




Off-gas consumers: methodology and data tables



About the Consumer Futures Unit

The Consumer Futures Unit (CFU), part of Citizens Advice Scotland, uses research and evidence to put consumers at the heart of policy and regulation in the energy, post and water sectors in Scotland. We work with government, regulators and business to put consumers first, designing policy and practice around their needs and aspirations.



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Annex 1: Main heating fuel tables for Scotland

- > In the following tables, the sample size for the % estimates in each row and column is given (in brackets) in place of the 100% total figure.
- > The fuel used for communal heating is not collected in the SHCS, but given its predominantly urban location and distance from the mains grid, over 94% of systems are estimated to be gas-fired.

Table A1.1: Region by main heating fuel, Scotland, 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Region	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Highland and Islands	82	6	48	13	58	3	210
		39.2	2.6	22.7	6.3	27.8	1.4	(1543)
		4.6	30.2	35.4	39.5	16.5	17.9	9.0
	North East Scotland	219	3	28	3	67	2	323
		68.0	1.1	8.7	1.0	20.7	0.5	(1044)
		12.4	18.7	20.9	10.0	18.9	9.5	13.9
	Mid Scotland and Fife	233	2	13	5	29	1	284
		82.2	0.7	4.7	1.7	10.4	0.4	(1171)
		13.1	10.8	9.8	14.4	8.3	6.6	12.2
	West Scotland	260	1	3	0	31	3	297
		87.5	0.2	1.0	0.1	10.3	0.9	(1546)
		14.6	3.0	2.1	1.0	8.6	16.8	12.7
	Glasgow	218	0	0	1	59	3	281
		77.7	0.0	0.0	0.3	20.9	1.2	(762)
		12.3	0.0	0.0	2.2	16.6	21.0	12.1
	Central Scotland	189	0	2	1	19	1	211
		89.4	0.1	0.9	0.3	8.9	0.3	(627)
		10.6	1.6	1.4	1.9	5.3	4.5	9.1
	Lothian	310	2	6	2	43	3	366
84.7		0.5	1.7	0.6	11.7	0.8	(1331)	
17.5		10.5	4.5	7.0	12.1	19.2	15.7	
South Scotland	262	5	35	8	48	1	359	
	73.1	1.3	9.8	2.2	13.4	0.2	(1370)	
	14.8	25.4	26.0	24.0	13.6	4.5	15.4	
Total hholds	1,773	18	135	33	354	16	2,330	
	76.1	0.8	5.8	1.4	15.2	0.7	100.0	
	(6707)	(74)	(777)	(189)	(1563)	(84)	(9394)	
	(Sample size)							

Year	Region	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2012-14	Highland and Islands	89	5	55	10	58	3	219
		40.5	2.1	25.0	4.5	26.3	1.5	(1420)
		4.8	21.7	39.2	38.4	17.9	11.6	9.1
	North East Scotland	231	3	30	3	60	8	334
		69.1	0.8	8.9	0.8	17.9	2.4	(872)
		12.4	13.2	21.2	10.9	18.5	27.1	13.9
	Mid Scotland and Fife	235	3	15	2	32	2	289
		81.2	1.2	5.2	0.6	11.2	0.6	(1023)
		12.6	16.2	10.8	7.0	10.1	5.7	12.0
	West Scotland	269	1	3	1	29	3	306
		87.9	0.2	1.0	0.5	9.4	1.1	(1282)
		14.4	2.6	2.1	5.4	8.9	11.2	12.7
	Glasgow	239	0	0	1	42	5	287
		83.4	0.0	0.0	0.3	14.6	1.6	(722)
12.8		0.0	0.0	3.1	13.0	16.2	11.9	
Central Scotland	193	1	2	1	19	2	217	
	88.9	0.4	0.9	0.3	8.8	0.7	(526)	
	10.4	4.1	1.4	2.2	5.9	5.4	9.0	
Lothian	330	3	2	2	40	5	382	
	86.5	0.7	0.6	0.5	10.4	1.4	(1156)	
	17.7	13.2	1.6	6.9	12.3	18.0	15.9	
South Scotland	278	6	33	7	44	1	369	
	75.2	1.7	9.0	1.8	11.8	0.4	(1193)	
	14.9	29.0	23.7	26.1	13.5	5.1	15.4	
Total hholds	1,863	21	140	26	323	29	2403	
	77.6	0.9	5.8	1.1	13.4	1.2	100.0	
	(5935)	(78)	(679)	(133)	(1255)	(114)	(8194)	
	(Sample size)							

Table A1.2: Location by main heating fuel, Scotland, 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Location	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Urban area	1,632	1	10	10	267	15	1,935
		84.3	0.1	0.5	0.5	13.8	0.8	(7330)
		92.0	5.3	7.7	29.9	75.3	96.4	83.1
	Rural area	142	17	124	23	87	1	395
		35.9	4.4	31.5	5.9	22.1	0.1	(2064)
		8.0	94.7	92.3	70.1	24.7	3.6	16.9
Total hholds	1,773	18	135	33	354	16	2,330	
(Sample size)	76.1	0.8	5.8	1.4	15.2	0.7	100.0	
	(6707)	(74)	(777)	(189)	(1563)	(84)	(9394)	
2012-14	Urban area	1701	2	15	5	236	26	1,987
		85.7	0.1	0.8	0.2	11.9	1.3	(6383)
		91.3	11.7	11.1	17.8	73.1	90.4	82.7
	Rural area	162	19	124	21	87	3	416
		38.9	4.5	29.8	5.1	20.9	0.7	(1811)
		8.7	88.3	88.9	82.2	26.9	9.6	17.3
Total hholds	1,863	21	140	26	323	29	2403	
(Sample size)	77.6	0.9	5.8	1.1	13.4	1.2	100.0	
	(5935)	(78)	(679)	(133)	(1255)	(114)	(8194)	

Table A1.3: Dwelling type by main heating fuel, Scotland, 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling type	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	End terrace	175 84.1 9.9	1 0.5 5.1	5 2.2 3.5	4 1.8 11.1	24 11.5 6.7	0 0.0 0.0	208 (859) 8.9
	Mid terrace	255 82.7 14.4	0 0.0 0.7	5 1.6 3.7	5 1.5 13.8	43 13.9 12.1	1 0.3 5.6	309 (1231) 13.2
	Semi-detached	396 80.6 22.3	3 0.6 17.2	28 5.7 20.7	9 1.9 28.4	53 10.8 15.1	1 0.3 8.4	491 (2097) 21.1
	Detached	329 68.8 18.5	13 2.8 71.4	96 20.0 71.0	10 2.1 30.5	30 6.2 8.4	0 0.1 2.1	478 (2270) 20.5
	Tenement	382 72.2 21.6	1 0.1 3.9	0 0.0 0.0	3 0.5 7.5	134 25.4 38.0	10 1.8 59.9	530 (1745) 22.7
	Converted flat	26 89.2 1.5	0 0.6 1.0	0 0.1 0.0	0 0.0 0.0	3 9.9 0.8	0 0.2 0.3	30 (123) 1.3
	Purpose-built low rise flat	203 83.4 11.5	0 0.1 0.7	1 0.6 1.1	3 1.2 8.7	33 13.7 9.5	2 1.0 15.2	244 (941) 10.5
	Purpose built high rise flat	6 15.1 0.3	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	33 81.6 9.4	1 3.3 8.4	41 (128) 1.8
	Total hholds	1,773 76.1 (6707)	18 0.8 (74)	135 5.8 (777)	33 1.4 (189)	354 15.2 (1563)	16 0.7 (84)	2,330 100.0 (9394)
	2012-14	End terrace	167 83.7 9.0	0 0.2 2.3	7 3.5 5.1	1 0.4 3.4	23 11.5 7.1	1 0.5 3.5
Mid terrace		251 83.4 13.5	1 0.4 6.0	6 2.0 4.3	3 1.1 12.8	38 12.4 11.6	2 0.6 6.1	301 (1048) 12.5
Semi-detached		402 83.7 21.6	6 1.2 27.0	17 3.5 12.0	10 2.0 37.2	44 9.2 13.7	2 0.4 6.9	481 (1772) 20.0
Detached		353 67.7 19.0	13 2.6 62.4	108 20.7 77.3	9 1.7 34.7	38 7.3 11.7	1 0.1 2.1	522 (2069) 21.7
Tenement		441 76.0 23.7	0 0.0 0.0	0 0.0 0.0	2 0.3 7.8	119 20.4 36.7	19 3.2 64.0	581 (1558) 24.2
Converted flat		29 82.2 1.6	0 0.0 0.0	1 1.9 0.5	0 0.5 0.8	5 14.4 1.6	0 0.9 1.2	36 (120) 1.5
Purpose-built low rise flat		212 87.8 11.4	0 0.2 2.3	1 0.5 0.9	1 0.4 3.4	26 10.7 8.0	1 0.5 4.1	241 (786) 10.0
Purpose built high rise flat		7 17.2 0.4	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	31 74.3 9.6	4 8.5 12.1	41 (114) 1.7
Total hholds		1,863 77.6 (5935)	21 0.9 (78)	140 5.8 (679)	26 1.1 (133)	323 13.4 (1255)	29 1.2 (114)	2,403 100.0 (8194)

Table A1.4: Tenure by main heating fuel, Scotland, 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Tenure	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Owned with mortgage	686	7	54	9	65	0	821
		83.6	0.9	6.6	1.0	7.9	0.0	(3263)
		38.7	40.2	40.0	25.6	18.3	1.6	35.2
	Owned outright	492	8	58	9	80	1	648
		75.9	1.3	8.9	1.4	12.3	0.1	(2778)
		27.7	46.0	42.8	28.0	22.5	6.0	27.8
	Privately rented	123	2	21	6	66	1	219
56.2		1.1	9.6	2.7	30.0	0.3	(831)	
7.0		12.5	15.7	18.1	18.6	3.9	9.4	
Rented from local authority	288	0	2	6	69	2	366	
	78.6	0.0	0.4	1.6	18.9	0.5	(1461)	
	16.2	0.7	1.2	17.2	19.6	11.6	15.7	
Rented from HA/RSL	185	0	0	4	74	12	276	
	67.0	0.0	0.2	1.3	27.0	4.5	(1061)	
	10.4	0.6	0.3	11.2	21.0	77.0	11.8	
Total hholds	1,773	18	135	33	354	16	2,330	
	76.1	0.8	5.8	1.4	15.2	0.7	100.0	
	(6707)	(74)	(777)	(189)	(1563)	(84)	(9394)	
2012-14	Owned with mortgage	619	9	43	5	63	1	741
		83.5	1.2	5.9	0.7	8.6	0.2	(2485)
		33.2	41.8	31.1	19.7	19.6	4.9	30.8
	Owned outright	551	9	76	11	79	1	726
		75.8	1.2	10.5	1.5	10.8	0.1	(2679)
		29.6	41.0	54.4	43.3	24.4	2.9	30.2
	Privately Rented ¹	233	3	19	4	67	3	330
70.5		1.0	5.9	1.3	20.2	1.0	(1014)	
12.5		15.9	13.9	16.5	20.7	11.8	13.8	
Rented from local authority	279	0	0	5	57	9	351	
	79.6	0.1	0.1	1.3	16.3	2.7	(1181)	
	15.0	1.3	0.3	17.4	17.7	32.1	14.6	
Rented from HA/RSL	182	0	0	1	57	14	254	
	71.5	0.0	0.2	0.3	22.4	5.6	(835)	
	9.7	0.0	0.3	3.1	17.6	48.2	10.6	
Total hholds	1,863	21	140	26	323	29	2,403	
	77.6	0.9	5.8	1.1	13.4	1.2	100.0	
	(5935)	(78)	(679)	(133)	(1255)	(114)	(8194)	

¹ Including rent free.

Table A1.5: Dwelling age by main heating fuel, Scotland, 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling age	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Pre 1919	299	8	58	12	63	1	440
		67.9	1.8	13.1	2.8	14.2	0.2	(1716)
		16.8	42.8	42.8	37.5	17.7	4.4	18.9
	1919 to 1944	280	1	12	4	20	0	318
		88.1	0.3	3.9	1.4	6.2	0.1	(1285)
		15.8	5.6	9.2	13.2	5.6	1.3	13.6
	1945 to 1964	437	1	14	9	71	3	536
		81.6	0.2	2.7	1.7	13.3	0.5	(2271)
		24.7	5.8	10.7	28.2	20.1	16.0	23.0
	1965 to 1982	397	3	19	6	115	6	545
		72.8	0.5	3.6	1.0	21.0	1.1	(2168)
		22.4	14.6	14.4	17.1	32.4	36.8	23.4
Post 1982	360	6	31	1	86	7	491	
	73.4	1.2	6.3	0.3	17.5	1.4	(1954)	
	20.3	31.2	22.9	3.9	24.2	41.5	21.1	
Total hholds	1,773	18	135	33	354	16	2,330	
	76.1	0.8	5.8	1.4	15.2	0.7	100.0	
	(6707)	(74)	(777)	(189)	(1563)	(84)	(9394)	
(Sample size)								
2012-14	Pre 1919	339	10	59	12	65	2	487
		69.7	2.0	12.0	2.6	13.4	0.3	(1551)
		18.2	45.8	41.9	48.0	20.1	5.6	20.3
	1919 to 1944	250	1	9	3	20	1	284
		88.0	0.5	3.1	1.0	7.0	0.4	(976)
		13.4	6.6	6.3	11.5	6.1	3.6	11.8
	1945 to 1964	439	3	13	7	60	3	525
		83.7	0.6	2.4	1.3	11.5	0.6	(1877)
		23.6	13.9	9.0	25.4	18.7	11.5	21.8
	1965 to 1982	410	2	27	3	92	7	541
		75.7	0.4	5.0	0.5	17.0	1.3	(1882)
		22.0	10.4	19.4	10.7	28.5	24.2	22.5
Post 1982	426	5	33	1	86	16	567	
	75.2	0.9	5.8	0.2	15.2	2.8	(1908)	
	22.9	23.3	23.4	4.4	26.6	55.0	23.6	
Total hholds	1,863	21	140	26	323	29	2,403	
	77.6	0.9	5.8	1.1	13.4	1.2	100.0	
	(5935)	(78)	(679)	(133)	(1255)	(114)	(8194)	
(Sample size)								

