	4,551
Second to fourth quintile	56%	55%	60%	57%	60%	13,469
Highest quintile	7%	14% ^	21%	24%	20%	4,563
Income quintile (equivalised to account for family structure and after housing costs)						
Lowest quintile	26%	29%	20%	14%	20%	4,481
Second to fourth quintile	64%	55%	60%	58%	60%	13,613
Highest quintile	11%	17%	20%	28%	20%	4,489
Employment status						
One or more work full time	41%	63%	53%	54%	53%	11,957
One or more work part time	7%	3% ^	9%	6%	9%	1,965
None working, one or more retired	36%	20%	27%	33%	28%	6,259
None working and none retired	16%	14%	10%	7%	11%	2,402
Household on means tested benefits or tax credits						
Yes	36%	22%	23%	20%	24%	5,354

No	64%	78%	77%	80%	76%	17,229
Anyone in household with long term illness or disability						
Yes	33%	27%	32%	29%	32%	7,188
No	67%	73%	68%	71%	68%	15,338
Not known	0% ^	1% ^	0%	0% ^	0%	56
Vulnerability, DECC definition (children, the elderly, or long-term illness/disability)						
Not vulnerable	33%	53%	28%	25%	28%	6,372
Vulnerable	67%	47%	72%	75%	72%	16,211
Vulnerability, EHS definition (certain means tested or disability related benefits)						
Not vulnerable	59%	77%	73%	78%	72%	16,333
Vulnerable	41%	23%	27%	22%	28%	6,249
Fuel poverty (LIHC indicator)						
In fuel poverty	13%	23%	10%	13%	10%	2,347
Not in fuel poverty	87%	77%	90%	87%	90%	20,236
Can you keep living room warm? (excl "do not know" or "no answer")						
Yes	78%	82%	89%	94%	88%	19,637
No	22%	18%	11%	6%	12%	2,623
Reason for not being able to keep living room warm? (If applicable)						
Costs too much	29%	45% ^	40%	39% ^	39%	1,012
Not possible to heat comfortably	42%	27% ^	35%	35% ^	36%	936
Both of the above	24%	27% ^	20%	11% ^	20%	529
Neither or do not know	5% ^	2% ^	5%	15% ^	6%	146
Ease of meeting heating/fuel costs?						
Very or fairly easy	56%	58%	58%	64%	59%	13,261
Neither easy nor difficult	19%	13%	21%	19%	20%	4,575
Fairly or very difficult	23%	25%	20%	15%	20%	4,531
Do not know	2% ^	4% ^	1%	1% ^	1%	216
Pattern of a household member being at home during the week in winter						
All day	49%	32%	44%	49%	45%	10,087
During morning, lunch or afternoon	8%	9% ^	11%	12%	11%	2,542
Only in the evening	25%	37%	27%	20%	27%	5,991
Other pattern or do not know	17%	21%	17%	19%	18%	3,962
Did you see your EPC? (If applicable, ie moved in after October 2008)						
Yes	34%	28% ^	51%	44%	47%	1,512
No	54%	59%	40%	47%	42%	1,354
Do not know	12% ^	13% ^	10%	9% ^	10%	321
Did the EPC influence your property choice? (If applicable, ie if yes to previous question)						
At least a little	22% ^	41% ^	22%	17% ^	22%	332
Not at all	75%	59% ^	77%	83%	76%	1,155
Do not know	2% ^	0% ^	2% ^	0% ^	2%	25
Payment method for electricity						
Direct debit	54%	55%	69%	68%	68%	15,391
Standard credit	24%	21%	15%	9%	16%	3,500
Prepayment	22%	25%	15%	22%	16%	3,692

All households in thousands	1,337	483	19,229	1,533	22,583
Sample size, unweighted	*769*	*202*	*10,225*	*812*	*12,008*

^ *Indicates less than 30 responses in category and should be treated with caution*

1.18 For the following table 6 percentages add up to 100% in each row. For example: Amongst all dwellings that were built before 1919, 5% use storage heating systems. The table also shows the unweighted sample size for each row (the same numbers will also apply to table 5).

Table 6: Results of survey analysis for England, percentages shown add up to 100% in each row

	Households by heating system				**All households**	
	Storage heating system	Direct-acting heating	Mains gas	Other heating	In thousands	*Sample size*
Age of dwelling						
Pre 1919	5%	3%	81%	11%	4,437	*1,866*
1919-1964	3%	1%	91%	5%	8,234	*4,807*
1965-1990	8%	2%	82%	7%	6,506	*3,710*
Post 1990	9%	3%	81%	7%	3,406	*1,625*
Rural or urban						
City	8%	4%	82%	5%	4,812	*2,615*
Suburban residential	5%	1%	92%	2%	13,775	*7,537*
Rural areas	7%	2% ^	66%	26%	3,996	*1,856*
Dwelling type						
House or bungalow	3%	1%	90%	6%	17,991	*9,000*
Low-rise flat	18%	7%	69%	6%	4,141	*2,711*
High-rise flat	23%	6%	45%	27%	451	*297*
Tenure						
Owner occupied	3%	2%	88%	7%	14,323	*4,859*
Private rented	11%	5%	78%	6%	4,336	*2,405*
Local authority	6%	1% ^	85%	8%	1,665	*2,154*
Registered Social Landlord	11%	1% ^	81%	7%	2,259	*2,590*
Region						
North East	3% ^	2% ^	90%	4%	1,142	*715*
North West	5%	2% ^	90%	3%	3,073	*1,757*
Yorkshire and the Humber	6%	2% ^	87%	5%	2,271	*1,187*
East Midlands	5%	1% ^	88%	7%	1,934	*1,167*
West Midlands	6%	1% ^	85%	8%	2,304	*1,174*
East	7%	3% ^	79%	11%	2,487	*1,343*
London	5%	2%	87%	6%	3,330	*1,517*
South East	6%	3%	85%	6%	3,659	*1,924*
South West	11%	2% ^	76%	11%	2,382	*1,224*
Deprived area						
Amongst 20% most deprived	7%	3%	86%	4%	4,475	*3,580*

In between	6%	2%	83%	8%	13,580	*6,646*
Amongst 20% least deprived	3%	1% ^	90%	5%	4,528	*1,782*
Age of heating system						
Less than 3 years	2%	2%	90%	5%	6,060	*3,386*
3 to 12 years	3%	2%	89%	6%	10,554	*5,618*
More than 12 years	14%	2%	74%	10%	5,969	*3,004*
Energy Efficiency Rating (EPC)						
A, B or C	7%	1% ^	87%	5%	5,236	*3,355*
D or E	5%	1%	89%	5%	15,995	*8,102*
F or G	14%	21%	34%	32%	1,352	*551*
Type of wall						
Cavity wall	6%	2%	86%	6%	15,541	*8,633*
Solid wall	5%	3%	84%	8%	6,582	*3,124*
Other wall	10% ^	4% ^	82%	4% ^	460	*251*
Cavity wall insulation (if applicable)						
Not insulated	9%	2%	84%	6%	6,154	*3,283*
Insulated	5%	1%	87%	6%	9,387	*5,350*
Solid wall insulation (if applicable)						
Not insulated	4%	3%	84%	8%	6,150	*2,766*
Insulated	10%	6% ^	70%	14%	432	*358*
Loft insulation (if applicable)						
None	6% ^	5% ^	79%	9%	836	*374*
Less than 150mm	4%	2%	89%	5%	7,623	*3,744*
150mm or more	4%	1%	88%	7%	11,261	*6,006*
Meets decent home standard (based on the four criteria below)						
Decent	4%	1%	90%	6%	18,041	*9,746*
Non decent	15%	9%	66%	11%	4,542	*2,262*
Decent home criteria 1: Minimum standard for housing by being free of hazards						
Pass	6%	1%	87%	6%	19,964	*10,769*
Fail	7%	9%	70%	14%	2,619	*1,239*
Decent home criteria 2: Meets thermal comfort criterion						
Pass	4%	1%	89%	6%	21,012	*11,235*
Fail	37%	24%	28%	11%	1,571	*773*
Decent home criteria 3: Meets homes repair criterion						
Pass	6%	2%	85%	7%	21,620	*11,504*
Fail	5% ^	3% ^	84%	8%	963	*504*
Decent home criteria 4: Meets modern facilities criterion						
Pass	6%	2%	85%	7%	22,155	*11,790*
Fail	8% ^	7% ^	79%	6% ^	428	*218*
Reason for failing criteria 2 (thermal comfort)						
Failed on heating measure only	0% ^	64%	32%	3% ^	288	*108*
Failed on heating and insulation measure	3% ^	62%	18% ^	18% ^	219	*91*
Failed on insulation measure only	54%	5% ^	30%	12%	1,064	*574*
Cost of works required to meet decent home standard (if applicable)						
Less than £2000	22%	3% ^	66%	8%	2,305	*1,189*
Between £2000 and £5000	10%	16%	61%	13%	747	*366*