Table A1.6: Wall type by main heating fuel, Scotland, 2007-09 & 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Predominant wall type	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Masonry cavity	1,318	10	66	17	234	13	1,658
		79.5	0.6	4.0	1.0	14.1	0.8	(6731)
		74.3	52.4	48.9	50.7	66.1	81.8	71.2
	Masonry solid	353	8	63	13	70	1	508
		69.5	1.6	12.4	2.6	13.7	0.2	(1988)
		19.9	44.2	46.6	40.0	19.7	5.7	21.8
	Non-traditional (concrete, timber, metal)	80	0	4	2	39	1	127
		63.0	0.0	3.3	1.8	30.8	1.2	(538)
		4.5	0.0	3.1	6.8	11.1	9.2	5.5
	Mixed types (eg 50% solid & 50% cavity)	22	1	2	1	11	1	37
59.3		1.7	5.1	2.3	30.2	1.4	(137)	
1.2		3.4	1.4	2.5	3.1	3.2	1.6	
Total hholds	1,773	18	135	33	354	16	2,330	
(Sample size)	76.1	0.8	5.8	1.4	15.2	0.7	100.0	
	(6707)	(74)	(777)	(189)	(1563)	(84)	(9394)	
2012-14	Masonry cavity	1,375	9	72	11	209	23	1,700
		80.9	0.5	4.3	0.7	12.3	1.4	(5870)
		73.8	42.7	51.8	43.2	64.6	79.0	70.7
	Masonry solid	381	10	63	13	72	2	541
		70.5	1.8	11.6	2.4	13.3	0.3	(1736)
		20.5	46.8	45.0	50.8	22.2	5.9	22.5
	Non-traditional (concrete, timber, metal)	84	2	3	1	31	3	125
		67.1	1.3	2.6	1.0	25.2	2.7	(459)
		4.5	7.9	2.3	4.9	9.7	11.5	5.2
	Mixed types (eg 50% solid & 50% cavity)	24	1	1	0	11	1	38
62.8		1.5	3.0	0.7	29.2	2.8	(129)	
1.3		2.6	0.8	1.1	3.4	3.6	1.6	
Total hholds	1,863	21	140	26	323	29	2,403	
(Sample size)	77.6	0.9	5.8	1.1	13.4	1.2	100.0	
	(5935)	(78)	(679)	(133)	(1255)	(114)	(8194)	

Table A1.7: Energy EPC rating by main heating fuel, Scotland, 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	EPC ratings	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	B rating* (SAP 81 to 91)	8 86.0 0.5	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	1 14.0 8.3	10 (32) 0.4
	C rating (SAP 69 to 80)	425 95.6 24.0	0 0.0 0.0	0 0.0 0.1	0 0.0 0.0	9 1.9 2.4	11 2.4 67.0	444 (1621) 19.1
	D rating (SAP 55 to 68)	917 83.7 51.7	0 0.0 0.0	35 3.2 26.2	6 0.6 18.6	134 12.2 37.8	3 0.3 19.9	1,095 (4260) 47.0
	E rating (SAP 39 to 54)	364 61.2 20.5	1 0.2 7.7	68 11.5 50.6	11 1.8 32.8	150 25.2 42.4	0 0.1 2.5	595 (2613) 25.5
	F rating (SAP 21 to 38)	55 37.9 3.1	6 4.3 33.8	28 19.3 21.0	11 7.7 33.8	45 30.9 12.8	0 0.0 0.0	146 (692) 6.3
	G rating (SAP 1 to 20)	1 4.2 0.1	10 35.0 56.1	1 4.1 0.9	4 13.4 11.9	13 43.3 3.6	0 0.0 0.0	30 (128) 1.3
	Not known	3 30.5 0.2	0 4.4 2.5	2 16.2 1.2	1 9.5 2.9	4 35.8 1.0	0 3.5 2.2	10 (48) 0.4
	Total hholds	1,773	18	135	33	354	16	2,330
	(Sample size)	76.1 (6707)	0.8 (74)	5.8 (777)	1.4 (189)	15.2 (1563)	0.7 (84)	100.0 (9394)
	2012-14	A/B rating (SAP 81 plus)	22 72.8 1.2	0 0.0 0.0	2 5.3 1.1	0 0.0 0.0	4 12.8 1.2	3 9.1 9.4
C rating (SAP 69 to 80)		712 85.8 38.2	0 0.0 1.3	17 2.1 12.5	1 0.1 2.6	82 9.8 25.3	18 2.2 61.5	830 (2594) 34.5
D rating (SAP 55 to 68)		901 82.1 48.4	2 0.2 8.1	58 5.3 41.6	7 0.6 25.6	123 11.2 38.0	7 0.6 24.3	1,098 (3832) 45.7
E rating (SAP 39 to 54)		210 59.5 11.3	10 2.8 46.0	44 12.4 31.4	11 3.0 41.3	77 21.9 24.0	1 0.4 4.8	353 (1325) 14.7
F rating (SAP 21 to 38)		18 23.2 1.0	8 10.4 37.7	18 22.7 12.6	4 5.6 16.7	30 38.2 9.2	0 0.0 0.0	78 (305) 3.2
G rating (SAP 1 to 20)		0 1.9 0.0	1 10.3 6.9	1 8.0 0.8	4 25.3 13.9	8 54.5 2.4	0 0.0 0.0	14 (53) 0.6
Total hholds		1,863	21	140	26	323	29	2,403
(Sample size)		77.6 (5935)	0.9 (78)	5.8 (679)	1.1 (133)	13.4 (1255)	1.2 (114)	100.0 (8194)

Table A1.8: Housing standard by main heating fuel, Scotland, 2007-09 & 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Housing standard	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Passes SHQS	675	1	40	0	90	7	813
		83.0	0.1	4.9	0.0	11.1	0.9	(3179)
		38.0	4.6	29.4	1.2	25.5	44.5	34.9
	Fails SHQS	809	17	87	33	213	5	1,165
	on energy efficiency	69.5	1.5	7.5	2.8	18.3	0.4	(4876)
		45.6	93.8	64.9	98.8	60.2	32.5	50.0
	Fails SHQS on tolerable stnd (but not EE)	6	0	0	0	1	0	7
		87.7	0.0	0.4	0.0	11.9	0.0	(24)
		0.3	0.0	0.0	0.0	0.2	0.0	0.3
	Fails SHQS on other matters only	269	0	7	0	44	3	323
	83.3	0.0	2.3	0.0	13.6	0.8	(1231)	
	15.2	0.0	5.4	0.0	12.4	16.1	13.9	
Not known	14	0	0	0	6	1	22	
	65.0	1.3	2.1	0.0	26.6	5.0	(84)	
	0.8	1.6	0.3	0.0	1.7	6.9	0.9	
Total hholds	1,773	18	135	33	354	16	2,330	
	76.1	0.8	5.8	1.4	15.2	0.7	100.0	
(Sample size)	(6707)	(74)	(777)	(189)	(1563)	(84)	(9394)	
2012-14	Passes SHQS	990	6	60	0	103	20	1,179
		84.0	0.5	5.1	0.0	8.7	1.7	(3934)
		53.1	26.4	43.3	0.8	31.9	67.4	49.1
	Fails SHQS	594	16	70	26	197	4	907
	on energy efficiency	65.5	1.7	7.8	2.8	21.7	0.4	(3300)
		31.9	73.6	50.5	99.2	61.1	13.6	37.8
	Fails SHQS on tolerable stnd (not EE)	20	0	0	0	1	0	22
		94.7	0.0	0.2	0.0	5.2	0.0	(64)
		1.1	0.0	0.0	0.0	0.3	0.0	0.9
	Fails SHQS on other matters only	244	0	9	0	20	4	277
	88.1	0.0	3.1	0.0	7.2	1.6	(847)	
	13.1	0.0	6.2	0.0	6.2	15.0	11.5	
Not known	15	0	0	0	2	1	18	
	83.7	0.0	0.3	0.0	9.3	6.7	(49)	
	0.8	0.0	0.0	0.0	0.5	4.0	0.7	
Total hholds	1,863	21	140	26	323	29	2,403	
	77.6	0.9	5.8	1.1	13.4	1.2	100.0	
(Sample size)	(5935)	(78)	(679)	(133)	(1255)	(114)	(8194)	

Table A1.9: Secondary fuel by main heating fuel, Scotland, 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Secondary heating fuel	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Mains gas		0	7	0	28	0	35
			0.0	18.7	0.0	81.1	0.1	(139)
			0.0	4.9	0.0	8.0	0.3	1.5
	Solid fuel	94	7	79		29	0	209
		44.8	3.3	37.7		14.1	0.0	(1004)
		5.3	38.0	58.5		8.3	0.3	9.0
	Electric	299	2	23	9		3	336
		89.2	0.5	6.7	2.7		0.8	(1296)
		16.9	9.7	16.7	27.6		17.6	14.4
	Paraffin oil & bottled gas ¹	22	0	3	1	9	0	34
63.1		0.4	8.0	1.7	25.7	1.2	(125)	
1.2		0.7	2.0	1.7	2.5	2.6	1.5	
No other fuels ²	1,359	10	24	23	287	13	1,716	
	79.2	0.6	1.4	1.4	16.7	0.7	(6830)	
	76.6	51.6	17.9	70.7	81.1	79.2	73.6	
Total hholds	1,773	18	135	33	354	16	2,330	
	76.1	0.8	5.8	1.4	15.2	0.7	100.0	
	(6707)	(74)	(777)	(189)	(1563)	(84)	(9394)	
2012-14	Secondary Heating ³	27	2	8	2	14	1	53
		50.3	3.7	15.8	3.1	26.1	1.0	(219)
		1.4	9.2	6.0	6.5	4.3	1.9	2.2
	No other heating ⁴	1,837	19	131	24	309	29	2,349
		78.2	0.8	5.6	1.0	13.2	1.2	(7975)
		98.6	90.8	94.0	93.5	95.7	98.1	97.8
	Total hholds	1,863	21	140	26	323	29	2,403
77.6		0.9	5.8	1.1	13.4	1.2	100.0	
(5935)		(78)	(679)	(133)	(1255)	(114)	(8194)	

¹ Includes other unspecified fuels.² Includes 21k or 0.9% of homes where secondary fuel unknown in 2007-2009.³ In the 2012-2014 SHCS, only whether secondary heating was present was recorded and not the fuel used and the resulting figures are clearly not compatible with those for 2007-2009.⁴ Includes 14k or 0.6% of homes where secondary fuel unknown in 2012-2014.

Table A1.10: Full income by main heating fuel, Scotland, 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Less than £5,200	70 67.1 3.9	1 1.0 5.6	5 5.2 4.0	2 2.2 6.9	24 23.0 6.7	2 1.5 9.6	104 (391) 4.4
	£5,200 to £10,400	304 71.5 17.2	2 0.5 11.9	13 3.0 9.5	7 1.6 20.9	94 22.2 26.7	5 1.2 31.3	426 (1697) 18.3
	£10,400 to £15,600	338 73.7 19.1	2 0.5 12.7	15 3.2 11.1	9 1.9 26.1	90 19.6 25.4	5 1.1 30.2	459 (1872) 19.7
	£15,600 to £20,800	262 78.0 14.8	2 0.6 10.7	16 4.8 11.9	4 1.2 12.3	49 14.6 13.8	3 0.8 17.0	335 (1347) 14.4
	£20,800 to £26,000	199 77.9 11.2	1 0.5 6.6	17 6.5 12.3	4 1.5 11.2	34 13.4 9.7	1 0.3 4.5	256 (1016) 11.0
	£26,000 to £36,400	280 79.6 15.8	3 0.9 17.9	27 7.5 19.7	3 1.0 10.5	38 10.9 10.9	0 0.1 1.1	352 (1456) 15.1
	£36,400 or more	308 80.9 17.4	6 1.7 34.5	42 11.0 31.1	4 1.0 11.8	20 5.2 5.6	1 0.3 6.4	381 (1552) 16.4
	Not known	12 69.9 0.7	0 0.0 0.0	1 3.5 0.4	0 0.2 0.1	4 26.4 1.3	0 0.0 0.0	17 (63) 0.7
	Total hholds	1,773	18	135	33	354	16	2,330
	(Sample size)	76.1 (6707)	0.8 (74)	5.8 (777)	1.4 (189)	15.2 (1563)	0.7 (84)	100.0 (9394)
2012-14	Less than £10,400	247 73.4 13.3	2 0.6 8.7	13 3.7 9.0	4 1.3 16.4	65 19.4 20.3	6 1.6 18.9	337 (1129) 14.0
	£10,400 to £15,600	345 75.4 18.5	2 0.4 8.5	13 2.7 9.0	3 0.6 11.1	86 18.7 26.5	10 2.2 34.2	458 (1529) 19.1
	£15,600 to £20,800	289 76.3 15.5	3 0.8 13.4	17 4.5 12.2	3 0.9 13.3	63 16.5 19.4	4 1.1 14.3	379 (1308) 15.8
	£20,800 to £26,000	223 77.2 12.0	4 1.4 19.1	18 6.3 13.1	4 1.5 16.9	34 11.9 10.6	5 1.7 16.6	289 (999) 12.0
	£26,000 to £36,000	322 78.5 17.3	3 0.9 16.3	35 8.4 24.8	6 1.6 24.9	41 10.0 12.7	2 0.6 8.2	410 (1429) 17.1
	£36,000 or more	395 82.7 21.2	7 1.5 33.1	44 9.1 31.2	4 0.9 17.2	26 5.5 8.2	1 0.3 4.4	478 (1650) 19.9
	Not known	41 80.8 2.2	0 0.4 0.9	1 2.0 0.7	0 0.1 0.2	7 14.7 2.3	1 2.0 3.4	51 (150) 2.1
	Total hholds	1,863	21	140	26	323	29	2,403
	(Sample size)	77.6 (5935)	0.9 (78)	5.8 (679)	1.1 (133)	13.4 (1255)	1.2 (114)	100.0 (8194)

Table A1.11: 10% fuel poverty by main heating fuel, Scotland, 2007-09 & 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income fuel poverty	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Not in fuel poverty	1,324 80.4 74.7	8 0.5 42.6	74 4.5 55.0	13 0.8 40.0	214 13.0 60.6	13 0.8 80.1	1,647 (6528) 70.7
	In moderate fuel poverty (10 to 20%)	309 68.5 17.4	4 0.9 21.9	33 7.3 24.5	12 2.6 35.3	91 20.1 25.6	2 0.5 15.1	451 (1830) 19.3
	In severe fuel poverty (> 20%)	118 60.3 6.6	6 3.0 31.7	24 12.5 18.0	7 3.7 21.7	40 20.3 11.2	0 0.2 2.6	195 (887) 8.4
	Total in fuel poverty	427 66.0 24.1	10 1.5 53.6	57 8.9 42.6	19 2.9 57.0	130 20.2 36.8	3 0.4 17.7	646 (2717) 27.7
	Not known	23 61.1 1.3	1 1.9 3.8	3 8.7 2.4	1 2.7 3.0	9 24.6 2.6	0 1.0 2.2	37 (149) 1.6
	Total hholds	1,773 76.1 (6707)	18 0.8 (74)	135 5.8 (777)	33 1.4 (189)	354 15.2 (1563)	16 0.7 (84)	2,330 100.0 (9394)
	(Sample size)							
2012-14	Not in fuel poverty	1,305 83.7 70.1	6 0.4 28.6	70 4.5 49.5	10 0.6 37.3	147 9.4 45.5	22 1.4 74.8	1,560 (5025) 64.9
	In moderate fuel poverty (10 to 20%)	432 70.3 23.2	9 1.4 40.6	43 7.1 30.8	11 1.8 40.6	114 18.6 35.5	5 0.9 18.5	614 (2131) 25.6
	In severe fuel poverty (> 20%)	126 54.9 6.7	7 2.8 30.7	28 12.2 19.7	6 2.6 22.1	61 26.7 19.0	2 0.8 6.6	229 (852) 9.5
	Total in fuel poverty	557 66.1 29.9	15 1.8 71.4	71 8.5 50.5	17 2.0 62.7	175 20.8 54.5	7 0.9 25.2	843 (2983) 35.1
	Total hholds¹	1,863 77.5 (5797)	21 0.9 (76)	141 5.9 (670)	27 1.1 (131)	322 13.4 (1223)	29 1.2 (111)	2,403 100.0 (8008)
	(Sample size)							

¹ In the 2012-2014 SHCS, the fuel poverty sample is slightly smaller and uses a different grossing from all the other variables, resulting in marginally different totals for some of the main non-gas heating fuels.