More than £5000	6%	14%	68%	13%	1,490	*707*
Problems with rising damp, penetrating damp or serious condensation/mould						
No problems	6%	2%	85%	7%	21,634	*11,443*
Problem present	9%	7% ^	77%	6%	949	*565*
Water system						
With central heating	0% ^	0% ^	93%	7%	20,208	*10,759*
Dedicated boiler	24% ^	16% ^	26% ^	33% ^	89	*42*
Electric immersion heater	64%	19%	14%	4%	1,987	*1,091*
Instantaneous	15% ^	26% ^	54%	5% ^	299	*116*
Connection to mains gas grid						
Mains gas supply	0%	1%	98%	1%	19,581	*10,388*
No mains gas supply	42%	12%	0% ^	46%	3,002	*1,620*
Type of electricity meter						
Single-rate meter	0% ^	92%	0% ^	8% ^	332	*155*
Economy 7	88%	12%	0% ^	0% ^	1,406	*789*
Other Time of Use meter	85%	15% ^	0% ^	0% ^	114	*58*
Not recorded	0% ^	0% ^	93%	7%	20,730	*11,006*
Household composition						
Couple, no dependent child(ren)	4%	2%	86%	8%	8,189	*3,565*
Couple with dependent child(ren)	3%	1% ^	90%	6%	4,719	*2,509*
Lone parent with dependent child(ren)	5%	1% ^	91%	3%	1,635	*1,373*
Other multi-person households	4%	4% ^	87%	5%	1,847	*974*
One person under 60	12%	5%	77%	6%	2,788	*1,589*
One person aged 60 or over	11%	2%	78%	9%	3,405	*1,998*
Adults in household						
Only one adult	10%	3%	81%	7%	7,828	*4,960*
At least two adults	4%	2%	88%	7%	14,755	*7,048*
Children in household						
No children	7%	3%	83%	7%	16,001	*7,979*
At least one child	3%	1%	91%	5%	6,582	*4,029*
Age of oldest person						
34 years or under	9%	4%	83%	5%	3,716	*2,170*
Between 35 and 64 years	5%	2%	87%	6%	12,117	*6,501*
65 years or older	7%	2%	83%	9%	6,750	*3,337*
Length of residency						
Less than 4 years	9%	3%	82%	6%	7,998	*4,741*
5 to 9 years	5%	2%	87%	7%	4,166	*2,190*
10 years or more	4%	1%	87%	7%	10,419	*5,077*
Income quintile (including benefits and before housing costs)						
Lowest quintile	11%	3%	80%	6%	4,551	*2,951*
Second to fourth quintile	6%	2%	86%	7%	13,469	*7,413*
Highest quintile	2%	1% ^	88%	8%	4,563	*1,644*
Income quintile (equivalised to account for family structure and after housing costs)						
Lowest quintile	8%	3%	84%	5%	4,481	*3,208*
Second to fourth quintile	6%	2%	85%	7%	13,613	*7,186*
Highest quintile	3%	2%	86%	9%	4,489	*1,614*

Employment status						
One or more work full time	5%	3%	86%	7%	11,957	*5,436*
One or more work part time	5%	1% ^	90%	5%	1,965	*1,237*
None working, one or more retired	8%	2%	83%	8%	6,259	*3,214*
None working and none retired	9%	3%	84%	5%	2,402	*2,121*
Household on means tested benefits or tax credits						
Yes	9%	2%	83%	6%	5,354	*4,596*
No	5%	2%	86%	7%	17,229	*7,412*
Anyone in household with long term illness or disability						
Yes	6%	2%	86%	6%	7,188	*4,514*
No	6%	2%	85%	7%	15,338	*7,463*
Not known	0% ^	5% ^	95%	0% ^	56	*31*
Vulnerability, DECC definition (children, the elderly, or long-term illness/disability)						
Not vulnerable	7%	4%	83%	6%	6,372	*2,712*
Vulnerable	6%	1%	86%	7%	16,211	*9,296*
Vulnerability, EHS definition (certain means tested or disability related benefits)						
Not vulnerable	5%	2%	86%	7%	16,333	*6,999*
Vulnerable	9%	2%	84%	5%	6,249	*5,009*
Fuel poverty (LIHC indicator)						
In fuel poverty	8%	5%	79%	9%	2,347	*1,389*
Not in fuel poverty	6%	2%	86%	7%	20,236	*10,619*
Can you keep living room warm? (excl "do not know" or "no answer")						
Yes	5%	2%	86%	7%	19,637	*9,948*
No	11%	3%	83%	3%	2,623	*1,854*
Reason for not being able to keep living room warm? (If applicable)						
Costs too much	8%	4% ^	85%	3% ^	1,012	*725*
Not possible to heat comfortably	13%	2% ^	81%	3% ^	936	*639*
Both of the above	13%	4% ^	81%	2% ^	529	*397*
Neither or do not know	11% ^	1% ^	79%	9% ^	146	*93*
Ease of meeting heating/fuel costs?						
Very or fairly easy	6%	2%	85%	7%	13,261	*6,254*
Neither easy nor difficult	5%	1%	87%	6%	4,575	*2,451*
Fairly or very difficult	7%	3%	85%	5%	4,531	*3,170*
Do not know	14% ^	8% ^	68%	10% ^	216	*133*
Pattern of a household member being at home during the week in winter						
All day	7%	2%	85%	7%	10,087	*5,866*
During morning, lunch or afternoon	4%	2% ^	87%	7%	2,542	*1,423*
Only in the evening	6%	3%	86%	5%	5,991	*2,794*
Other pattern or do not know	6%	3%	84%	7%	3,962	*1,925*
Did you see your EPC? If applicable, ie moved in after October 2008)						
Yes	7%	3% ^	85%	5%	1,512	*808*
No	13%	6%	75%	6%	1,354	*915*
Do not know	13% ^	6% ^	77%	5% ^	321	*188*
How far did the EPC influence your property choice? (If yes to previous question)						
At least a little	8% ^	5% ^	84%	4% ^	332	*158*
Not at all	7%	2% ^	85%	5%	1,155	*635*

Do not know	10% ^	0% ^	90% ^	0% ^	25	*15*
Payment method for electricity						
Direct debit	5%	2%	87%	7%	15,391	*6,775*
Standard credit	9%	3%	84%	4%	3,500	*3,246*
Prepayment	8%	3%	80%	9%	3,692	*1,987*
All households in thousands	1,337	483	19,229	1,533	22,583	
All households in per cent	6%	2%	85%	7%		100%
Sample size, unweighted	*769*	*202*	*10,225*	*812*		*12,008*

^ *Indicates less than 30 responses in category and should be treated with caution*

Results for Scotland

1.19 Table 7 shows the detailed results of our analysis for Scotland. Similar to the results for England, the percentages add up to 100% for each heating type within each category: For example, 16% of all storage heating households live in dwellings that were built before 1919. For table 8 on the other hand, the same statistics are shown but with percentages adding up to 100% in each row. For example: Amongst all dwellings that were built before 1919, 10% use storage heating systems. Table 8 also shows the unweighted sample size for each row (this will also apply to table 7).

1.20 Some categories are only applicable to a sub-set of people. For example the question "cavity wall insulation" only applies to households with cavity walls. Any question this applies to is clearly marked with "if applicable". Sample sizes for these questions will be lower as can be seen in table 8.

1.21 Note that several questions that we report on for England (eg ability to keep warm, payment type) are not available for Scotland in a sufficiently large sample size to allow for a detailed assessment (eg only a subset of people have been asked). High-level results can be found in the Scottish House Condition Survey key findings report.[9] We refer to these results throughout the report where possible.

1.22 The tables show whether properties are on or off the gas grid. This is based on the location of the dwelling relative to the gas distribution network. Dwellings within 63 meters of the pipe are considered "on the gas grid". Hence, this does not necessarily mean that the dwellings as such is connected to the gas grid and is thus different to the data reported above for England.[10]

1.23 The tables also show whether households are in receipt of ECO-qualifying benefits. This indicates whether the highest income householder or their partner are receiving any of the following benefits: Pension Credit, Child Tax Credit,

[9] http://www.gov.scot/Resource/0046/00465627.pdf
[10] For further information, see para 6.6.4 here: http://spoxy5.insipio.com/generator/sc/www.gov.scot:80/Publications/2014/12/6903/7

Working Tax Credit, Income Support, income-based Jobseeker's Allowance, Employment and Support Allowance.