Table A1.12: Household type by main heating fuel, Scotland, 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Household type	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2007-09	Childless couple < 60 years	283	6	21	6	55	1	373
		75.9	1.5	5.8	1.7	14.8	0.3	(1421)
		16.0	30.3	15.9	19.0	15.6	6.8	16.0
	Childless couple 60 years plus	329	4	32	7	49	2	423
		77.7	1.0	7.5	1.7	11.6	0.4	(1780)
		18.5	23.6	23.4	22.0	13.9	11.7	18.2
	Couple with dependent children	388	3	40	4	33	0	468
		82.9	0.7	8.5	0.8	7.1	0.0	(1950)
		21.9	16.9	29.6	11.6	9.4	1.5	20.1
	Lone parent dependent children	97	0	1	1	22	1	122
		79.4	0.0	1.0	0.9	18.3	0.4	(481)
		5.5	0.0	0.9	3.2	6.3	3.4	5.3
	Other multi-person households	184	2	11	4	19	1	222
		82.8	1.1	5.1	1.8	8.5	0.6	(914)
	10.4	12.7	8.4	12.3	5.3	8.7	9.5	
One person < 60 years	226	1	12	5	82	1	327	
	69.2	0.3	3.6	1.5	25.2	0.2	(1241)	
	12.8	4.9	8.7	14.8	23.3	5.0	14.0	
One person 60 years plus	267	2	18	6	93	10	395	
	67.6	0.5	4.4	1.5	23.4	2.6	(1607)	
	15.0	11.7	13.0	17.3	26.2	62.9	16.9	
Total hholds	1,773	18	135	33	354	16	2,330	
	76.1	0.8	5.8	1.4	15.2	0.7	100.0	
(Sample size)	(6707)	(74)	(777)	(189)	(1563)	(84)	(9394)	
2012-14	Childless couple < 60 years	291	4	21	4	38	1	359
		81.2	1.0	5.7	1.1	10.6	0.4	(1145)
		15.6	16.4	14.7	15.2	11.8	4.7	14.9
	Childless couple 60 years plus	330	6	46	7	47	2	438
		75.3	1.4	10.5	1.5	10.7	0.5	(1584)
		17.7	28.5	33.0	25.6	14.5	8.2	18.2
	Couple with dependent children	383	6	30	5	32	1	456
		84.0	1.2	6.5	1.0	7.0	0.3	(1598)
		20.6	26.2	21.3	18.4	9.8	4.8	19.0
	Lone parent dependent children	104	0	3	1	20	2	130
		80.4	0.0	2.0	0.6	15.6	1.4	(459)
		5.6	0.0	1.9	2.9	6.2	6.2	5.4
	Other multi-person households	171	2	13	2	15	1	204
		84.0	0.8	6.2	1.1	7.3	0.6	(702)
	9.2	7.3	9.0	9.0	4.6	4.0	8.5	
One person < 60 years	288	2	9	5	85	3	392	
	73.5	0.6	2.3	1.2	21.7	0.8	(1224)	
	15.5	10.5	6.6	17.9	26.3	10.3	16.3	
One person 60 years plus	295	2	19	3	86	18	424	
	69.7	0.6	4.4	0.7	20.3	4.3	(1482)	
	15.9	11.2	13.5	11.1	26.7	61.8	17.6	
Total hholds	1,863	21	140	26	323	29	2,403	
	77.6	0.9	5.8	1.1	13.4	1.2	100.0	
(Sample size)	(5935)	(78)	(679)	(133)	(1255)	(114)	(8194)	

Annex 2: Main heating fuel tables for Wales

In the following tables, the sample size for the % estimates in each row and column is given (in brackets) in place of the 100% total figure.

Table A2.1: Location by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Location	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Urban area > 10,000 pop	733	1	6	8	23	4	775
		94.6	0.2	0.8	1.0	3.0	0.5	(1667)
		73.6	5.0	4.3	21.3	36.6	69.8	61.1
	Town and fringe	186	2	7	5	13	2	214
		86.9	0.9	3.5	2.2	5.9	0.7	(470)
		18.7	7.4	5.2	12.6	19.9	30.2	16.9
	Village	61	14	69	13	21	0	178
		34.2	7.9	38.8	7.3	11.8	0.0	(382)
		6.1	56.2	48.1	35.0	33.1	0.0	14.0
	Hamlet or Isolated	16	8	61	12	6	0	102
15.6		7.6	59.2	11.3	6.3	0.0	(222)	
1.6		31.3	42.3	31.1	10.3	0.0	8.1	
	Total hholds	995	25	143	37	63	5	1,268
		78.5	2.0	11.3	2.9	5.0	0.4	100.0
	(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)
2011	Urban area > 10,000 pop	797	3	10	9	52	3	874
		91.2	0.4	1.2	1.0	5.9	0.3	(1667)
		76.8	16.8	8.5	24.8	62.9	66.5	67.1
	Town and fringe	171	4	10	4	13	1	204
		83.8	2.2	5.1	1.9	6.2	0.7	(470)
		16.4	23.6	8.5	11.0	15.4	33.5	15.6
	Village	51	5	57	11	12	0	136
		37.7	3.5	41.5	8.4	8.9	0.0	(382)
		5.0	25.1	46.0	32.4	14.7	0.0	10.5
	Hamlet or Isolated	19	7	45	11	6	0	88
21.7		7.4	51.6	12.7	6.6	0.0	(222)	
1.8		34.4	36.9	31.7	7.1	0.0	6.8	
	Total hholds	1,038	19	123	35	83	4	1,303
		79.7	1.5	9.5	2.7	6.3	0.3	100.0
	(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)

Table A2.2: Economic 'fora' area by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Area	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	North Wales	183	9	35	8	18	0	254
	excl. South	72.0	3.7	13.9	3.0	7.3	0.1	(571)
	Gwynedd	18.4	37.6	24.6	20.5	29.3	6.7	20.0
	Mid Wales	41	6	48	10	19	0	123
	incl. South	32.9	5.0	38.8	8.1	15.2	0.0	(289)
	Gwynedd	4.1	25.0	33.5	26.8	29.6	0.0	9.7
	South-West	276	9	48	9	16	1	358
	Wales	77.0	2.4	13.3	2.4	4.4	0.4	(646)
		27.7	34.5	33.4	23.6	25.0	27.7	28.2
	South-East	496	1	12	11	10	3	533
Wales	93.0	0.1	2.3	2.0	1.9	0.6	(1235)	
	49.8	2.9	8.5	29.0	16.1	65.6	42.0	
	Total hholds	995	25	143	37	63	5	1,268
		78.5	2.0	11.3	2.9	5.0	0.4	100.0
	(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)
2011	North Wales	208	4	38	10	17	0	277
	excl. South	75.1	1.4	13.5	3.6	6.2	0.1	(571)
	Gwynedd	20.1	20.8	30.5	28.6	20.9	7.1	21.3
	Mid Wales	44	8	33	8	15	0	108
	incl. South	41.1	7.6	30.6	7.0	13.6	0.0	(289)
	Gwynedd	4.3	43.4	26.9	21.6	17.8	0.0	8.3
	South-West	225	7	42	8	15	1	296
	Wales	75.9	2.2	14.1	2.6	4.9	0.4	(646)
		21.7	34.3	33.8	21.9	17.6	24.4	22.7
	South-East	561	0	11	10	36	3	621
Wales	90.3	0.0	1.8	1.6	5.8	0.5	(1235)	
	54.0	1.5	8.8	27.9	43.7	68.5	47.7	
	Total hholds	1,038	19	123	35	83	4	1,303
		79.7	1.5	9.5	2.7	6.3	0.3	100.0
	(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)

Table A2.3: Dwelling type by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling type	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)	
2008	End terrace	116 87.5 11.6	3 2.2 11.9	3 2.0 1.9	6 4.6 16.5	5 3.6 7.5	0 0.0 0.0	132 (292) 10.4	
	Mid terrace	243 90.8 24.5	1 0.5 5.5	5 1.9 3.6	5 2.0 14.3	12 4.4 18.5	1 0.4 21.6	268 (579) 21.1	
	Semi-detached	304 86.1 30.6	4 1.1 15.5	27 7.7 19.1	9 2.5 23.9	9 2.6 14.3	0 0.0 0.0	353 (754) 27.9	
	Detached	164 62.5 16.5	8 3.2 33.7	71 26.9 49.3	13 4.8 33.8	7 2.5 10.5	0 0.0 0.0	262 (519) 20.6	
	Bungalow	87 59.0 8.7	7 4.8 28.5	36 24.8 25.5	2 1.7 6.6	14 9.7 22.6	0 0.0 0.0	147 (331) 11.6	
	Converted flat or with non-residential	17 76.2 1.7	1 5.7 5.0	0 0.0 0.0	1 4.4 2.6	3 13.8 4.8	0 0.0 0.0	22 (40) 1.7	
	Purpose-built low rise flat	61 77.8 6.2	0 0.0 0.0	1 1.2 0.7	1 1.1 2.3	12 14.8 18.6	4 5.0 78.4	79 (214) 6.2	
	Purpose built high rise flat	3 63.4 0.3	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	2 36.6 3.1	0 0.0 0.0	5 (12) 0.4	
	Total hholds	995 78.5 (2140)	25 2.0 (50)	143 11.3 (308)	37 2.9 (85)	63 5.0 (142)	5 0.4 (16)	1,268 100.0 (2741)	
	2011	End terrace	101 91.0 9.7	0 0.4 2.5	2 1.7 1.5	4 4.0 12.6	3 3.0 4.0	0 0.0 0.0	111 (292) 8.5
		Mid terrace	221 90.5 21.3	1 0.3 3.7	5 1.9 3.7	5 1.9 13.3	12 5.1 15.1	1 0.3 15.9	244 (579) 18.7
		Semi-detached	330 87.4 31.8	3 0.9 17.1	26 6.9 21.1	10 2.7 29.4	8 2.1 9.4	0 0.0 0.0	377 (754) 29.0
		Detached	177 67.7 17.0	8 2.9 39.9	58 22.3 47.2	12 4.6 34.0	7 2.6 8.1	0 0.0 0.0	261 (519) 20.0
Bungalow		94 65.0 9.1	5 3.4 25.8	32 22.0 25.8	3 2.0 8.2	11 7.6 13.3	0 0.0 0.0	145 (331) 11.1	
Converted flat or with non-residential		34 77.5 3.2	2 4.8 11.0	0 0.0 0.0	0 1.1 1.3	7 16.6 8.7	0 0.0 0.0	43 (40) 3.3	
Purpose-built low rise flat		76 73.8 7.3	0 0.0 0.0	1 0.8 0.6	0 0.4 1.3	22 21.4 26.6	4 3.6 84.1	103 (214) 7.9	
Purpose built high rise flat		6 31.9 0.5	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	12 68.1 14.7	0 0.0 0.0	18 (12) 1.4	
Total hholds		1,038 79.7 (2140)	19 1.5 (50)	123 9.5 (308)	35 2.7 (85)	83 6.3 (142)	4 0.3 (16)	1,303 100.0 (2741)	

Table A2.4: Dwelling age by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling age	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Pre 1850	16	4	27	9	1	0	57
		28.5	6.8	47.1	16.0	1.7	0.0	(114)
		1.6	15.4	18.7	24.5	1.5	0.0	4.5
	1850 to 1899	105	4	27	10	6	0	151
		69.1	2.7	17.7	6.7	3.9	0.0	(305)
		10.5	16.3	18.7	27.2	9.3	0.0	11.9
	1900 to 1918	149	3	12	5	6	0	175
		85.2	1.8	6.9	2.7	3.4	0.0	(345)
		15.0	12.5	8.4	12.7	9.5	0.0	13.8
	1919 to 1944	118	2	11	4	4	0	139
		84.9	1.4	7.8	2.7	3.2	0.0	(279)
		11.8	8.0	7.6	10.2	7.0	0.0	10.9
	1945 to 1964	231	3	18	7	10	0	269
		86.0	1.2	6.6	2.5	3.7	0.0	(618)
		23.2	13.1	12.4	17.9	16.0	0.0	21.2
	1965 to 1974	148	1	19	2	11	1	181
		81.7	0.3	10.5	0.9	6.2	0.5	(421)
		14.8	2.0	13.2	4.3	17.8	16.8	14.3
	1975 to 1980	58	2	7	1	3	2	73
79.7		2.1	9.6	1.2	4.2	3.1	(179)	
5.8		6.1	4.9	2.4	4.9	45.1	5.7	
1981 to 1990	71	2	7	0	12	2	94	
	75.6	2.2	7.8	0.3	12.4	1.7	(209)	
	7.2	8.2	5.1	0.9	18.6	30.9	7.4	
Post 1990	99	5	16	0	10	0	130	
	76.5	3.5	12.2	0.0	7.5	0.3	(271)	
	10.0	18.3	11.1	0.0	15.4	7.1	10.2	
Total hholds	995	25	143	37	63	5	1,268	
	78.5	2.0	11.3	2.9	5.0	0.4	100.0	
	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)	
	(Sample size)							