1.24 Further, the tables show whether a household may qualify for funding of improvements under the Energy Company Obligation Affordable Warmth Scheme. Whilst this only applies to those in private sector housing, this has been calculated for social housing tenants as well.

1.25 Finally, for an explanation of the Scottish Housing Quality Standard, see the aforementioned Scottish House Condition Survey key findings report.

Table 7: Results of survey analysis for Scotland, percentages shown add to 100% for each heating system within one category

	Households by heating system				All households	
	Storage heating system	Direct-acting heating	Mains gas	Other heating	Per cent	In thousands
Age of dwelling						
Pre 1919	16%	41%	18%	39%	20%	481
1919-1964	25%	23% ^	38%	19%	34%	815
1965-1990	42%	27%	27%	24%	29%	687
Post 1990	17%	9% ^	17%	17%	17%	403
Rural or urban						
Urban	73%	81%	92%	21%	83%	1,974
Rural	27%	19%	8%	79%	17%	411
Dwelling type						
House or bungalow	43%	33%	64%	87%	63%	1,513
Flat	57%	67%	36%	13%	37%	872
Tenure						
Owner occupied	43%	49%	64%	70%	62%	1,470
Private rented	16%	34%	10%	12%	11%	273
Local authority	19%	6% ^	15%	6%	15%	350
Housing Association	19%	10% ^	10%	8%	11%	255
Not known	3%	1% ^	1%	4%	2%	37
Local Authority						
Aberdeen City	5% ^	5% ^	5%	1% ^	4%	104
Aberdeenshire	6%	4% ^	3%	14%	4%	106
Angus	4%	0% ^	2%	4%	2%	52
Argyll and Bute	4%	4% ^	1%	4%	2%	41
Clackmannanshire	1% ^	0% ^	1%	0% ^	1%	23
Dumfries and Galloway	3%	1% ^	2%	8%	3%	69
Dundee City	5%	9% ^	3%	1% ^	3%	70
East Ayrshire	1% ^	1% ^	3%	1% ^	2%	54
East Dunbartonshire	1% ^	1% ^	2%	1% ^	2%	44
East Lothian	2% ^	1% ^	2%	1% ^	2%	43
East Renfrewshire	1% ^	0% ^	2%	0% ^	2%	37
City of Edinburgh	8%	15% ^	11%	1% ^	9%	224
Eilean Siar	1%	0% ^	0% ^	4%	1%	13
Falkirk	2% ^	2% ^	3%	1% ^	3%	69
Fife	3% ^	1% ^	8%	2% ^	7%	162

Glasgow City	13%	20% ^	13%	2% ^	12%	285
Highland	9%	7% ^	2%	17%	4%	103
Inverclyde	2% ^	1% ^	2%	0% ^	2%	37
Midlothian	0% ^	1% ^	2%	1% ^	1%	36
Moray	1% ^	1% ^	2%	4%	2%	40
North Ayrshire	2% ^	3% ^	3%	1% ^	3%	62
North Lanarkshire	5%	4% ^	7%	1% ^	6%	147
Orkney Islands	1%	0% ^	0% ^	2%	0%	10
Perth and Kinross	5%	4% ^	2%	6%	3%	65
Renfrewshire	3% ^	2% ^	4%	1% ^	3%	81
Scottish Borders	2%	3% ^	2%	6%	2%	53
Shetland Islands	2%	0% ^	0% ^	2%	0%	10
South Ayrshire	1% ^	1% ^	2%	2% ^	2%	52
South Lanarkshire	6%	7% ^	6%	5% ^	6%	140
Stirling	2% ^	0% ^	2%	2% ^	2%	38
West Dunbartonshire	1% ^	0% ^	2%	0% ^	2%	42
West Lothian	1% ^	0% ^	4%	1% ^	3%	74
Deprived area						
Not amongst 15% deprived	80%	82%	83%	96%	84%	1,992
15% most deprived	20%	18% ^	17%	4% ^	16%	393
Not known	0% ^	0% ^	0% ^	0% ^	0%	1
Age of heating system						
1998 or post 1998	28%	23%	80%	59%	71%	1,686
Pre 1998	44%	10% ^	20%	33%	24%	564
Other/not applicable	29%	68%	0% ^	8%	6%	135
Energy Efficiency Rating (EPC)						
B or C	28%	8% ^	34%	18%	31%	743
D or E	64%	48%	65%	64%	65%	1,539
F or G	9%	44%	1%	18%	4%	103
Type of wall						
Cavity wall	74%	53%	77%	55%	74%	1,763
Solid/Other wall	26%	47%	23%	45%	26%	622
Cavity wall insulation (if applicable, ie dwellings with cavity walls)						
Not insulated, not viable	17%	21% ^	13%	14%	13%	236
Not insulated, but possible	13%	21% ^	21%	22%	20%	351
Insulated	70%	58%	67%	64%	67%	1,177
Solid/Other wall insulation (if applicable, ie dwellings without cavity walls)						
Not insulated	75%	89%	93%	82%	89%	554
Insulated	25%	11% ^	7%	18%	11%	68
Loft insulation (if applicable)						
None	3% ^	8% ^	1%	2% ^	2%	30
Less than 150mm	28%	31% ^	28%	25%	27%	495
150mm or more	70%	61%	71%	72%	71%	1,280
Meets Scottish Housing Quality Standard (SQHS)						
Pass	33%	3% ^	49%	37%	46%	1,087
Fail	67%	97%	50%	63%	54%	1,282
Not known	1% ^	0% ^	1%	0% ^	1%	17
SHQS Criteria 1: Below tolerable standard						
Pass	96%	86%	97%	94%	96%	2,296
Fail	3%	12% ^	3%	5%	3%	77
Not known	0% ^	2% ^	0% ^	1% ^	1%	12

SHQS Criteria 2: Disrepair						
Pass	99%	94%	99%	99%	99%	2,365
Fail	0% ^	1% ^	0% ^	0% ^	0%	6
Not known	1% ^	5% ^	1% ^	0% ^	1%	14
SHQS Criteria 3: Energy Efficient						
Pass	40%	3% ^	64%	43%	58%	1,381
Fail	59%	97%	36%	57%	41%	989
Not known	0% ^	0% ^	1%	0% ^	1%	15
SHQS Criteria 4: Modern Facilities						
Pass	85%	66%	88%	87%	88%	2,090
Fail	15%	34%	11%	13%	12%	293
Not known	0% ^	0% ^	0% ^	0% ^	0%	2
SHQS Criteria 5: Healthy, Safe and Secure						
Pass	85%	54%	84%	86%	84%	2,006
Fail	14%	46%	15%	14%	16%	371
Not known	1% ^	0% ^	0% ^	0% ^	0%	8
Problems with rising damp, penetrating damp or condensation						
No	83%	67%	87%	86%	87%	2,064
Yes	17%	33%	13%	14%	13%	321
Water heating fuel						
Off peak electric	95%	19% ^	0% ^	1% ^	12%	288
Peak electric	4%	80%	1%	4%	3%	61
Other	1% ^	1% ^	99%	94%	85%	2,036
On the gas grid						
Yes	67%	80%	96%	17%	85%	2,016
No	33%	20%	4%	83%	15%	369
Household composition						
Single adult	27%	38%	16%	11%	17%	405
Small adult	15%	25% ^	17%	16%	17%	399
Single parent	6%	5% ^	6%	2%	5%	125
Small family	6%	6% ^	15%	13%	13%	317
Large family	4%	1% ^	6%	7%	6%	146
Large adult	4%	6% ^	10%	9%	9%	210
Older smaller	15%	3% ^	17%	23%	17%	400
Single pensioner	23%	15% ^	15%	18%	16%	382
Adults in household						
Only one adult	56%	59%	36%	32%	38%	913
At least two adults	44%	41%	64%	68%	62%	1,473
Pensioners in households						
No pensioners	61%	81%	66%	55%	65%	1,540
At least one pensioner	39%	19% ^	34%	45%	35%	845
Children in household						
No children	84%	87%	73%	78%	75%	1,797
At least one child	16%	13% ^	27%	22%	25%	589
Age of highest income earner						
34 years or under	22%	33%	17%	6%	17%	395
Between 35 and 64 years	45%	49%	57%	58%	55%	1,314
65 years or older	33%	18% ^	27%	36%	28%	677

Time in current residency						
Less than 4 years	40%	45%	32%	26%	33%	785
5 to 10 years	19%	19% ^	22%	25%	22%	517
More than 10 years	34%	30%	39%	40%	39%	924
Not known	7%	5% ^	6%	9%	7%	158
Household income per week						
Less than £300	21%	28%	14%	13%	15%	362
Between £300 and £499	57%	51%	47%	40%	48%	1,133
£500 or more	20%	17% ^	37%	46%	35%	844
Not known	3% ^	4% ^	2%	1% ^	2%	46
In receipt of ECO-qualifying benefits						
No	73%	80%	77%	85%	77%	1,838
Yes	27%	20% ^	23%	15%	23%	547
Qualifies for ECO Affordable Warmth scheme						
No	84%	93%	88%	91%	88%	2,095
Yes	16%	7% ^	12%	9%	12%	290
Any long-term sick or disabled people in household						
Yes	41%	35%	36%	38%	37%	872
No	59%	65%	64%	62%	63%	1,511
Not known	0% ^	0% ^	0% ^	0% ^	0%	2
Fuel poverty						
Not (<8%)	39%	19% ^	56%	36%	52%	1,203
Marginal (8-10%)	13%	13% ^	12%	12%	12%	291
Fuel poor (10-20%)	33%	37%	24%	32%	26%	612
Extreme (20%+)	15%	31%	7%	20%	10%	224
All households	291	37	1,836	221		2,385
Sample size, unweighted	1,203	119	6,269	1,140		8,731

^ *Indicates less than 30 responses in category and should be treated with caution*

1.26 For table 8 percentages add up to 100% in each row. For example: Amongst all dwellings that were built before 1919, 9% use storage heating systems. The table also shows the unweighted sample size for each row (this will also apply to table 7).

Table 8: Results of survey analysis for Scotland, percentages shown add up to 100% in each row

	Households by heating system				All households	
	Storage heating system	Direct-acting heating	Mains gas	Other heating	In thousands	Sample size
Age of dwelling						
Pre 1919	9%	3%	69%	18%	481	1,642
1919-1964	9%	1% ^	85%	5%	815	3,108
1965-1990	18%	1%	73%	8%	687	2,547
Post 1990	13%	1% ^	77%	10%	403	1,434

Rural or urban						
Urban	11%	2%	85%	2%	1,974	6,773
Rural	19%	2%	36%	43%	411	1,958
Dwelling type						
House or bungalow	8%	1%	78%	13%	1,513	6,038
Flat	19%	3%	75%	3%	872	2,693
Tenure						
Owner occupied	8%	1%	80%	11%	1,470	5,528
Private rented	17%	5%	69%	10%	273	911
Local authority	16%	1% ^	79%	4%	350	1,260
Housing Association	22%	1% ^	70%	7%	255	904
Not known	22%	1% ^	54%	22%	37	128
Local Authority						
Aberdeen City	13% ^	2% ^	82%	3% ^	104	238
Aberdeenshire	16%	1% ^	53%	30%	106	236
Angus	20%	0% ^	62%	18%	52	210
Argyll and Bute	27%	4% ^	48%	21%	41	209
Clackmannanshire	7% ^	0% ^	90%	3% ^	23	240
Dumfries and Galloway	13%	0% ^	60%	27%	69	257
Dundee City	20%	5% ^	73%	2% ^	70	224
East Ayrshire	3% ^	1% ^	90%	6% ^	54	221
East Dunbartonshire	4% ^	1% ^	92%	3% ^	44	232
East Lothian	11% ^	1% ^	81%	7% ^	43	260
East Renfrewshire	5% ^	0% ^	93%	2% ^	37	218
City of Edinburgh	10%	2% ^	87%	1% ^	224	553
Eilean Siar	28%	0% ^	9% ^	63%	13	254
Falkirk	10% ^	1% ^	85%	4% ^	69	223
Fife	6% ^	0% ^	90%	3% ^	162	395
Glasgow City	13%	3% ^	82%	2% ^	285	715
Highland	25%	2% ^	36%	36%	103	260
Inverclyde	12% ^	1% ^	84%	3% ^	37	238
Midlothian	2% ^	1% ^	87%	9% ^	36	233
Moray	9% ^	1% ^	69%	21%	40	244
North Ayrshire	8% ^	2% ^	86%	4% ^	62	242
North Lanarkshire	10%	1% ^	87%	2% ^	147	339
Orkney Islands	42%	2% ^	0% ^	56%	10	240
Perth and Kinross	21%	2% ^	58%	19%	65	252
Renfrewshire	10% ^	1% ^	87%	3% ^	81	232
Scottish Borders	12%	2% ^	61%	25%	53	242
Shetland Islands	48%	2% ^	0% ^	50%	10	266
South Ayrshire	7% ^	1% ^	83%	9% ^	52	225
South Lanarkshire	13%	2% ^	78%	7% ^	140	338
Stirling	12% ^	0% ^	76%	11% ^	38	214
West Dunbartonshire	8% ^	0% ^	90%	2% ^	42	228
West Lothian	5% ^	0% ^	92%	3% ^	74	253
Deprived area						
Not amongst 15% deprived	12%	2%	76%	11%	1,992	7,480
15% most deprived	15%	2% ^	81%	2% ^	393	1,248
Not known	54% ^	0% ^	46% ^	0% ^	1	3
Age of heating system						
1998 or post 1998	5%	0%	87%	8%	1,686	6,015
Pre 1998	22%	1% ^	64%	13%	564	2,174
Other/not applicable	62%	19%	6% ^	14%	135	542

Energy Efficiency Rating (EPC)						
B or C	11%	0% ^	83%	5%	743	2,444
D or E	12%	1%	78%	9%	1,539	5,847
F or G	24%	16%	22%	38%	103	440
Type of wall						
Cavity wall	12%	1%	80%	7%	1,763	6,541
Solid/Other wall	12%	3%	69%	16%	622	2,190
Cavity wall insulation (if applicable, ie dwellings with cavity walls)						
Not insulated, not viable	16%	2% ^	75%	7%	236	867
Not insulated, but possible	8%	1% ^	83%	8%	351	1,369
Insulated	13%	1%	80%	7%	1,177	4,305
Solid/Other wall insulation (if applicable, ie dwellings without cavity walls)						
Not insulated	10%	3%	72%	15%	554	1,896
Insulated	28%	3% ^	44%	25%	68	294
Loft insulation (if applicable)						
None	14% ^	5% ^	64%	16% ^	30	111
Less than 150mm	10%	1% ^	79%	10%	495	1,921
150mm or more	9%	1%	78%	11%	1,280	4,945
Meets Scottish Housing Quality Standard (SQHS)						
Pass	9%	0% ^	84%	8%	1,087	3,868
Fail	15%	3%	71%	11%	1,282	4,811
Not known	13% ^	0% ^	82%	5% ^	17	52
SHQS Criteria 1: Below tolerable standard						
Pass	12%	1%	77%	9%	2,296	8,407
Fail	12%	6% ^	68%	14%	77	284
Not known	11% ^	6% ^	67% ^	16% ^	12	40
SHQS Criteria 2: Disrepair						
Pass	12%	1%	77%	9%	2,365	8,658
Fail	2% ^	6% ^	76% ^	17% ^	6	27
Not known	20% ^	14% ^	66% ^	1% ^	14	46
SHQS Criteria 3: Energy Efficient						
Pass	8%	0% ^	85%	7%	1,381	4,836
Fail	17%	4%	66%	13%	989	3,852
Not known	10% ^	0% ^	87%	3% ^	15	43
SHQS Criteria 4: Modern Facilities						
Pass	12%	1%	78%	9%	2,090	7,679
Fail	15%	4%	72%	9%	293	1,046
Not known	0% ^	0% ^	85% ^	15% ^	2	6
SHQS Criteria 5: Healthy, Safe and Secure						
Pass	12%	1%	77%	9%	2,006	7,401
Fail	11%	5%	76%	8%	371	1,305
Not known	25% ^	0% ^	65% ^	10% ^	8	25
Problems with rising damp, penetrating damp or condensation						
No	12%	1%	78%	9%	2,064	7,579
Yes	15%	4%	72%	9%	321	1,152
Water heating fuel						
Off peak electric	96%	2% ^	0% ^	1% ^	288	1,206
Peak electric	18%	49%	18%	15%	61	209