Year	Dwelling age	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2011	Pre 1850	17	2	22	7	1	0	49
		34.4	4.9	44.1	14.9	1.7	0.0	(114)
		1.6	12.8	17.7	20.9	1.0	0.0	3.8
	1850 to 1899	109	2	23	8	9	0	150
		72.2	1.3	15.1	5.3	6.0	0.0	(305)
		10.5	10.3	18.4	22.8	10.9	0.0	11.5
	1900 to 1918	148	4	12	7	6	0	176
		83.6	2.4	7.0	3.8	3.3	0.0	(345)
		14.2	22.3	10.0	18.8	7.0	0.0	13.5
	1919 to 1944	128	3	10	4	4	0	149
		86.1	2.3	6.4	2.5	2.7	0.0	(279)
		12.4	18.4	7.7	10.5	4.9	0.0	11.4
	1945 to 1964	237	2	17	7	9	0	271
87.2		0.6	6.2	2.7	3.3	0.0	(618)	
22.8		8.2	13.7	20.6	11.0	0.0	20.8	
1965 to 1974	156	0	17	1	9	1	184	
	84.4	0.1	9.2	0.8	5.1	0.4	(421)	
	15.0	1.0	13.7	4.2	11.4	16.2	14.2	
1975 to 1980	56	1	5	1	5	2	69	
	81.3	1.0	7.6	0.9	6.8	2.5	(179)	
	5.4	3.8	4.3	1.7	5.7	38.9	5.3	
1981 to 1990	79	0	6	0	14	1	102	
	78.1	0.4	6.1	0.2	13.8	1.4	(209)	
	7.6	2.1	5.0	0.6	17.0	32.5	7.8	
Post 1990	109	4	12	0	26	1	151	
	72.3	2.7	7.7	0.0	17.0	0.4	(271)	
	10.5	21.2	9.4	0.0	30.9	12.5	11.6	
	Total hholds	1,038	19	123	35	83	4	1,303
		79.7	1.5	9.5	2.7	6.3	0.3	100.0
	(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)

Table A2.5: Predominant wall type by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Wall type	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Masonry cavity	670	11	79	13	45	4	823
		81.4	1.4	9.6	1.6	5.5	0.5	(1825)
		67.3	46.1	55.1	36.2	71.4	85.8	64.9
	Masonry solid	257	9	50	20	13	0	349
		73.6	2.7	14.3	5.6	3.8	0.0	(690)
		25.8	37.9	34.9	52.6	21.2	0.0	27.5
Non-traditional (concrete, timber, metal)	41	2	3	0	5	1	53	
	78.4	4.3	6.5	0.6	8.8	1.4	(132)	
	4.2	9.0	2.4	0.8	7.4	14.2	4.2	
Mixed types (eg 50% solid & 50% cavity)	27	2	11	4	0	0	44	
	62.3	4.0	25.0	8.8	0.0	0.0	(94)	
	2.7	7.0	7.6	10.3	0.0	0.0	3.5	
Total hholds	995	25	143	37	63	5	1,268	
	78.5	2.0	11.3	2.9	5.0	0.4	100.0	
	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)	
2011	Masonry cavity	704	10	67	14	61	4	859
		81.9	1.1	7.8	1.6	7.1	0.4	(1825)
		67.8	51.3	54.6	39.1	73.4	86.4	65.9
	Masonry solid	269	5	42	18	17	0	350
		76.7	1.5	11.9	5.1	4.8	0.0	(690)
		25.9	27.8	33.8	50.3	20.3	0.0	26.9
Non-traditional (concrete, timber, metal)	39	3	2	0	5	1	51	
	77.2	5.8	4.5	1.0	10.3	1.2	(132)	
	3.8	15.6	1.8	1.4	6.3	13.6	3.9	
Mixed types (eg 50% solid & 50% cavity)	27	1	12	3	0	0	43	
	62.5	2.3	27.6	7.5	0.0	0.0	(94)	
	2.6	5.3	9.7	9.2	0.0	0.0	3.3	
Total hholds	1,038	19	123	35	83	4	1,303	
	79.7	1.5	9.5	2.7	6.3	0.3	100.0	
	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)	

Table A2.6: Energy EPC rating by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	EPC ratings	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)	
2008	B rating* (SAP 81 to 91)	3 100.0 0.3	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	3 (7) 0.2	
	C rating (SAP 69 to 80)	103 93.0 10.3	0 0.0 0.0	1 1.3 1.0	0 0.0 0.0	3 2.3 4.0	4 3.4 73.8	110 (267) 8.7	
	D rating (SAP 55 to 68)	417 93.8 41.9	0 0.0 0.0	16 3.7 11.4	0 0.1 1.1	9 2.1 15.0	1 0.3 26.2	445 (983) 35.0	
	E rating (SAP 39 to 54)	398 84.5 40.0	2 0.4 6.9	55 11.6 38.1	4 0.9 11.9	12 2.6 19.6	0 0.0 0.0	471 (976) 37.1	
	F rating (SAP 21 to 38)	71 41.4 7.1	7 4.2 28.9	60 35.0 41.8	14 8.1 37.5	19 11.4 30.8	0 0.0 0.0	171 (363) 13.5	
	G rating (SAP 1 to 20)	4 6.4 0.4	16 23.2 64.2	11 15.9 7.7	18 26.6 49.5	19 27.9 30.5	0 0.0 0.0	69 (145) 5.4	
	Total hholds	995 78.5 (2140)	25 2.0 (50)	143 11.3 (308)	37 2.9 (85)	63 5.0 (142)	5 0.4 (16)	1,268 100.0 (2741)	
	2011	A/B rating (SAP 81 plus)							
C rating (SAP 69 to 80)									
D rating (SAP 55 to 68)		No SAP/EPC data available for Wales after 2008							
E rating (SAP 39 to 54)									
F rating (SAP 21 to 38)									
G rating (SAP 1 to 20)									
Total hholds		1,038 79.7 (2140)	19 1.5 (50)	123 9.5 (308)	35 2.7 (85)	83 6.3 (142)	4 0.3 (16)	1,303 100.0 (2741)	

Table A2.7: Housing Quality Standard by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Homes standard	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	WHQS	54	0	3	0	2	1	61
	passes standard	89.0	0.0	4.9	0.0	4.0	2.1	(135)
		5.4	0.0	2.1	0.0	3.8	24.7	4.8
	Fails WHQS	788	24	138	36	57	1	1,044
	EE criteria on heating	75.5	2.3	13.2	3.5	5.4	0.1	(2222)
		79.2	97.7	96.4	97.5	90.2	11.9	82.3
	Fails WHQS	114	0	1	0	2	3	120
	EE criteria on other matters	95.2	0.0	0.5	0.0	1.6	2.7	(291)
		11.4	0.0	0.4	0.0	3.0	63.4	9.4
	Category I hazard on excess cold	0	1	1	1	0	0	3
		0.0	21.6	32.4	33.8	12.2	0.0	(7)
		0.0	2.3	0.6	2.5	0.5	0.0	0.2
Fails WHQS on other matters alone	39	0	1	0	2	0	41	
	94.8	0.0	1.6	0.0	3.6	0.0	(86)	
	4.0	0.0	0.5	0.0	2.4	0.0	3.3	
Total hholds	995	25	143	37	63	5	1,268	
	78.5	2.0	11.3	2.9	5.0	0.4	100.0	
(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)	
2011	WHQS passes standard							
	Fails WHQS EE criteria on heating							
	Fails WHQS EE criteria on other matters	No housing quality data available for Wales after 2008						
	Category I hazard on excess cold							
	Fails WHQS on other matters alone							
	Total hholds	1,038	19	123	35	83	4	1,303
		79.7	1.5	9.5	2.7	6.3	0.3	100.0
(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)	

Table A2.8: Secondary heating fuel by main heating fuel, Wales, 2008 and 2011¹

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Secondary heating fuel	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Mains gas	-	0	7	3	6	0	17
		-	0.0	43.2	19.9	36.9	0.0	(33)
		-	0.0	5.1	9.1	9.6	0.0	1.3
	Solid fuel	60	9	65	-	10	0	143
		41.6	6.3	45.2	-	6.9	0.0	(300)
		6.0	36.0	45.1	-	15.2	0.0	11.3
	Electric	163	5	39	5	-	0	212
		76.8	2.2	18.4	2.6	-	0.1	(463)
		16.3	19.0	27.3	14.6	-	5.0	16.7
	Paraffin oil & bottled gas ²	0	1	10	2	3	0	16
2.5		5.4	63.4	11.0	17.8	0.0	(34)	
0.0		3.4	6.9	4.6	4.2	0.0	1.2	
No other Fuels ³	773	10	22	27	44	5	881	
	87.7	1.2	2.5	3.0	5.0	0.5	(1911)	
	77.6	41.6	15.5	71.6	69.9	95.0	69.5	
Total hholds	995	25	143	37	63	5	1,268	
	78.5	2.0	11.3	2.9	5.0	0.4	100.0	
	(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)
2011	Mains gas	0	0	7	4	7	0	17
		0.0	0.0	42.4	20.1	37.6	0.0	(33)
		0.0	0.0	6.0	9.9	8.0	0.0	1.3
	Solid fuel	64	3	52	0	8	0	127
		50.1	2.4	41.2	0.0	6.3	0.0	(300)
		6.1	16.2	42.6	0.0	9.7	0.0	9.8
	Electric	172	5	35	4	0	0	216
		79.7	2.1	16.2	1.9	0.0	0.1	(463)
		16.6	23.9	28.3	11.6	0.0	5.6	16.6
	Paraffin oil & bottled gas ²	0	4	10	4	2	0	20
1.2		19.1	52.4	17.9	9.4	0.0	(34)	
0.0		19.9	8.5	10.1	2.3	0.0	1.5	
No other fuels	802	8	18	24	66	4	922	
	87.0	0.8	2.0	2.6	7.2	0.5	(1911)	
	77.2	39.9	14.6	68.4	80.1	94.4	70.8	
Total hholds	1,038	19	123	35	83	4	1,303	
	79.7	1.5	9.5	2.7	6.3	0.3	100.0	
	(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)

¹ The 2011 figures assume that the association between the main heating fuel and any secondary heating fuel remains the same as in 2008.

² Includes other unspecified fuels.

³ Includes 21k or 0.1% of homes where secondary fuel unknown in 2008.

Table A2.9: Household income by main heating fuel, Wales, 2008 and 2011¹

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income deciles	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	1 st decile	100	3	9	4	9	1	127
	Less than £8,840	78.9	2.7	7.3	3.3	7.1	0.7	(290)
		10.0	13.7	6.5	11.2	14.3	17.2	10.0
	2 nd decile	103	2	9	4	9	1	128
	£8,840 to £11,440	80.7	1.5	6.7	2.8	7.1	1.1	(309)
		10.4	7.9	6.0	9.6	14.5	28.9	10.1
	3 rd decile	97	2	14	5	8	0	126
	£11,440 to £13,716	77.3	1.4	10.8	3.8	6.3	0.3	(294)
		9.8	7.0	9.5	13.0	12.6	6.3	9.9
	4 th decile	102	3	8	4	9	1	127
	£13,716 to £16,255	80.7	2.1	6.7	3.1	6.9	0.6	(283)
		10.3	10.8	5.9	10.5	13.8	14.4	10.0
	5 th decile	102	2	10	4	9	0	127
	£16,255 to £19,455	80.4	1.3	8.0	2.8	7.1	0.3	(281)
		10.2	6.8	7.1	9.6	14.4	6.6	10.0
	6 th decile	99	2	15	5	5	0	127
£19,455 to £23,416	77.8	1.7	11.8	4.3	4.2	0.2	(275)	
	9.9	8.9	10.5	14.7	8.4	4.7	10.0	
7 th decile	96	2	21	2	6	1	129	
£23,416 to £27,220	74.6	1.4	16.7	1.7	4.7	0.9	(256)	
	9.6	7.3	15.0	6.0	9.7	21.9	10.1	
8 th decile	103	3	14	4	1	0	125	
£27,220 to £33,132	82.2	2.4	10.8	3.6	1.0	0.0	(259)	
	10.3	11.9	9.5	12.1	2.0	0.0	9.9	
9 th decile	100	3	19	2	3	0	127	
£33,132 to £43,319	78.5	2.1	15.3	1.7	2.5	0.0	(245)	
	10.0	10.5	13.6	5.8	4.9	0.0	10.0	
10 th decile	93	4	23	3	3	0	127	
£43,319 or more	73.6	3.0	18.5	2.2	2.7	0.0	(249)	
	9.4	15.2	16.4	7.5	5.5	0.0	10.0	
	Total hholds	995	25	143	37	63	5	1,268
		78.5	2.0	11.3	2.9	5.0	0.4	100.0
	(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)

Year	Full income deciles	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2011	1 st decile	99	3	8	3	15	1	130
	Less than £9,338	76.6	2.2	6.4	2.5	11.6	0.7	(Na)
		9.6	15.0	6.7	9.3	18.3	21.5	10.0
	2 nd decile	109	1	8	4	9	1	132
	£9,338 to £12,161	83.1	0.6	5.8	2.9	6.5	1.1	(Na)
		10.5	4.1	6.2	10.8	10.4	31.8	10.1
	3 rd decile	103	1	11	3	11	0	129
	£12,161 to £14,608	79.9	0.8	8.3	2.5	8.4	0.2	(Na)
		9.9	5.4	8.7	9.0	13.1	5.8	9.9
	4 th decile	106	3	9	4	8	0	131
	£14,608 to £17,197	81.1	2.4	6.5	3.3	6.3	0.4	(Na)
		10.2	16.7	6.9	12.3	10.0	10.6	10.0
	5 th decile	109	1	9	3	7	0	130
	£17,197 to £20,608	84.0	0.9	6.6	2.6	5.7	0.2	(Na)
		10.5	5.9	7.0	9.6	9.0	6.4	10.0
	6 th decile	102	1	15	4	9	0	130
£20,608 to £24,567	78.4	0.4	11.1	3.3	6.6	0.2	(Na)	
	9.8	2.9	11.8	12.1	10.4	5.1	10.0	
7 th decile	96	1	18	4	11	1	130	
£24,567 to £28,692	73.5	0.7	13.5	3.2	8.6	0.6	(Na)	
	9.2	4.6	14.3	11.7	13.5	18.8	10.0	
8 th decile	111	1	10	3	5	0	130	
£28,692 to £34,914	85.2	0.7	7.6	2.4	4.2	0.0	(Na)	
	10.7	4.6	8.0	9.0	6.6	0.0	10.0	
9 th decile	105	2	18	1	4	0	130	
£34,914 to £45,836	80.6	1.2	14.2	1.0	3.1	0.0	(Na)	
	10.1	8.5	15.0	3.6	4.8	0.0	10.0	
10 th decile	97	6	19	4	3	0	130	
£45,836 or more	74.8	4.7	14.6	3.4	2.5	0.0	(Na)	
	9.4	32.2	15.5	12.5	4.0	0.0	10.0	
	Total hholds	1,038	19	123	35	83	4	1,303
	(Sample size)	79.7	1.5	9.5	2.7	6.3	0.3	100.0
		(Na)	(Na)	(Na)	(Na)	(Na)	(Na)	(Na)

¹ 2011 estimates produced from data provided by BRE, using the Wales Fuel Poverty Projection Tool.

² As the projection tool works with fractional cases, sample sizes are not applicable for 2011 estimates.

Table A2.10a: Full income fuel poverty by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income fuel poverty	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Not in fuel poverty	787	12	76	19	38	5	936
		84.0	1.2	8.1	2.0	4.1	0.5	(2016)
		79.0	46.8	53.2	51.7	60.3	95.0	73.8
	In moderate fuel poverty (10 to 20%)	183	9	47	13	19	0	272
		67.4	3.4	17.2	5.0	6.9	0.1	(595)
		18.4	37.0	32.7	36.3	29.7	5.0	21.4
	In severe fuel poverty (> 20%)	25	4	20	4	6	0	60
		42.1	6.7	33.5	7.3	10.3	0.0	(130)
		2.6	16.2	14.2	11.9	9.9	0.0	4.8
	Total in Fuel poverty	209	13	67	18	25	0	332
	62.8	4.0	20.2	5.4	7.5	0.1	(725)	
	21.0	53.2	46.8	48.3	39.7	5.0	26.2	
Total hholds	995	25	143	37	63	5	1,268	
	78.5	2.0	11.3	2.9	5.0	0.4	100.0	
(Sample size)	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)	
2011	Not in fuel poverty	802	10	57	16	51	4	940
		85.3	1.1	6.1	1.7	5.5	0.4	(Na)
		77.3	52.3	46.3	44.6	62.1	95.6	72.2
	In moderate fuel poverty (10 to 20%)	207	6	44	14	25	0	296
		70.1	2.1	14.9	4.6	8.4	0.1	(Na)
		20.0	32.2	35.8	38.4	29.9	4.4	22.7
	In severe fuel poverty (> 20%)	29	3	22	6	7	0	66
		43.4	4.4	33.2	9.0	9.9	0.0	(Na)
		2.8	15.5	17.9	17.0	7.9	0.0	5.1
	Total in fuel poverty	236	9	66	20	31	0	362
	65.2	2.5	18.2	5.4	8.6	0.1	(Na)	
	22.7	47.7	53.7	55.4	37.9	4.4	27.8	
Total hholds	1,038	19	123	35	83	4	1,303	
	79.7	1.5	9.5	2.7	6.3	0.3	100.0	
(Sample size) ²	(Na)	(Na)	(Na)	(Na)	(Na)	(Na)	(Na)	

¹ 2011 estimates produced from data provided by BRE, using the Wales Fuel Poverty Projection Tool.² As the projection tool works with fractional cases, sample sizes are not applicable for 2011 estimates.

Table A2.10b: LIHC fuel poverty by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	LIHC fuel LIHC fuel	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)	
2008	Not in LIHC fuel poverty	905 80.1 91.0	18 1.6 73.2	118 10.4 82.3	28 2.5 75.9	55 4.8 86.8	5 0.4 100.0	1129 (2433) 89.0	
	Low fuel poverty gap (lowest 1/3 rd)	40 86.1 4.0	0 0.4 0.8	2 4.0 1.3	2 3.6 4.5	3 5.8 4.3	0 0.0 0.0	46 (116) 3.6	
	Medium fuel poverty gap (middle 1/3 rd)	32 68.9 3.2	1 3.1 5.7	7 14.4 4.7	2 5.0 6.2	4 8.7 6.4	0 0.0 0.0	46 (97) 3.6	
	High fuel poverty gap (highest 1/3 rd)	18 39.3 1.9	5 10.8 20.3	17 35.9 11.7	5 10.6 13.4	2 3.4 2.5	0 0.0 0.0	47 (95) 3.7	
	Total in LIHC Fuel poverty	90 64.8 9.0	7 4.8 26.8	25 18.2 17.7	9 6.4 24.1	8 6.0 13.2	0 0.0 0.0	139 (308) 11.0	
	Total hholds	995 78.5 (2140)	25 2.0 (50)	143 11.3 (308)	37 2.9 (85)	63 5.0 (142)	5 0.4 (16)	1,268 100.0 (2741)	
	(Sample size)								
	2011	Not in LIHC fuel poverty	923 81.4 88.9	14 1.2 72.4	96 8.5 77.8	25 2.2 72.2	71 6.3 86.1	4 0.4 100.0	1134 (Na) 87.0
		Low fuel poverty gap	48 86.6 4.7	0 0.7 2.2	1 2.4 1.1	2 4.2 6.6	3 6.1 4.1	0 0.0 0.0	56 (Na) 4.3
		Medium fuel poverty gap	39 68.7 3.8	2 3.2 9.6	9 16.4 7.6	3 4.8 7.7	4 6.9 4.8	0 0.0 0.0	57 (Na) 4.4
High fuel poverty gap		28 49.2 2.7	3 5.3 15.9	17 29.7 13.6	5 8.4 13.5	4 7.3 5.0	0 0.0 0.0	56 (Na) 4.3	
Total in LIHC Fuel poverty		115 68.1 11.1	5 3.1 27.6	27 16.2 22.2	10 5.8 27.8	11 6.8 13.9	0 0.0 0.0	169 (Na) 13.0	
Total hholds		1,038 79.7 (Na)	19 1.5 (Na)	123 9.5 (Na)	35 2.7 (Na)	83 6.3 (Na)	4 0.3 (Na)	1,303 100.0 (Na)	
(Sample size) ²									

¹ 2011 estimates produced from data provided by BRE, using the Wales Fuel Poverty Projection Tool.² As the projection tool works with fractional cases, sample sizes are not applicable for 2011 estimates.

Table A2.11: Tenure by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Tenure	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Owned with mortgage	348	9	50	9	15	0	432
		80.6	2.2	11.6	2.0	3.6	0.0	(827)
		35.0	37.9	35.0	23.3	24.6	0.0	34.0
	Owned outright	369	15	73	17	23	0	498
		74.1	3.0	14.7	3.5	4.7	0.0	(964)
		37.1	59.9	51.4	46.6	36.8	0.0	39.3
	Privately rented	90	0	10	6	8	0	115
78.4		0.3	9.1	5.2	7.1	0.0	(251)	
9.0		1.5	7.3	16.0	12.9	0.0	9.0	
Rented from local authority	115	0	8	4	9	4	140	
	82.1	0.1	5.6	3.1	6.3	2.8	(451)	
	11.5	0.8	5.5	11.7	14.0	76.1	11.0	
Rented from RSL	73	0	1	1	7	1	84	
	87.0	0.0	1.6	1.1	8.9	1.4	(248)	
	7.3	0.0	0.9	2.4	11.8	23.9	6.6	
Total hholds	995	25	143	37	63	5	1,268	
	78.5	2.0	11.3	2.9	5.0	0.4	100.0	
	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)	
2011	Owned with mortgage	350	8	42	7	18	0	425
		82.5	1.8	10.0	1.6	4.2	0.0	(827)
		33.7	40.8	34.4	18.9	21.5	0.0	32.6
	Owned outright	360	11	55	15	20	0	460
		78.1	2.4	12.0	3.2	4.3	0.0	(964)
		34.6	57.4	44.9	41.7	23.9	0.0	35.3
	Privately rented	152	0	16	9	27	0	204
74.4		0.0	8.0	4.3	13.3	0.0	(251)	
14.6		0.4	13.2	25.1	32.7	0.0	15.6	
Rented from local authority	105	0	8	4	7	3	127	
	82.3	0.2	6.7	3.2	5.3	2.3	(451)	
	10.1	1.4	6.9	11.6	8.1	66.6	9.7	
Rented from RSL	72	0	1	1	11	1	87	
	83.1	0.0	0.9	1.1	13.1	1.7	(248)	
	7.0	0.0	0.6	2.8	13.8	33.4	6.7	
Total hholds	1,038	19	123	35	83	4	1,303	
	79.7	1.5	9.5	2.7	6.3	0.3	100.0	
	(2140)	(50)	(308)	(85)	(142)	(16)	(2741)	

Table A2.12: Household type by main heating fuel, Wales, 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Household type	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)	
2008	Childless couple < 60 years	146 74.4 14.6	6 3.3 25.7	26 13.0 17.9	7 3.7 19.7	10 5.2 16.2	1 0.4 14.3	196 (410) 15.4	
	Childless couple 60 years plus	170 76.6 17.1	4 1.8 16.4	30 13.3 20.7	6 2.9 17.5	11 5.1 17.8	1 0.3 12.2	222 (448) 17.5	
	Couple with dependent children	227 81.2 22.8	5 1.8 19.7	36 12.8 25.0	7 2.5 18.5	5 1.7 7.3	0 0.1 7.2	279 (593) 22.0	
	Lone parent dependent children	86 85.7 8.6	1 0.9 3.6	3 3.4 2.4	3 3.1 8.4	7 6.6 10.4	0 0.4 7.2	100 (251) 7.9	
	Other multi-person households	116 78.1 11.7	2 1.2 7.1	21 14.1 14.6	6 3.7 14.9	4 2.7 6.4	0 0.2 7.2	149 (306) 11.7	
	One person < 60 years	103 80.0 10.4	2 1.2 6.2	11 8.5 7.6	3 2.1 7.2	10 8.0 16.4	0 0.3 7.1	129 (284) 10.2	
	One person 60 years plus	148 76.4 14.9	5 2.7 21.3	17 8.8 11.9	5 2.6 13.8	16 8.3 25.5	2 1.2 44.9	194 (449) 15.3	
	Total hhlds	995	25	143	37	63	5	1,268	
	(Sample size)	78.5 (2140)	2.0 (50)	11.3 (308)	2.9 (85)	5.0 (142)	0.4 (16)	100.0 (2741)	
	2011	Childless couple < 60 years	158 75.5 15.3	5 2.5 27.5	21 10.1 17.2	6 3.0 18.0	18 8.5 21.6	1 0.4 19.5	210 (410) 16.1
		Childless couple 60 years plus	172 77.8 16.6	8 3.7 42.6	24 11.0 19.8	6 2.7 17.0	10 4.6 12.2	1 0.2 11.6	221 (448) 17.0
		Couple with dependent children	237 82.1 22.8	3 0.9 14.0	35 12.2 28.6	9 2.9 24.2	5 1.8 6.2	0 0.1 5.3	289 (593) 22.2
		Lone parent dependent children	93 88.2 9.0	0 0.1 0.8	3 2.9 2.5	3 3.3 9.8	6 5.3 6.8	0 0.2 5.3	106 (251) 8.1
		Other multi-person households	115 77.1 11.1	1 0.6 4.5	16 10.9 13.1	4 2.9 12.2	13 8.4 15.2	0 0.2 5.3	149 (306) 11.4
One person < 60 years		110 81.0 10.6	0 0.4 2.6	9 6.7 7.3	3 1.8 7.1	13 9.8 16.1	0 0.3 10.3	136 (284) 10.4	
One person 60 years plus		153 79.4 14.7	1 0.8 7.9	14 7.3 11.4	4 2.1 11.7	18 9.4 21.9	2 1.0 42.8	192 (449) 14.8	
Total hhlds		1,038	19	123	35	83	4	1,303	
(Sample size)		79.7 (2140)	1.5 (50)	9.5 (308)	2.7 (85)	6.3 (142)	0.3 (16)	100.0 (2741)	

Annex 3: Main heating fuel tables for England

In the following tables, the sample size for the % estimates in each row and column is given (in brackets) in place of the 100% total figure.

Table A3.1: Location by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Location	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Urban area > 10,000 pop	15,279	30	37	96	1,443	245	17,130
		89.2	0.2	0.2	0.6	8.4	1.4	(12597)
		84.7	23.7	4.5	39.9	75.2	93.7	80.0
	Town and fringe	1,837	11	76	33	209	12	2,177
		84.4	0.5	3.5	1.5	9.6	0.5	(1506)
		10.2	8.5	9.1	13.8	10.9	4.5	0.2
	Village	689	66	479	83	198	3	1,518
		45.4	4.4	31.6	5.4	13.0	0.2	(1041)
		3.8	51.8	57.9	34.5	10.3	1.0	7.1
	Hamlet or Isolated	225	21	236	28	70	2	582
38.7		3.5	40.5	4.9	12.0	0.3	(379)	
1.2		16.0	28.5	11.8	3.6	0.8	2.7	
	Total hholds	18,031	128	828	240	1,919	262	21,407
		84.2	0.6	3.9	1.1	9.0	1.2	100.0
	(Sample size)	(12977)	(80)	(526)	(202)	(1425)	(313)	(15523)
2013	Urban area > 10,000 pop	16,282	29	20	34	1,423	367	18,155
		89.7	0.2	0.1	0.2	7.8	2.0	(9880)
		84.7	19.7	2.4	24.8	76.8	92.8	80.4
	Town and fringe	1,950	12	69	27	182	20	2,261
		86.2	0.5	3.1	1.2	8.0	0.9	(1166)
		10.1	8.3	8.5	20.0	9.8	5.1	10.0
	Village	764	74	456	59	201	3	1,556
		49.1	4.7	29.3	3.8	12.9	0.2	(709)
		4.0	50.0	55.5	42.7	10.9	0.8	6.9
	Hamlet or Isolated	234	32	276	17	47	5	611
38.2		5.3	45.1	2.8	7.6	0.9	(253)	
1.2		22.0	33.6	12.6	2.5	1.4	2.7	
	Total hholds	19,229	147	821	137	1,853	396	22,583
		85.2	0.7	3.6	0.6	8.2	1.8	100.0
	(Sample size)	(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)