Other	0% ^	0% ^	90%	10%	2,036	7,316
On the gas grid						
Yes	10%	1%	87%	2%	2,016	6,852
No	26%	2%	22%	50%	369	1,879
Household composition						
Single adult	20%	3%	71%	6%	405	1,390
Small adult	11%	2% ^	78%	9%	399	1,384
Single parent	14%	2% ^	81%	4%	125	473
Small family	6%	1% ^	84%	9%	317	1,160
Large family	8%	0% ^	82%	10%	146	564
Large adult	6%	1% ^	84%	10%	210	798
Older smaller	11%	0% ^	76%	13%	400	1,549
Single pensioner	18%	1% ^	70%	11%	382	1,413
Adults in household						
Only one adult	18%	2%	72%	8%	913	3,276
At least two adults	9%	1%	80%	10%	1,473	5,455
Pensioners in households						
No pensioners	12%	2%	79%	8%	1,540	5,512
At least one pensioner	13%	1% ^	74%	12%	845	3,219
Children in household						
No children	14%	2%	75%	10%	1,797	6,534
At least one child	8%	1% ^	83%	8%	589	2,197
Age of highest income earner						
34 years or under	16%	3%	77%	4%	395	1,319
Between 35 and 64 years	10%	1%	79%	10%	1,314	4,836
65 years or older	14%	1% ^	73%	12%	677	2,576
Time in current residency						
Less than 4 years	15%	2%	76%	7%	785	2,743
5 to 10 years	10%	1% ^	78%	11%	517	1,880
More than 10 years	11%	1%	78%	10%	924	3,492
Not known	13%	1% ^	73%	12%	158	616
Household income per week						
Less than £300	17%	3%	73%	8%	362	1,296
Between £300 and £499	15%	2%	76%	8%	1,133	4,149
£500 or more	7%	1% ^	80%	12%	844	3,142
Not known	18% ^	3% ^	73%	6% ^	46	144
In receipt of ECO-qualifying benefits						
No	12%	2%	77%	10%	1,838	6,674
Yes	14%	1% ^	78%	6%	547	2,057
Qualifies for ECO Affordable Warmth scheme						
No	12%	2%	77%	10%	2,095	7,654
Yes	16%	1% ^	77%	7%	290	1,077
Any long-term sick or disabled people in household						
Yes	14%	1%	75%	10%	872	3,180
No	11%	2%	78%	9%	1,511	5,543
Not known	7% ^	0% ^	93% ^	0% ^	2	8
Fuel poverty						
Not (<8%)	9%	1% ^	84%	6%	1,203	4,257

Marginal (8-10%)	13%	2% ^	76%	9%	291	1,098
Fuel poor (10-20%)	15%	2%	71%	11%	612	2,298
Extreme (20%+)	19%	5%	57%	19%	224	896
All households	291	37	1,836	221	2,385	8,731
All households in per cent	12%	2%	77%	9%	100%	
Sample size, unweighted	1,203	119	6,269	1,140	8,731	

^ *Indicates less than 30 responses in category and should be treated with caution*

Appendix 2 – Analysis of consumer contacts data

Background and methodology

1.1 This Annex summarises Ofgem's analysis of the type of queries or complaints that consumers had when approaching Citizens Advice Consumer Service over the six months period from October 2014 to March 2015.

1.2 There is no easy way to filter relevant cases, so we searched the database for key words such as "electric heating", "Economy 7, "Economy 10", or "no gas". It is very likely that there are more cases in the consumer contacts database than we have picked up through this approach or where the heating source or tariff arrangements were not part of the conversation between the customer and the advisor. Further, it is unlikely that all of these contacts recorded here are from electric heating customers as we often do not know the heating source when ToU tariffs or complex metering arrangements are discussed. Customers that query whether their ToU tariff is suitable for them are in almost all cases non-electric heating households.

1.3 We have sought to assign all cases to one category to understand patterns. However, there are many cases where a query falls into several categories. We have sought to assign these contacts to one of the categories below unless for example the complaint dealt with several distinct issues. Only in about 10% of the cases (65) was a contact assigned to more than one category (leading to a total count of 751 in table 1, of which 686 are unique contacts).

High level findings and comparison to previous findings

1.4 Between October 2014 and March 2015, we identified 686 unique contacts that have been made to Citizens Advice Consumer Service regarding issues related to electric heating, "non-gas" and Time of Use (ToU) tariffs. Table 1 shows the top complaints and queries.

Table 1: Number of customer contacts logged

Issue	Contacts	Per cent
Bill issues	171	23%
Switching	101	13%
Faulty meter	93	12%
Suitability of ToU tariff	64	9%
Gas bill despite no gas usage	62	8%
Advice on alternative heating systems	62	8%
Meter readings transposed	50	7%
Meter change issue	50	7%
Complexity	37	5%
Miscellaneous	27	4%
Affordability challenges	19	3%
Faulty heating	15	2%
Total	751	100%

1.5 This shows that customers were mainly concerned about their bills, followed by switching issues and faulty meters. Further many contacts were about the suitability of their ToU tariff; receiving a gas bill despite not using any gas (mostly standing charges); or seeking information on new heating systems. Many customers also complained that their peak and off-peak readings had been transposed on their bills leading to incorrect bills. See below for a detailed list of findings.

1.6 Consumer Focus conducted a similar analysis in 2010 using consumer contacts data from the (then) Consumer Direct service from June to December 2010. The study focused on ToU tariffs. Consumer Focus counted 185 consumer contacts per month. This is more than the number of cases we counted which averaged around 114 unique contacts per month, or 120 including repeat contacts by the same people. We have been advised by Citizens Advice, which has operated the Citizens Advice Consumer Service since April 2012, that there has been an overall decline in contacts between 2010 and 2015 which was accompanied by rises in contacts to the Ombudsman Services: Energy. Hence, there is no easy way to compare total customer contacts.

1.7 The top issue in 2010 was – as it is now – "billing mistakes and problems". This was followed by "complexity" with consumers not understanding off-peak hours, meters or bills as well as "meter problems". Finally, customers sought information on switching or complained about switching difficulties or were concerned that a Time of Use tariff might not be suitable for their needs. While complaints have been recorded slightly differently, the type of complaints has been somewhat consistent. New issues have arisen, such as consumers complaining that they have to pay a standing charge for a gas meter they do not use.

Detailed findings

Bill issues

1.8 The main issue that electric heating and ToU customers seek advice on are their bills. Most contacts fall into the following three categories with each category

being represented relatively equally but with somewhat more customers falling into the first category:

- Billing mistakes: Customers complaining about specific bill issues for example meter readings that have not been taken correctly after a change of supplier or customers complaining that suppliers are ignoring their readings and are only billing them on estimated consumption. In many cases the complaints are caused by disagreements over the type of meter or tariff the customer has. In particular, very often bills are disputed due to confusion around whether a customer has a single-rate or ToU meter. This in turn is often caused by meters being registered incorrectly in suppliers' systems and/or the national database, in particular after meter changes (eg when customers had their meters changed from ToU to a single-rate meter and the systems continuing to show the households as having a ToU meter).

- High bills: Customers that have received very high bills – often several thousand pounds – and do not understand why their bills are so high. Many argue that they have not consumed much energy. Many suspect the meter to be faulty or simply do not understand their bill or meter well enough to check if there has been a fault.

- Back billing: Households complaining that they have not received bills for a very long time (in particular after moving into a property or changing meters) and then face high catch-up bills. Further, there are many instances where incorrect billing causes suppliers to issue catch-up bills. Often this back billing can cause financial difficulties as bills can be several thousand pounds due to the higher electricity usage of electric heating customers.

Switching and finding best deals

1.9 Many households contacted Citizens Advice Consumer Service with queries, concerns or particular problems around switching and finding the best deal. Contacts fall in the following three categories with the majority falling into the first category:

- Complex metering: Most queries are about finding the best deal for consumers with complex metering arrangements. This includes difficulties finding tariffs that are suitable for the customers' meter type (eg Economy 10, DTS meters, customers with two electricity meters or meters with more than two registers), or customers not understanding their meter type and thus being unable to compare tariffs. Further, some customers would like to switch and have tried to do so but have failed due to their meter type.

- Meter registration: Customers complain that a wrong registration of their meters, in particular on the national database, causes switching problems (in addition to billing mistakes as set out above). This is often the case after a change of meters, for example when a customer had an Economy 7 meter replaced by a single rate meter but the meter continues to be registered as an Economy 7 meter.