Table A3.2: 'Government office' region by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Region	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)	
2008	North East	969 86.9 5.4	3 0.3 2.2	30 2.7 3.6	15 1.4 6.3	82 7.3 4.3	16 1.5 6.3	1,115 (913) 5.2	
	North West	2,632 89.8 14.6	13 0.5 10.4	47 1.6 5.7	22 0.7 9.1	192 6.6 10.0	23 0.8 8.9	2,930 (2159) 13.7	
	Yorkshire and the Humber	1,996 89.0 11.1	17 0.7 12.9	26 1.2 3.2	29 1.3 11.9	149 6.6 7.8	26 1.1 9.9	2,242 (1839) 10.5	
	East Midlands	1,605 85.9 8.9	11 0.6 8.2	77 4.1 9.3	26 1.4 10.8	134 7.2 7.0	15 0.8 5.8	1,868 (1366) 8.7	
	West Midlands	1,880 84.8 10.4	20 0.9 15.9	94 4.3 11.4	48 2.2 20.1	165 7.4 8.6	10 0.4 3.6	2,217 (1529) 10.4	
	East	1,845 78.6 10.2	16 0.7 12.6	209 8.9 25.2	29 1.2 12.2	228 9.7 11.9	19 0.8 7.3	2,346 (1614) 11.0	
	London	2,644 86.7 14.7	4 0.1 3.2	2 0.1 0.2	5 0.1 1.9	301 9.9 15.7	96 3.1 36.5	3,051 (2098) 14.3	
	South East	2,879 83.4 16.0	17 0.5 13.2	142 4.1 17.1	23 0.7 9.8	349 10.1 18.2	40 1.1 15.1	3,450 (2439) 16.1	
	South West	1,581 72.3 8.8	27 1.2 21.3	201 9.2 24.2	43 2.0 17.9	319 14.6 16.6	17 0.8 6.6	2,188 (1586) 10.2	
	Total hhlds	18,031	128	828	240	1,919	262	21,407	
	(Sample size)	84.2 (12977)	0.6 (80)	3.9 (526)	1.1 (202)	9.0 (1425)	1.2 (313)	100.0 (15523)	
	2013	North East	1,033 90.5 5.4	0 0.0 0.2	21 1.8 2.5	15 1.3 11.0	58 5.1 3.1	14 1.3 3.6	1,142 (715) 5.1
		North West	2,773 90.2 14.4	1 0.0 0.7	58 1.9 7.1	11 0.4 7.9	204 6.6 11.0	27 0.9 6.7	3,073 (1757) 13.6
		Yorkshire and the Humber	1,972 86.8 10.3	2 0.1 1.3	63 2.8 7.7	25 1.1 17.9	181 8.0 9.8	28 1.2 7.1	2,271 (1187) 10.1
East Midlands		1,699 87.8 8.8	10 0.5 6.7	82 4.3 10.0	15 0.8 10.7	112 5.8 6.1	16 0.8 4.0	1,934 (1167) 8.6	
West Midlands		1,954 84.8 10.2	28 1.2 19.3	113 4.9 13.8	27 1.2 19.6	164 7.1 8.8	17 0.7 4.3	2,304 (1174) 10.2	
East		1,965 79.0 10.2	26 1.0 17.5	205 8.2 25.0	10 0.4 7.4	263 10.6 14.2	18 0.7 4.5	2,487 (1343) 11.0	
London		2,910 87.4 15.1	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	226 6.8 12.2	194 5.8 49.0	3,330 (1517) 14.7	
South East		3,101 84.7 16.1	42 1.2 28.8	103 2.8 12.5	10 0.3 7.2	338 9.2 18.3	66 1.8 16.6	3,659 (1924) 16.2	
South West		1,822 76.5 9.5	38 1.6 25.5	175 7.4 21.3	25 1.1 18.3	306 12.9 16.5	16 0.7 4.1	2,382 (1224) 10.6	
Total hhlds		19,229	147	821	137	1,853	396	22,583	
(Sample size)		85.2 (10225)	0.7 (57)	3.6 (336)	0.6 (75)	8.2 (1002)	1.8 (313)	100.0 (12008)	

Table A3.3: Dwelling type by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling type	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	End terrace	1,892 89.9 10.5	12 0.5 9.0	46 2.2 5.6	29 1.4 12.0	126 6.0 6.6	0 0.0 0.2	2,105 (1638) 9.8
	Mid terrace	3,707 92.3 20.6	4 0.1 3.5	28 0.7 3.4	47 1.2 19.5	225 5.6 11.7	4 0.1 1.7	4,016 (2943) 18.8
	Semi-detached	5,098 90.6 28.3	22 0.4 17.4	189 3.4 22.8	96 1.7 40.2	218 3.9 11.4	3 0.0 1.0	5,626 (3893) 26.3
	Detached	3,143 85.4 17.4	38 1.0 29.5	398 10.8 48.1	32 0.9 13.2	71 1.9 3.7	0 0.0 0.0	3,682 (2142) 17.2
	Bungalow	1,552 78.2 8.6	51 2.5 39.4	167 8.4 20.1	28 1.4 11.9	179 9.0 9.3	8 0.4 3.2	1,985 (1498) 9.3
	Converted flat or with non-residential	600 77.9 3.3	1 0.1 0.7	0 0.0 0.0	1 0.1 0.3	138 17.9 7.2	31 4.0 11.8	770 (515) 3.6
	Purpose-built low rise flat	1,894 65.2 10.5	1 0.0 0.5	0 0.0 0.0	7 0.2 3.0	845 29.1 44.0	157 5.4 60.1	2,904 (2574) 13.6
	Purpose built high rise flat	143 45.1 0.8	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	117 36.7 6.1	58 18.2 22.1	318 (320) 1.5
	Total hholds	18,031 84.2 (12977)	128 0.6 (80)	828 3.9 (526)	240 1.1 (202)	1,919 9.0 (1425)	262 1.2 (313)	21,407 100.0 (15523)
	<i>(Sample size)</i>							
2013	End terrace	2,029 92.2 10.6	13 0.6 8.8	43 2.0 5.3	20 0.9 14.9	90 4.1 4.9	5 0.2 1.3	2,202 (1292) 9.7
	Mid terrace	3,834 93.2 19.9	9 0.2 6.2	21 0.5 2.6	19 0.5 13.8	223 5.4 12.1	9 0.2 2.2	4,115 (2313) 18.2
	Semi-detached	5,277 92.8 27.4	45 0.8 30.4	169 3.0 20.6	49 0.9 35.6	145 2.6 7.8	2 0.0 0.6	5,687 (2852) 25.2
	Detached	3,366 84.6 17.5	42 1.1 28.7	459 11.5 55.9	26 0.7 19.2	83 2.1 4.5	5 0.1 1.2	3,981 (1409) 17.6
	Bungalow	1,682 83.9 8.7	35 1.8 24.0	125 6.2 15.2	14 0.7 10.2	143 7.1 7.7	8 0.4 1.9	2,006 (1134) 8.9
	Converted flat or with non-residential	647 72.5 3.4	0 0.0 0.0	0 0.0 0.0	7 0.8 5.2	214 24.0 11.6	24 2.7 6.1	892 (394) 4.0
	Purpose-built low rise flat	2,193 67.5 11.4	3 0.1 1.8	3 0.1 0.4	2 0.1 1.2	825 25.4 44.5	222 6.8 56.1	3,249 (2317) 14.4
	Purpose built high rise flat	201 44.6 1.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	129 28.6 7.0	121 26.9 30.6	451 (297) 2.0
	Total hholds	19,229 85.2 (10225)	147 0.7 (57)	821 3.6 (336)	137 0.6 (75)	1,853 8.2 (1002)	396 1.8 (313)	22,583 100.0 (12008)
	<i>(Sample size)</i>							

Table A3.4: Dwelling age by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling age	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Pre 1850	372	14	182	34	89	4	695
		53.6	2.0	26.1	4.9	12.8	0.5	(428)
		2.1	11.0	21.9	14.3	4.6	1.4	3.2
	1850 to 1899	1,632	17	105	44	175	21	1,995
		81.8	0.8	5.3	2.2	8.8	1.0	(1284)
		9.1	13.2	12.7	18.6	9.1	8.0	9.3
	1900 to 1918	1,664	4	33	19	96	7	1,824
		91.3	0.2	1.8	1.0	5.3	0.4	(1103)
		9.2	3.5	4.0	7.8	5.0	2.6	8.5
	1919 to 1944	3,242	7	69	43	122	13	3,497
		92.7	0.2	2.0	1.2	3.5	0.4	(2487)
		18.0	5.7	8.4	18.1	6.3	5.1	16.3
1945 to 1964	3,727	17	116	65	261	24	4,209	
	88.5	0.4	2.7	1.5	6.2	0.6	(3557)	
	20.7	13.3	14.0	27.0	13.6	9.0	19.7	
1965 to 1974	2,652	7	126	19	358	75	3,238	
	81.9	0.2	3.9	0.6	11.1	2.3	(2514)	
	14.7	5.5	15.3	8.0	18.7	28.7	15.1	
1975 to 1980	1,191	9	43	11	146	54	1,454	
	81.9	0.6	2.9	0.8	10.0	3.7	(1169)	
	6.6	6.7	5.2	4.6	7.6	20.7	6.8	
1981 to 1990	1,447	28	69	4	343	40	1,931	
	74.9	1.5	3.6	0.2	17.8	2.1	(1344)	
	8.0	22.2	8.3	1.8	17.9	15.2	9.0	
Post 1990	2,103	24	84	0	329	24	2,565	
	82.0	1.0	3.3	0.0	12.8	1.0	(1637)	
	11.7	19.0	10.2	0.0	17.1	9.3	12.0	
Total hholds	18,031	128	828	240	1,919	262	21,407	
	84.2	0.6	3.9	1.1	9.0	1.2	100.0	
	(12977)	(80)	(526)	(202)	(1425)	(313)	(15523)	
(Sample size)								

Year	Dwelling age	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2013	Pre 1850	366	16	169	15	75	5	646
		56.6	2.5	26.1	2.4	11.5	0.8	(256)
		1.9	11.0	20.6	11.1	4.0	1.4	2.9
	1850 to 1899	1,585	17	110	29	176	21	1,939
		81.7	0.9	5.7	1.5	9.1	1.1	(821)
		8.2	11.8	13.4	21.4	9.5	5.3	8.6
	1900 to 1918	1,653	19	44	14	112	10	1,851
		89.3	1.0	2.4	0.7	6.1	0.5	(789)
		8.6	12.9	5.3	10.0	6.1	2.4	8.2
	1919 to 1944	3,543	5	69	27	149	46	3,840
		92.3	0.1	1.8	0.7	3.9	1.2	(1847)
		18.4	3.4	8.5	19.5	8.1	11.7	17.0
	1945 to 1964	3,963	17	104	43	218	50	4,394
90.2		0.4	2.4	1.0	5.0	1.1	(2960)	
20.6		11.9	12.6	31.0	11.8	12.5	19.5	
1965 to 1974	2,695	10	81	6	278	71	3,141	
	85.8	0.3	2.6	0.2	8.9	2.2	(1837)	
	14.0	6.8	9.9	4.5	15.0	17.8	13.9	
1975 to 1980	1,152	16	81	2	155	54	1,460	
	78.9	1.1	5.5	0.1	10.6	3.7	(848)	
	6.0	11.0	9.8	1.4	8.3	13.7	6.5	
1981 to 1990	1,497	13	63	1	280	51	1,905	
	78.6	0.7	3.3	0.1	14.7	2.7	(1025)	
	7.8	8.9	7.6	1.0	15.1	12.8	8.4	
Post 1990	2,775	33	100	0	409	88	3,406	
	81.5	1.0	2.9	0.0	12.0	2.6	(1625)	
	14.4	22.3	12.2	0.0	22.1	22.3	15.1	
Total hholds	19,229	147	821	137	1,853	396	22,583	
	85.2	0.7	3.6	0.6	8.2	1.8	100.0	
	(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)	

Table A3.5: Predominant wall type by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Wall type	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Masonry cavity	12,596 84.6 69.9	72 0.5 56.0	509 3.4 61.5	136 0.9 56.7	1,380 9.3 71.9	190 1.3 72.6	14,882 (11032) 69.5
	Masonry solid	4,546 85.1 25.2	25 0.5 19.2	259 4.9 31.3	87 1.6 36.3	394 7.4 20.6	32 0.6 12.2	5,343 (3467) 25.0
	Non-traditional (concrete, timber, metal)	495 68.3 2.7	32 4.4 24.8	41 5.7 5.0	10 1.4 4.1	111 15.3 5.8	36 5.0 13.7	724 (717) 3.4
	Mixed types (eg 50% solid & 50% cavity)	394 86.0 2.2	0 0.0 0.0	19 4.1 2.3	7 1.5 2.8	34 7.5 1.8	4 0.8 1.5	458 (307) 2.1
	Total hholds	18,031 84.2 (12977)	128 0.6 (80)	828 3.9 (526)	240 1.1 (202)	1,919 9.0 (1425)	262 1.2 (313)	21,407 100.0 (15523)
	(Sample size)							
2013	Masonry cavity	13,613 85.9 70.8	91 0.6 61.5	527 3.3 64.2	65 0.4 47.4	1,294 8.2 69.8	252 1.6 63.6	15,841 (8793) 70.1
	Masonry solid	4,816 85.7 25.0	39 0.7 26.7	254 4.5 31.0	45 0.8 32.9	395 7.0 21.3	69 1.2 17.3	5,618 (2443) 24.9
	Non-traditional (concrete, timber, metal)	492 69.1 2.6	16 2.2 10.8	15 2.1 1.8	15 2.1 11.0	109 15.3 5.9	65 9.1 16.4	711 (573) 3.1
	Mixed types (eg 50% solid & 50% cavity)	309 74.9 1.6	1 0.4 1.0	25 6.1 3.1	12 2.9 8.7	54 13.2 2.9	11 2.6 2.7	413 (199) 1.8
	Total hholds	19,229 85.2 (10225)	147 0.7 (57)	821 3.6 (336)	137 0.6 (75)	1,853 8.2 (1002)	396 1.8 (313)	22,583 100.0 (12008)
	(Sample size)							

Table A3.6: Energy EPC rating by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	EPC ratings	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	B rating* (SAP 81 to 91)	59 85.4 0.3	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	1 1.2 0.0	9 13.4 3.5	69 (71) 0.3
	C rating (SAP 69 to 80)	1,917 88.2 10.6	0 0.0 0.0	6 0.3 0.7	0 0.0 0.0	127 5.8 6.6	125 5.8 47.8	2,175 (1936) 10.2
	D rating (SAP 55 to 68)	7,029 92.4 39.0	0 0.0 0.0	119 1.6 14.4	2 0.0 0.8	368 4.8 19.2	87 1.1 33.3	7,606 (5836) 35.5
	E rating (SAP 39 to 54)	7,159 89.0 39.7	7 0.1 5.6	276 3.4 33.3	17 0.2 7.1	550 6.8 28.7	36 0.4 13.6	8,045 (5387) 37.6
	F rating (SAP 21 to 38)	1,810 64.7 10.0	37 1.3 28.7	347 12.4 41.9	98 3.5 40.8	502 18.0 26.2	4 0.2 1.7	2,799 (1790) 13.1
	G rating (SAP 1 to 20)	57 8.0 0.3	84 11.8 65.7	80 11.1 9.6	123 17.2 51.3	370 51.9 19.3	0 0.0 0.0	714 (503) 3.3
	Total hholds	18,031	128	828	240	1,919	262	21,407
		84.2	0.6	3.9	1.1	9.0	1.2	100.0
	(Sample size)	(12977)	(80)	(526)	(202)	(1425)	(313)	(15523)
2013	A/B rating (SAP 81 plus)	174 70.6 0.9	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	36 14.5 1.9	37 14.9 9.3	247 (124) 1.1
	C rating (SAP 69 to 80)	4,377 87.7 22.8	0 0.0 0.0	30 0.6 3.7	0 0.0 0.0	392 7.9 21.1	190 3.8 48.0	4,989 (3231) 22.1
	D rating (SAP 55 to 68)	10,716 92.3 55.7	9 0.1 6.4	241 2.1 29.3	22 0.2 16.1	493 4.2 26.6	132 1.1 33.4	11,614 (6139) 51.4
	E rating (SAP 39 to 54)	3,506 80.0 18.2	36 0.8 24.6	305 7.0 37.2	32 0.7 23.4	467 10.7 25.2	34 0.8 8.6	4,381 (1963) 19.4
	F rating (SAP 21 to 38)	453 41.3 2.4	54 4.9 36.4	219 20.0 26.7	48 4.4 35.3	320 29.2 17.3	3 0.3 0.7	1,096 (447) 4.9
	G rating (SAP 1 to 20)	3 1.3 0.0	48 18.7 32.6	25 9.8 3.1	35 13.5 25.2	145 56.6 7.8	0 0.0 0.0	256 (104) 1.1
	Total hholds	19,229	147	821	137	1,853	396	22,583
		85.2	0.7	3.6	0.6	8.2	1.8	100.0
	(Sample size)	(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)

Table A3.7: Decent homes standard by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Homes standard	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Decent passes standard	12,995 91.2 72.1	12 0.1 9.1	434 3.0 52.5	17 0.1 6.9	620 4.4 32.3	174 1.2 66.6	14,253 (10436) 66.6
	Fails thermal criteria on heating	306 50.2 1.7	4 0.6 2.9	0 0.0 0.0	39 6.4 16.3	261 42.8 13.6	0 0.0 0.0	610 (429) 2.9
	Fails thermal criteria on insulation only	928 45.2 5.1	65 3.1 50.4	60 2.9 7.3	144 7.0 59.9	821 40.0 42.8	36 1.7 13.7	2,053 (1460) 9.6
	Category I hazard on excess cold	519 51.9 2.9	47 4.7 36.8	246 24.6 29.7	33 3.3 13.6	155 15.5 8.1	1 0.1 0.4	1,001 (620) 4.7
	Fails other hazards, on repair etc	3,282 94.0 18.2	1 0.0 0.9	87 2.5 10.5	8 0.2 3.3	61 1.8 3.2	50 1.4 19.2	3,490 (2578) 16.3
	Total hholds	18,031	128	828	240	1,919	262	21,407
		84.2	0.6	3.9	1.1	9.0	1.2	100.0
	(Sample size)	(12977)	(80)	(526)	(202)	(1425)	(313)	(15523)
2013	Decent, passes standard	16,202 90.0 84.3	46 0.3 31.5	610 3.4 74.4	19 0.1 13.9	780 4.3 42.1	349 1.9 88.2	18,007 (9731) 79.7
	Fails thermal criteria on heating	132 26.0 0.7	9 1.7 5.9	2 0.3 0.2	38 7.6 28.0	326 64.4 17.6	0 0.0 0.0	507 (199) 2.2
	Fails thermal criteria on insulation only	315 29.6 1.6	52 4.9 35.6	10 1.0 1.3	53 5.0 38.5	624 58.7 33.7	9 0.8 2.2	1,064 (574) 4.7
	Category I hazard on excess cold	172 41.9 0.9	35 8.5 23.6	129 31.4 15.7	15 3.6 10.7	60 14.6 3.2	0 0.0 0.0	410 (167) 1.8
	Fails other hazards, on repair etc	2,408 92.8 12.5	5 0.2 3.4	70 2.7 8.5	12 0.5 8.8	62 2.4 3.4	38 1.5 9.6	2,595 (1337) 11.5
	Total hholds	19,229	147	821	137	1,853	396	22,583
		85.2	0.7	3.6	0.6	8.2	1.8	100.0
	(Sample size)	(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)

Table A3.8: Secondary heating fuel by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Secondary heating fuel	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Mains gas		0	35	4	187	8	234
			0.0	14.9	1.7	80.0	3.4	(161)
			0.0	4.2	1.6	9.7	3.0	1.1
	Solid fuel	1,549	34	528		199	3	2,312
		67.0	1.5	22.8		8.6	0.1	(1400)
		8.6	26.3	63.8		10.4	1.0	10.8
	Electric	2,557	30	139	85		40	2,851
89.7		1.1	4.9	3.0		1.4	(2157)	
14.2		23.5	16.8	35.5		15.4	13.3	
Paraffin oil & bottled gas ¹	51	2	38	6	38	0	136	
	37.3	1.7	28.3	4.6	28.2	0.0	(87)	
	0.3	1.8	4.6	2.6	2.0	0.0	0.6	
No other fuels ²	13,874	62	88	144	1,495	211	15,875	
	87.4	0.4	0.6	0.9	9.4	80.6	(11718)	
	76.9	48.5	10.6	60.3	77.9	1.3	74.2	
Total hholds	18,031	128	828	240	1,919	262	21,407	
	84.2	0.6	3.9	1.1	9.0	1.2	100.0	
	(Sample size)	(12977)	(80)	(526)	(202)	(1425)	(313)	(15523)
2013	Mains gas		0	15	5	112	2	133
			0.0	11.3	3.4	83.7	1.5	(53)
			0.0	1.8	3.3	6.0	0.5	0.6
	Solid fuel	1,973	61	551		164	17	2,766
		71.3	2.2	19.9		5.9	0.6	(1089)
		10.3	41.3	67.2		8.9	4.2	12.2
	Electric	3,429	19	149	32		62	3,692
92.9		0.5	4.0	0.9		1.7	(2309)	
17.8		13.1	18.1	23.4		15.7	16.3	
Paraffin oil & bottled gas ¹	69	3	36	0	30	0	137	
	50.4	2.0	26.0	0.0	21.6	0.0	(53)	
	0.4	1.8	4.3	0.0	1.6	0.0	0.6	
No other fuels ²	13,759	64	70	101	1,547	315	15,855	
	86.8	0.4	0.4	0.6	9.8	2.0	(8504)	
	71.6	43.7	8.5	73.3	83.5	79.5	70.2	
Total hholds	19,229	147	821	137	1,853	396	22,583	
	85.2	0.7	3.6	0.6	8.2	1.8	100.0	
	(Sample size)	(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)

¹ Includes other unspecified fuels.² Includes 21k or 0.1% of homes where secondary fuel unknown in 2008.

Table A3.9: Household income by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income deciles	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	1 st decile	1,690	17	58	40	285	51	2,140
	Less than £9,316	79.0	0.8	2.7	1.9	13.3	2.4	(1640)
		9.4	13.0	7.0	16.8	14.8	19.3	10.0
	2 nd decile	1,637	18	51	22	344	70	2,142
	£9,316 to £12,112	76.4	0.9	2.4	1.0	16.1	3.3	(1851)
		9.1	14.4	6.1	9.1	17.9	26.8	10.0
	3 rd decile	1,721	9	56	33	276	46	2,141
	£12,112 to £15,035	80.4	0.4	2.6	1.5	12.9	2.2	(1912)
		9.5	7.1	6.7	13.7	14.4	17.6	10.0
	4 th decile	1,750	12	85	31	236	27	2,140
	£15,035 to £18,366	81.8	0.6	4.0	1.4	11.0	1.2	(1791)
		9.7	9.6	10.3	12.8	12.3	10.2	10.0
	5 th decile	1,825	12	61	29	191	23	2,141
	£18,366 to £22,121	85.2	0.6	2.8	1.3	8.9	1.1	(1621)
	10.1	9.6	7.4	12.0	9.9	8.8	10.0	
6 th decile	1,797	13	98	16	197	19	2,141	
£22,121 to £26,509	83.9	0.6	4.6	0.8	9.2	0.9	(1465)	
	10.0	10.4	11.8	6.9	10.3	7.2	10.0	
7 th decile	1,891	7	84	23	130	7	2,141	
£26,509 to £31,929	88.3	0.3	3.9	1.1	6.1	0.3	(1423)	
	10.5	5.3	10.1	9.6	6.8	2.5	10.0	
8 th decile	1,937	7	90	21	80	5	2,141	
£31,929 to £39,061	90.5	0.3	4.2	1.0	3.7	0.3	(1326)	
	10.7	5.7	10.9	8.8	4.2	2.1	10.0	
9 th decile	1,917	12	94	11	100	7	2,140	
£39,061 to £51,296	89.5	0.6	4.4	0.5	4.7	0.3	(1284)	
	10.6	9.2	11.3	4.7	5.2	2.8	10.0	
10 th decile	1,867	20	153	14	79	7	2,140	
£51,296 or more	87.2	0.9	7.2	0.6	3.7	0.3	(1210)	
	10.4	15.5	18.5	5.7	4.1	2.7	10.0	
	Total hholds	18,031	128	828	240	1,919	262	21,407
		84.2	0.6	3.9	1.1	9.0	1.2	100.0
	(Sample size)	(12,977)	(80)	(526)	(202)	(1,425)	(313)	(15,523)

Year	Full income deciles	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2013	1 st decile	1,766	24	36	16	355	63	2,259
	Less than £11,113	78.2	1.1	1.6	0.7	15.7	2.8	(1396)
		9.2	16.6	4.3	11.4	19.2	15.8	10.0
	2 nd decile	1,830	11	46	22	285	65	2,259
	£11,113 to £14,493	81.0	0.5	2.0	1.0	12.6	2.9	(1528)
		9.5	7.6	5.6	15.8	15.4	16.4	10.0
	3 rd decile	1,893	23	38	28	227	50	2,258
	£14,493 to £17,634	83.8	1.0	1.7	1.2	10.1	2.2	(1490)
		9.8	15.3	4.6	20.1	12.3	12.7	10.0
	4 th decile	1,921	8	51	6	221	51	2,258
	£17,634 to £20,939	85.1	0.4	2.2	0.3	9.8	2.3	(1369)
		10.0	5.6	6.2	4.1	11.9	12.9	10.0
	5 th decile	1,945	8	75	17	183	30	2,258
	£20,939 to £24,560	86.2	0.3	3.3	0.8	8.1	1.3	(1343)
		10.1	5.2	9.1	12.6	9.9	7.5	10.0
6 th decile	1,952	5	84	17	178	23	2,259	
£24,560 to £28,839	86.4	0.2	3.7	0.7	7.9	1.0	(1211)	
	10.2	3.4	10.2	12.3	9.6	5.8	10.0	
7 th decile	1,971	15	126	7	117	22	2,257	
£28,839 to £34,383	87.3	0.7	5.6	0.3	5.2	1.0	(1086)	
	10.3	10.1	15.3	5.2	6.3	5.4	10.0	
8 th decile	1,962	10	123	22	117	23	2,258	
£34,383 to £41,832	86.9	0.4	5.5	1.0	5.2	1.0	(956)	
	10.2	6.8	15.0	16.2	6.3	5.9	10.0	
9 th decile	2,029	7	66	1	114	40	2,257	
£41,832 to £53,920	89.9	0.3	2.9	0.0	5.0	1.8	(855)	
	10.6	4.8	8.1	0.8	6.1	10.1	10.0	
10 th decile	1,960	36	176	2	55	29	2,259	
£53,920 or more	86.8	1.6	7.8	0.1	2.5	1.3	(774)	
	10.2	24.7	21.5	1.5	3.0	7.4	10.0	
Total hholds	19,229	147	821	137	1,853	396	22,583	
(Sample size)	85.2	0.7	3.6	0.6	8.2	1.8	100.0	
	(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)	

Table A3.10a: Full income fuel poverty by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income fuel poverty	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Not in fuel poverty	15,621	62	592	138	1,425	235	18,073
		86.4	0.3	3.3	0.8	7.9	1.3	(13101)
		86.6	48.0	71.5	57.6	74.3	89.8	84.4
	In moderate fuel poverty (10 to 20%)	2,051	47	189	73	402	22	2,784
		73.7	1.7	6.8	2.6	14.5	0.8	(2056)
		11.4	36.6	22.8	30.6	21.0	8.2	13.0
	In severe fuel poverty (> 20%)	359	20	47	28	92	5	550
	65.2	3.6	8.5	5.1	16.6	0.9	(366)	
	2.0	15.4	5.7	11.7	4.8	2.0	2.6	
Total in fuel poverty	2,410	67	236	102	494	27	3,335	
	72.3	2.0	7.1	3.0	14.8	0.8	(2422)	
	13.4	52.0	28.5	42.4	25.7	10.2	15.6	
Total hholds	18,031	128	828	240	1,919	262	21,407	
	84.2	0.6	3.9	1.1	9.0	1.2	100.0	
(Sample size)	(12,977)	(80)	(526)	(202)	(1,425)	(313)	(15,523)	
2013	Not in fuel poverty	17,280	85	639	76	1,402	371	19,853
		87.0	0.4	3.2	0.4	7.1	1.9	(10527)
		89.9	57.5	77.9	55.7	75.7	93.6	87.9
	In moderate fuel poverty (10 to 20%)	1,694	37	160	54	376	17	2,337
		72.5	1.6	6.8	2.3	16.1	0.7	(1285)
		8.8	25.2	19.5	39.4	20.3	4.2	10.3
	In severe fuel poverty (> 20%)	256	25	22	7	75	9	393
	65.1	6.5	5.5	1.7	19.0	2.2	(196)	
	1.3	17.3	2.6	4.9	4.0	2.2	1.7	
Total in fuel poverty	1,949	62	182	61	450	25	2,730	
	71.4	2.3	6.7	2.2	16.5	0.9	(1481)	
	10.1	42.5	22.1	44.3	24.3	6.4	12.1	
Total hholds	19,229	147	821	137	1,853	396	22,583	
	85.2	0.7	3.6	0.6	8.2	1.8	100.0	
(Sample size)	(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)	