- Standard tariff with ToU meter: Customers in this category have a ToU meter, usually Economy 7, but use or would like to be on a standard tariff. In the majority of cases they are already on a standard tariff with their current supplier but are finding it difficult to switch to another supplier that supports such arrangements or to use switching sites that show which suppliers offer such arrangements. Some customers have decided to replace their ToU meter with a standard meter to make it simpler to switch.

Faulty meter

1.10 Faulty meters can cause high or erroneous bills that customers need to find the time and understanding to resolve. Bill issues caused by faulty meters registered here are not registered again under "bill issues". Overall, almost all contacts in this area could also be summarised under "bill issues" but have been set out separately due to the number of complaints in this area. The contacts can be summarised in the following categories with the majority of cases falling into the first category:

- Out of sync: Meters are out of sync and not switching correctly between day and night use. This can lead to higher bills for example when pre-programmed electric boilers or other appliances come on at off-peak times but electricity is registered as peak consumption.

- Consumption registration: Day and night usage is not registered correctly (eg due to incorrect wiring) or customers are charged the higher peak rate throughout as the off-peak register does not record consumption at all.

- Other faults: Other metering faults, such as the meter running too fast or heating is not working due to a fault with the meter.

- Checking faulty meters: Many customers suspect their meter is not working correctly (for example because their bills are high) and some complain that suppliers are charging them for checking the meter if it turns out that the meter is working correctly.

Suitability of Time of Use tariff

1.11 Customer contacts in this category cover queries or complaints about the suitability of ToU vs single-rate tariffs. Most of the contacts can be summarised in the following two categories:

- ToU tariff: Customers complaining that they are on a ToU tariff, or have been on a ToU tariff for many years in the past, despite the fact that they would be better off on a single-rate tariff for example because they do not have any storage heaters. In some cases, customers did not know that they are on a ToU tariff and feel now that they have been overcharged. Sometimes this comes to light when switching suppliers. Many contacts in this area are also from customers who would like to discuss more generally whether a ToU tariff or single-rate tariff is most suitable for their circumstances.

- ToU meter: Customers being confused as to whether they can have a single-rate tariff with a ToU meter or are being charged to have their ToU meter replaced to get a single-rate tariff. This is linked to the switching issue above but records cases where switching was not the main concern.

Gas bill despite no gas usage

1.12 Customers in this category received gas bills despite not using gas. The majority of cases are households that have received a gas bill requiring them to pay a standing charge for a gas meter they do not use or a meter they do not know they have. Some customers complain that they are being charged even though they are no longer using gas or are not currently using gas.

Advice on alternative heating systems

1.13 Households in this category approach Citizens Advice Consumer Service to either seek information on alternative heating sources or make complaints about specific issues they encounter in the process:

- Gas connection: Customers seeking advice on the process for getting a gas connection or are unhappy with the charges quoted by network companies to get a gas connection or the timeframe given to complete the work. For most of these contacts the current heating source is unknown so could be electric heating, oil, other heating sources or a new build house.

- Other heating sources: Customers seeking advice more generally on alternative heating sources and whether those would be cheaper. Some customers ask about the costs and benefits of upgrading their electric heating system, eg investing in new storage heaters. Some of these queries include questions about whether there is any support available to help with those costs.

Meter readings transposed

1.14 Complaints in this area are relatively homogenous. Many customers complain that their peak and off-peak readings have been transposed and thus causing incorrect bills. This in turn requires customers to sort this out or might lead to suppliers back billing customers. Whilst these are essentially "bill issues" we have recorded this separately here due to the relatively large number of complaints in this area.

Meter change issues

1.15 Contacts in this area are predominantly from customers complaining about the process of getting a meter changed, mostly from a ToU meter to a single-rate meter or from a ToU meter to a different ToU meter. There are also a range of issues that are caused by the meter changes (eg wrong registration of the new meter) but those have been recorded in other categories depending on the specific issues they cause, such as switching difficulties or incorrect bills. Most contacts fall in the following categories:

- Charges: Queries or dissatisfaction around suppliers charging to change meters

- Process: Complaints about the time it takes to get a meter replaced (in particular if the customer is without heating in that time), suppliers/engineers missing appointments, and other administrative difficulties

- Wrong meter: Engineers replacing meters with a wrong meters, in particular fitting a single-rate meter when it should have been an Economy 7 meter for example in the process of fitting a pre-payment meter.

- Involuntary meter change: A few instances of customers complaining that their meter was changed without warning or against their will partly due to the landlord/housing association organising this. Some contacts in this area are from customers wanting to know their rights to prevent suppliers changing their meter. However, there are very few cases in this category.

Complexity

1.16 Households in this category have difficulties understanding ToU arrangements. In the majority of cases, the complexity causes other issues, such as switching difficulties (eg with complex meters). These cases are recorded in the respective categories. Hence, this category cannot be compared with the categorisation that Citizens Advice Consumer Service used in their 2010 analysis. Complaints in this category are mainly on:

- Off-peak times: Households seeking to understand the peak and off-peak times of their tariff or meter. Some are complaining that they have not received accurate information from their suppliers as to these times.

- Complex metering and other complexity: There are many households that don't understand how their meter works or what kind of meter they have. This has often been recorded in other categories, such as "bill issues" (in particular customers not understanding why their bills are so high) or "switching" (where complex metering arrangements have caused switching issues). The contacts recorded here are cases where the complexity has a more direct impact on the customer for example not being able to control the heating system or not being able to submit meter readings or check if readings are recorded correctly on bills. There are also cases of customers not understanding energy bills generally or the tariff they are on and the rates they are being charged.

Miscellaneous

1.17 In this category there are a range of queries and complaints that could not easily be grouped into any of the other categories. However, a handful of complaints in this category refer to complaints about potential miss-selling of electric heating systems including direct-acting radiators and heat pumps with customers seeing their electricity bills go up as a consequence of installing these. However, there are very few cases that this applies to.

Affordability

1.18 Contacts in this category are mainly customers that contact Citizens Advice Consumer Service to discuss payment difficulties and customers complaining that they cannot afford their bills. Often this is linked to self-rationing, PPM self-disconnections or a feeling that their heating system is not keeping them warm enough.

1.19 Many customers are facing high electricity bills and are wondering why these bills are so high and whether the bill is correct and meter working. These cases have been recorded mainly under "bill issues". Hence, not recorded here are cases of very high bills where the primary reason for contact was to question those bills rather than discuss how to afford them.

Faulty heating

1.20 Complaints in this area centre around storage heaters having broken down or not working properly. Some complaints about the timeframe customers have been given by companies to sort this out as it often means going cold and being unable to heat water until the issue is resolved.

Additional information about consumer contacts

Heating Source

1.21 Whilst the aim of this paper is to consider the experiences of electric heating customers, the heating source is not usually recorded in Citizens Advice Consumer Service contacts data. As set out above, a key word search was therefore performed for words such as "Economy 7".

1.22 Table 2 shows that in the majority of cases the heating source is unknown. The vast majority of these contacts are customers with ToU meters, such as Economy 7, but where the heating source was not discussed for example because the conversation was about transposed meter readings not about the heating source as such.

1.23 This is followed by customer contacts where the heating source was clearly electric heating as well as contacts where it was clear that customers do not use mains gas but where it was not explicitly stated that the customer used electric heating. In the latter category, these are often contacts from customers complaining that they are being charged a standing charge for a gas meter despite not using gas (hence, in such cases we know that the customer is not using gas heating but we do not know whether the customer is using electric or other forms of non-gas heating).

1.24 A small proportion of customers used gas or heat pumps. In the case of gas these are usually contacts that used to be on electric heating but have switched to gas and this switch has caused issues (eg remaining on an Economy 7 tariff despite this potentially being unsuitable or a meter change that caused

switching and billing issues due to an incorrect registration on the national database).

1.25 Many of the contacts in the "unclear" and "non-gas" category are likely to come from customers with electric heating but since this was not explicitly discussed, we cannot be certain.

Table 2: Heating source by contacts

Heating Source	Contacts
Electric heating	154
Unclear	371
Non-gas	114
Gas	34
Heat pump	13

Consumer Type

1.26 The vast majority of contacts came from domestic consumers. A minority of 45 contacts came from business customers, usually very small enterprises. A majority of customers are from England, with 13% from Scotland and 4% from Wales. Of these, 42 contacts came from Greater London and 30 from Essex.

Table 3: Contacts by type of consumer

Consumer Type	Contacts	Per cent
Business	45	7%
Domestic	641	93%

Table 4: Contacts by country

Country	Contact	Per cent	Per cent excl. unknown
England	521	76%	84%
Scotland	79	12%	13%
Wales	23	3%	4%
Unknown	63	9%	N/A
Total	686	100%	100%

Table 5: Contacts by county or council area

County or Council Area	Country	Contacts
Greater London	England	42
Essex	England	30
West Midlands	England	24
Derbyshire	England	21
Greater Manchester	England	21
Kent	England	20

Lincolnshire	England	18
North Yorkshire	England	18
Devon	England	17
Cambridgeshire	England	16
Suffolk	England	15
West Yorkshire	England	15
Gloucestershire	England	14
Staffordshire	England	14
Norfolk	England	13
South Lanarkshire	Scotland	13
East Sussex	England	11
Hampshire	England	11
Lancashire	England	11
Leicestershire	England	11
Warwickshire	England	11
Hertfordshire	England	10
Nottinghamshire	England	10
South Yorkshire	England	10
Cheshire	England	9
Merseyside	England	8
Surrey	England	8
East Riding of Yorkshire	England	7
Highlands	Scotland	7
Oxfordshire	England	7
Glasgow City	Scotland	7
Cornwall	England	6
County Durham	England	6
Dorset	England	6
Dumfries and Galloway	Scotland	6
Fife	Scotland	6
Northamptonshire	England	6
Somerset	England	6
Wiltshire	England	6
Worcestershire	England	6
Buckinghamshire	England	5
Northumberland	England	5
Scottish Borders	Scotland	5
Shropshire	England	5
Tyne and Wear	England	5
Bedfordshire	England	4
Dundee	Scotland	4
Gwynedd	Wales	4
Herefordshire	England	4
City of Edinburgh	Scotland	4
North Lanarkshire	Scotland	4
Powys	Wales	4
West Sussex	England	4
Bristol	England	3
Clwyd	Wales	3
Mid Glamorgan	Wales	3
Moray	Scotland	3
Renfrewshire	Scotland	3
Argyll and Bute	Scotland	3

Anglesey	Wales	2
Berkshire	England	2
Cumbria	England	2
East Dunbartonshire	Scotland	2
Flintshire	Wales	2
North Ayrshire	Scotland	2
Orkney Islands	Scotland	2
East Renfrewshire	Scotland	2
Carmarthenshire	Wales	1
Ceredigion	Wales	1
Denbighshire	Wales	1
East Lothian	Scotland	1
Falkirk	Scotland	1
Isle of Wight	England	1
Midlothian	Scotland	1
Perth and Kinross	Scotland	1
South Glamorgan	Wales	1
South Ayrshire	Scotland	1
West Glamorgan	Wales	1
Unknown		81
Total		686

Appendix 3 – Further analysis of market engagement

Background and methodology

1.1 Since 2014, we have carried out an evaluation of our Retail Market Review (RMR) reforms.[11] We published the latest findings in September 2015.[12] We have used the latest survey to analyse some of the key questions for electric heating customers. This annex shows the results of this analysis.

1.2 The survey does not ask customers about their heating source so there is no simple way to analyse results for electric heating households. However, the survey asks whether customers have a gas and electricity supply or only an electricity supply (ie no gas supply). Customers that identify as not having a gas supply could be electric heating households but might also contain households that use other forms of non mains gas heating (eg oil). Further, customers that do have a gas supply might include some customers that use gas for cooking but electricity for heating purposes. Therefore, focussing on those that have no gas supply is not a perfect proxy for electric heating customers.

1.3 The survey also asks customers about the type of tariff that they are on, in particular whether they are on a standard tariff or a Time of Use (ToU) tariff (eg Economy 7). While most customers with electric heating systems (specifically those with electric storage heaters) use a ToU tariff, we know that on the other hand many customers on ToU tariffs do not use electric heating. Therefore, this is not an ideal proxy either.

1.4 To get a better proxy for electric heating customers, we have created a new category of customers that identify as both, not having a gas supply whilst being on a ToU tariff. We would expect these customers to be very likely to use some sort of electric heating system. Therefore, this is our proxy for electric heating customers.

1.5 Again, the proxy we have created is not ideal as it excludes those with peak electric heating and single-rate tariffs as well as those that do not know that they are on a ToU tariff. Therefore, the results need to be treated with caution and it is best to consider all the results we present below which includes disaggregated results for all those that identify as not having any gas supply as well as all customers that self-identify as being on a ToU tariff.

[11] Ofgem, 2014, "Domestic Retail Market Review – Evaluation framework and baseline results" (https://www.ofgem.gov.uk/publications-and-updates/domestic-retail-market-review-%E2%80%93-evaluation-framework-and-baseline-results). The 2014 survey was our baseline survey.
[12] Ofgem, 2015, "Domestic Retail Market Review evaluation survey: 2015 results" (https://www.ofgem.gov.uk/publications-and-updates/domestic-retail-market-review-evaluation-survey-2015-results)

Results

Market engagement

1.6 Table 1 indicates whether consumers have switched within the last 12 months. Given the importance of this question, we have analysed the results for both years the survey was conducted, ie 2014 and 2015 (all remaining findings are for 2015 only). In particular in 2014, the table suggests lower switching rates for non-gas customers (9%) and those that fall under our electric heating proxy (8%) compared to the overall average (14%). Differences between these groups are smaller in 2015 and not statistically significant.

1.7 The findings for ToU customers are less clear and could be somewhat biased due to the fact that these are customers that self-identify as ToU customers. Hence, this excludes customers that do not know that they are on a ToU tariff and might be less likely to engage in the market.[13] Further, given the low sample size, this difference is not statistically significant.

Table 1: Per cent of customers that have switched their electricity supplier in the last 12 months[14]

	All	*Electric heat proxy*	*Non electric heat proxy*	*No gas supply*	*Gas and electric supply*	*Time of Use Tariff*	*Single -rate Tariff*
Per cent (2014)	14%	8%	14%	9%	14%	13%	14%
Per cent (2015)	13%	10%	13%	9%	13%	15%	13%
Base (2014)[15]	6130	236	5894	599	5531	743	5025
Base (2015)	5923	223	5700	624	5299	655	4625

1.8 Table 2 indicates whether consumers have ever switched their electricity supplier. The results suggest significantly lower switching rates for our electric heat proxy (47%) as well as non-gas households (42%) compared to the average (56%). Differences could be due to a range of factors, incl socio-economic factors, tenure (eg housing associations organising swichting for tenants), and complexity of metering arrangements.

[13] This is supported by the fact that around 17% of domestic customers use ToU meters (ie fall into Profile Class 2 though might not all be on a ToU tariff) but only 11% of customers in this survey do (with an additional 10% not knowing what meter they have).
[14] The question asked was "In the last 12 months, have you switched your electricity supplier?" (q18)
[15] The base number presented in all tables is unweighted. The percentages are weighted.

Table 2: Per cent of customers that have ever switched their electricity supplier[16]

	All	*Electric heat proxy*	*Non electric heat proxy*	*No gas supply*	*Gas and electric supply*	*Time of Use Tariff*	*Single -rate Tariff*
Per cent	56%	47%	56%	42%	57%	55%	58%
Base	5934	223	5711	624	5299	655	4625

1.9 Table 3 shows consumers segmented by their market engagement. For this, we created an "index of engagement". The index scores consumers on their awareness and activity across a range of indicators, and places them in different engagement segments depending on their score. Typically those at the more engaged end of the spectrum regularly compare and switch tariffs or suppliers, and read routine communications in detail. Those that are less engaged tend to have glanced at a bill, for instance, but have not had any interactions with the energy market beyond that.

1.10 The table indicates customers without gas supply are significantly more likely to be "unplugged" compared to those with gas and electricity supply. This does not seem to be case for our electric heat proxy where customers appear to be less likely to be unplugged compared to other customers, though the difference is not statistically significant at a 95% confidence level. The somewhat contradictory results could again be either due to low sample size or because of a possible self-selection bias amongst ToU customers as explained above. Given the contradictory results and the fact there could be different explanations as to the reasons for this, it is difficult to draw clear conclusions from this table.

Table 3: Segmentation of consumers by their engagement

	All	*Electric heat proxy*	*Non electric heat proxy*	*No gas supply*	*Gas and electric supply*	*Time of Use Tariff*	*Single -rate Tariff*
Unplugged	20%	15%	20%	26%	19%	14%	19%
On stand by	36%	33%	37%	35%	37%	36%	37%
Tuned in	29%	33%	28%	25%	29%	31%	29%
Switched on	15%	18%	15%	14%	15%	19%	15%
Base	5934	223	5711	624	5299	655	4625

Customer experience

[16] This is based on the questions "In the last 12 months, have you switched your electricity supplier?" (q18) and for those that have not switched gas and electricity supplier in the last 12 months: "Have you ever switched your gas or electricity supplier?" The results include customers that have either switched both, their gas and electricity supplier or only their electricity supplier. It includes all households, including those that identify as currently having only a gas connection and no electricity connection (this applies to a very small number of 11 households which are included in the "all" and "non-electric heat proxy")

1.11 Table 4 shows customers perceived ease of comparing energy tariffs. Overall, results are fairly similar though customers that fall into our electric heat category are more likely to find it difficult which is however not statistically significant at a 95% confidence level (though it is at a 90% confidence level). Those that identify as being on a ToU tariff find it easier to compare tariffs which could again be due to a possible self-selection bias as suggested above.

Table 4: Ease of comparing different tariffs for electricity or gas[17]

	All	*Electric heat proxy*	*Non electric heat proxy*	*No gas supply*	*Gas and electric supply*	*Time of Use Tariff*	*Single -rate Tariff*
Easy	38%	38%	38%	35%	38%	43%	38%
Neither	16%	13%	16%	15%	16%	13%	16%
Difficult	36%	42%	36%	36%	36%	37%	38%
Don't know	9%	7%	9%	12%	9%	7%	8%
Base	5934	223	5711	624	5299	655	4625

1.12 Table 5 shows customers' perception about the range of tariffs available to them. Overall, differences are fairly small. Non-gas customers are more likely not to know an answer whilst ToU customers are slightly more likely to state that there is too little choice. However, across the board, the majority of customers think there is about the right amount of choice or too much choice.

Table 5: Choice of energy tariffs[18]

	All	*Electric heat proxy*	*Non electric heat proxy*	*No gas supply*	*Gas and electric supply*	*Time of Use Tariff*	*Single -rate Tariff*
Too much choice	30%	29%	30%	28%	30%	29%	31%
About the right amount of choice	44%	43%	44%	40%	44%	46%	44%
Too little choice	11%	14%	11%	12%	11%	14%	10%
Don't know	15%	14%	15%	21%	14%	12%	14%
Base	5934	223	5711	624	5299	655	4625

1.13 Table 6 shows whether customers trust their electricity supplier to charge a fair price. Overall, differences are again relatively small. Nevertheless, ToU customers as well as customers that fall into our electric heating category are more likely to distrust the pricing of their electricity supplier, which is statistically significant.

[17] The question was: "How easy or difficult do you believe it is to compare different tariffs for electricity or gas?" (q145). Category "easy" contains those that responded "fairly easy" or "very easy". "Neither" captures those that found it "neither easy nor difficult". The category "difficult" contains those that found it "fairly difficult" or "very difficult".

[18] The question was "Thinking about the range of different tariffs available to you from energy suppliers, would you say that you have…?" (q73)

Table 6: Whether consumers trust their electricity suppliers to charge a fair price[19]

	All	*Electric heat proxy*	*Non electric heat proxy*	*No gas supply*	*Gas and electric supply*	*Time of Use Tariff*	*Single -rate Tariff*
Trust	56%	55%	56%	56%	56%	57%	57%
Neither	21%	16%	22%	20%	22%	18%	22%
Distrust	20%	27%	20%	21%	20%	23%	19%
Don't know	2%	2%	2%	3%	2%	2%	2%
Base	5923	223	5700	624	5299	655	4625

Demographics

1.14 Table 7 indicates that compared to an overall average of 85% of customers in England, 9% in Scotland and 5% of customers in Wales, the likelihood of being on a ToU tariff is higher in England, whilst the likelihood of having no gas supply is higher in Scotland and even more so in Wales.

1.15 Interestingly, the likelihood of falling under our electric heating proxy is higher in Scotland but lower in Wales. This is in line with what we would expect as whilst there are more non-gas households in Wales many of those are not using electricity for heating purposes. On the other hand, most customers that identify as having no gas supply in Scotland seem to be using electric heating which is in line with our findings from the Scottish Household Survey.

Table 7: Customers by country

	All	*Electric heat proxy*	*Non electric heat proxy*	*No gas supply*	*Gas and electric supply*	*Time of Use Tariff*	*Single -rate Tariff*
England	85%	85%	85%	75%	87%	92%	85%
Scotland	9%	11%	9%	13%	9%	6%	9%
Wales	5%	3%	5%	11%	5%	2%	6%
Base	5934	223	5711	624	5299	655	4625

[19] The results combine two questions: "To what extent do you trust or distrust your electricity supplier to... Charge you a fair price for your electricity" (q64) and "To what extent do you trust or distrust your energy supplier to… Charge you a fair price for your electricity?" (q68). Category "trust" contains those that responded "completely trust" or "tend to trust". "Neither" captures those that found it "neither trust nor distrust". The category "distrust" contains those that responded "completely distrust" or "tend to distrust". As the question is directed at electricity suppliers, the response does not include the 11 households that identify as having only a gas and no electricity supply.

Appendix 4 - Glossary

D

Dynamically Teleswitched (DTS) meters

A teleswitched meter where the switching schedule of the heating load may vary from day to day, following the supplier's instructions, most often to take into account prevailing or forecast weather conditions.

Dynamically Teleswitched (DTS) tariffs

A type of tariff associated with an active DTS meter, where the supplier offering this product is the group code sponsor and controls heating load switching for this meter.

Direct-acting heating systems

Electric heating system that generates heat instantly when needed and uses electricity at that time, for example panel heaters.

E

Economy tariffs

Type of tariffs that have different unit rates for consumption during the day and the night and other off-peak periods. The number following Economy generally refers to the number of hours for which off-peak rates are available. For example, Economy 7 tariffs offer 7 hours of off-peak rate electricity at night. Economy 10 tariffs offer 10 hours of off-peak rate electricity usually in the morning, afternoon and evening. These require compatible Time of Use meters.

Ex-PES

The previous Public Electricity Supplier for one of the 14 electricity regions in England, Wales and Scotland. From privatisation in 1990 until 1998 the ex-PES had a monopoly of electricity supply and distribution in their designated areas. Local distribution is still a monopoly regulated by Ofgem, however, competition has been introduced in supply, and so these 14 suppliers (consolidated now into five: EDF Energy, E.ON UK, RWE npower, SSE and Scottish Power) are known as ex-PES suppliers.

M

Market share

The proportion of total customers (usually proxied by the number of meter points) within a market that are registered to a particular supplier.

S

Single-rate meters

A meter with only one register to record electricity consumption. Customers with such meters can only choose single-rate tariffs. The majority of customers in Great Britain have such meters. These meters are also known as "unrestricted meters".

Single-rate tariffs

A tariff with only one unit rate, irrespective of when energy is consumed throughout the day. The majority of customers are on such tariffs, including those with peak electric heating systems.

Smart meter

A meter that provides measured gas or electricity consumption data for multiple time periods, and is able to provide the relevant supplier with remote access to such data.

Standard Settlement Configuration (SSC)

It is a code that defines how a non-half hourly meter is configured for settlement. It defines how many registers the meter has and the times at which the registers record consumption.

Standing charge

In respect of the supply of electricity to a customer's premises, a monetary amount that is continuously chargeable to a customer on a daily basis, in addition to charges arising on the basis of a unit rate.

Storage heaters

Heating system that generates and stores heat, usually at night when electricity is cheaper, and releases heat during the day.

Switching

The process of changing gas or electricity supplier, or changing to a new tariff with the same supplier.

T

Tariff Comparison Rate (TCR)

A metric that would allow consumers to compare the price of energy tariffs on a like-for-like basis using a typical consumption figure.

Time of Use tariffs

A tariff where the unit rates vary by the time when the energy is consumed, for example through different unit rates for energy consumption during the day and during the night or, for the purposes of this report, where unit rates are different

for heating and other electricity usage. In particular households with storage heating tend to be on such a tariff. These tariffs require customers to have Time of Use meters.

Time of Use meters

For the purposes of this report these are all meters with more than one register to record electricity consumption, such as Economy 7 and DTS but excluding "smart meters". These are also known as "restricted meters", "multi-rate meters", or "variable-rates" meter.

U

Unit rate

The actual charge made in respect of each unit of electricity consumed.