Table A3.10b: LIHC fuel poverty by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	LIHC fuel poverty	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Not in LIHC fuel poverty	16,092	103	680	171	1,606	248	18,900
		85.1	0.5	3.6	0.9	8.5	1.3	(13508)
		89.2	80.0	82.1	71.4	83.7	94.9	88.3
	Low fuel poverty gap	736	4	13	4	71	7	836
		88.1	0.5	1.6	0.5	8.5	0.8	(718)
		4.1	3.1	1.6	1.7	3.7	2.6	3.9
	Medium fuel poverty gap	713	1	21	15	86	1	836
		85.2	0.1	2.5	1.8	10.3	0.1	(676)
		4.0	0.8	2.6	6.2	4.5	0.3	3.9
	High fuel poverty gap	490	21	114	50	156	6	835
	58.6	2.5	13.6	6.0	18.6	0.7	(621)	
	2.7	16.2	13.7	20.7	8.1	2.2	3.9	
Total in LIHC fuel poverty	1,939	26	148	69	313	13	2,507	
	77.3	1.0	5.9	2.7	12.5	0.5	(2015)	
	10.8	20.0	17.9	28.6	16.3	5.1	11.7	
Total hhlds	18,031	128	828	240	1,919	262	21,407	
	84.2	0.6	3.9	1.1	9.0	1.2	100.0	
(Sample size)	(12977)	(80)	(526)	(202)	(1425)	(313)	(15523)	
2013	Not in LIHC fuel poverty	17,370	119	699	101	1,563	384	20,236
		85.8	0.6	3.5	0.5	7.7	1.9	(10619)
		90.3	80.7	85.1	73.4	84.4	97.1	89.6
	Low fuel poverty gap	691	0	13	6	67	5	782
		88.5	0.0	1.7	0.7	8.5	0.6	(550)
		3.6	0.0	1.6	4.0	3.6	1.2	3.5
	Medium fuel poverty gap	675	4	20	6	71	6	782
		86.3	0.5	2.5	0.7	9.0	0.8	(447)
		3.5	2.8	2.4	4.1	3.8	1.6	3.5
	High fuel poverty gap	493	24	89	25	152	0	783
	62.9	3.1	11.3	3.2	19.4	0.1	(392)	
	2.6	16.4	10.8	18.4	8.2	0.1	3.5	
Total in LIHC fuel poverty	1,859	28	122	36	289	12	2,347	
	79.2	1.2	5.2	1.6	12.3	0.5	(1389)	
	9.7	19.3	14.9	26.6	15.6	2.9	10.4	
Total hhlds	19,229	147	821	137	1,853	396	22,583	
	85.2	0.7	3.6	0.6	8.2	1.8	100.0	
(Sample size)	(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)	

Table A3.11: Tenure by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Tenure	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)
2008	Owned with mortgage	7,109	44	296	54	450	16	7,969
		89.2	0.6	3.7	0.7	5.7	0.2	(4100)
		39.4	34.4	35.8	22.4	23.5	6.2	37.2
	Owned outright	5,543	69	407	95	530	15	6,659
		83.2	1.0	6.1	1.4	8.0	0.2	(3690)
		30.7	53.4	49.2	39.6	27.6	5.9	31.1
	Privately rented	2,309	12	93	42	497	42	2,996
77.1		0.4	3.1	1.4	16.6	1.4	(2337)	
12.8		9.7	11.2	17.6	25.9	16.2	14.0	
Rented from local authority	1,586	2	7	27	183	104	1,908	
	83.1	0.1	0.4	1.4	9.6	5.4	(2792)	
	8.8	1.5	0.9	11.1	9.5	39.6	8.9	
Rented from RSL	1,483	1	25	23	259	84	1,875	
	79.1	0.1	1.3	1.2	13.8	4.5	(2604)	
	8.2	1.0	3.0	9.4	13.5	32.1	8.8	
Total hholds	18,031	128	828	240	1,919	262	21,407	
	84.2	0.6	3.9	1.1	9.0	1.2	100.0	
	(Sample size)	(12977)	(80)	(526)	(202)	(1425)	(313)	(15523)
2013	Owned with mortgage	6,320	42	293	20	296	37	7,008
		90.2	0.6	4.2	0.3	4.2	0.5	(2356)
		32.9	28.7	35.7	14.6	16.0	9.3	31.0
	Owned outright	6,282	91	406	60	449	26	7,314
		85.9	1.2	5.6	0.8	6.1	0.4	(2503)
		32.7	61.8	49.5	44.0	24.3	6.5	32.4
	Privately rented	3,382	13	99	37	706	100	4,336
78.0		0.3	2.3	0.8	16.3	2.3	(2405)	
17.6		8.6	12.0	26.7	38.1	25.3	19.2	
Rented from local authority	1,415	1	5	8	121	115	1,665	
	85.0	0.1	0.3	0.5	7.3	6.9	(2154)	
	7.4	0.7	0.6	5.6	6.5	29.1	7.4	
Rented from RSL	1,830	0	18	13	280	118	2,259	
	81.0	0.0	0.8	0.6	12.4	5.2	(2590)	
	9.5	0.2	2.2	9.1	15.1	29.8	10.0	
Total hholds	19,229	147	821	137	1,853	396	22,583	
	85.2	0.7	3.6	0.6	8.2	1.8	100.0	
	(Sample size)	(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)

Table A3.12: Household type by main heating fuel, England, 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Household type	Mains gas	LPG & Bot gas	Heating Oil	Solid fuel	Electric heating	Communal	Total (Sample)	
2008	Childless couple < 60 years	3,583 87.7 19.9	18 0.4 14.0	155 3.8 18.7	62 1.5 25.8	248 6.1 12.9	20 0.5 7.6	4,085 (2487) 19.1	
	Childless couple 60 years plus	2,882 84.4 16.0	37 1.1 29.0	236 6.9 28.5	49 1.4 20.4	196 5.7 10.2	14 0.4 5.5	3,414 (2514) 15.9	
	Couple with dependent children	4,156 89.5 23.0	20 0.4 15.8	226 4.9 27.3	21 0.5 8.7	206 4.4 10.7	12 0.3 4.8	4,641 (3316) 21.7	
	Lone parent dependent children	1,248 88.8 6.9	6 0.4 4.4	20 1.4 2.4	10 0.7 4.0	99 7.1 5.2	22 1.6 8.5	1,405 (1496) 6.6	
	Other multi-person households	1,442 87.9 8.0	6 0.4 4.8	47 2.8 5.6	25 1.5 10.3	105 6.4 5.5	15 0.9 5.9	1,640 (1207) 7.7	
	One person < 60 years	2,179 76.6 12.1	12 0.4 9.3	40 1.4 4.9	26 0.9 11.0	536 18.8 28.0	52 1.8 19.8	2,846 (1904) 13.3	
	One person 60 years plus	2,542 75.3 14.1	29 0.9 22.6	105 3.1 12.6	47 1.4 19.8	527 15.6 27.5	126 3.7 48.0	3,376 (2599) 15.8	
	Total hholds	18,031	128	828	240	1,919	262	21,407	
		84.2	0.6	3.9	1.1	9.0	1.2	100.0	
	(Sample size)	(12,977)	(80)	(526)	(202)	(1,425)	(313)	(15,523)	
	2013	Childless couple < 60 years	3,619 86.5 18.8	36 0.9 24.7	138 3.3 16.8	31 0.7 22.3	304 7.3 16.4	56 1.3 14.1	4,183 (1778) 18.5
		Childless couple 60 years plus	3,419 85.3 17.8	47 1.2 31.8	292 7.3 35.5	31 0.8 22.3	195 4.9 10.5	24 0.6 6.0	4,006 (1787) 17.7
		Couple with dependent children	4,265 90.4 22.2	15 0.3 10.0	204 4.3 24.9	23 0.5 16.5	199 4.2 10.7	14 0.3 3.5	4,719 (2509) 20.9
Lone parent dependent children		1,494 91.3 7.8	1 0.1 0.9	12 0.8 1.5	1 0.1 0.9	91 5.6 4.9	35 2.2 8.9	1,635 (1373) 7.2	
Other multi-person households		1,615 87.5 8.4	9 0.5 5.8	34 1.8 4.1	9 0.5 6.2	142 7.7 7.7	39 2.1 9.8	1,847 (974) 8.2	
One person < 60 years		2,150 77.1 11.2	13 0.5 9.0	50 1.8 6.1	25 0.9 18.4	469 16.8 25.3	80 2.9 20.2	2,788 (1589) 12.3	
One person 60 years plus		2,669 78.4 13.9	26 0.8 17.9	90 2.7 11.0	19 0.5 13.5	453 13.3 24.4	149 4.4 37.6	3,405 (1998) 15.1	
Total hholds		19,229	147	821	137	1,853	396	22,583	
		85.2	0.7	3.6	0.6	8.2	1.8	100.0	
(Sample size)		(10225)	(57)	(336)	(75)	(1002)	(313)	(12008)	

Annex 4: Tables on the availability of mains gas in Scotland

- > In the following tables, the sample size for the % estimates in each row and column is given (in brackets) in place of the 100% total figure.
- > In each table, the first column of figures for 'Mains gas' includes estimates for households with communal gas fired heating, even where there is no gas supply to the actual dwelling.
- > For 2007-09, only figures for the total number of homes lacking mains gas are provided, there being no comparable information on their distance from the gas grid.

Table A4.1: Region by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Region	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	Highland and Islands	102	108					210
		48.7	51.3					(1543)
		5.5	22.6					9.0
	North East Scotland	231	92					323
		71.6	28.4					(1044)
		12.5	19.2					13.9
	Mid Scotland and Fife	240	43					284
		84.8	15.2					(1171)
		13.0	9.1					12.2
	West Scotland	266	31					297
89.7		10.3					(1546)	
14.4		6.4					12.7	
Glasgow	228	53					281	
	81.0	19.0					(762)	
	12.3	11.2					12.1	
Central Scotland	192	19					211	
	90.8	9.2					(627)	
	10.3	4.1					9.1	
Lothian	320	46					366	
	87.5	12.5					(1331)	
	17.3	9.5					15.7	
South Scotland	273	86					359	
	76.1	23.9					(1370)	
	14.7	17.9					15.4	
	Total hholds	1,853	477					2,330
		79.5	20.5					100.0
	(Sample size)	(7149)	(2245)					(9394)

Year	Region	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2012-14	Highland and Islands	94	17	6	11	4	88	219
		42.9	7.7	2.5	4.9	1.9	40.1	(1420)
		4.9	8.2	11.3	20.4	13.6	60.4	9.1
	North East Scotland	243	53	9	11	5	12	334
		72.8	15.8	2.8	3.4	1.4	3.7	(872)
		12.7	25.5	18.9	21.9	16.0	8.4	13.9
	Mid Scotland and Fife	240	22	7	6	6	9	289
		82.9	7.6	2.3	2.1	2.2	3.0	(1023)
		12.5	10.6	13.2	11.3	21.1	6.0	12.0
	West Scotland	275	19	5	2	2	4	306
		89.8	6.4	1.5	0.7	0.5	1.2	(1282)
		14.3	9.4	9.3	4.1	5.3	2.5	12.7
	Glasgow	247	28	7	6	0	0	287
		85.9	9.6	2.3	2.1	0.0	0.0	(722)
12.9		13.3	13.6	11.7	0.0	0.0	11.9	
Central Scotland	196	12	4	3	1	1	217	
	90.2	5.5	1.8	1.5	0.6	0.6	(526)	
	10.2	5.8	8.0	6.3	0.9	0.9	9.0	
Lothian	341	30	5	4	0	0	382	
	89.2	7.8	1.4	1.1	0.0	0.0	(1156)	
	17.7	14.3	10.7	8.0	0.0	0.0	15.9	
South Scotland	284	27	7	9	32	32	369	
	77.1	7.2	2.0	2.3	8.6	8.6	(1193)	
	14.8	12.8	15.0	16.3	21.8	21.8	15.4	
Total hholds	1,919	207	49	52	145	145	2,403	
	79.9	8.6	2.1	2.2	6.0	6.0	100.0	
	(Sample size)	(6136)	(708)	(197)	(236)	(798)	(798)	(8194)

Table A4.2: Location by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Location	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	Urban area	1,677						1,935
	>10,000 popn	86.7						(7330)
		90.5						83.1
	Hamlet or Isolated	175						395
		44.4						(2064)
		9.5						16.9
	Total hholds	1,853	477					2,330
		79.5	20.5					100.0
	(Sample size)	(7149)	(2245)					(9394)
2012-14	Urban area	1,745	177	28	24	3	9	1,987
	>10,000 popn	87.8	8.9	1.4	1.2	0.2	0.5	(6383)
		91.0	85.4	58.3	46.4	9.9	6.4	82.7
	Hamlet or Isolated	174	30	20	28	27	137	416
		41.7	7.3	4.8	6.8	6.5	33.0	(1811)
		9.0	14.6	41.7	53.6	90.1	93.6	17.3
	Total hholds	1,919	207	49	52	30	145	2,403
		79.9	8.6	2.1	2.2	1.3	6.0	100.0
	(Sample size)	(6136)	(708)	(197)	(236)	(119)	(798)	(8194)

Table A4.3: Dwelling type by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	End terrace	179 86.1 9.7					29 13.9 6.1	208 (859) 8.9
	Mid terrace	261 84.5 14.1				48 15.5 10.0	309 (1231) 13.2	
	Semi-detached	406 82.5 21.9				86 17.5 18.0	491 (2097) 21.1	
	Detached	356 74.5 19.2				122 25.5 25.5	478 (2270) 20.5	
	Tenement	405 76.5 21.9				124 23.5 26.0	530 (1745) 22.7	
	Converted flat or with non-residential	27 89.5 1.4				3 10.5 0.7	30 (123) 1.3	
	Purpose-built low rise flat	211 86.5 11.4				33 13.5 6.9	244 (941) 10.5	
	Purpose built high rise flat	8 20.1 0.4				33 79.9 6.9	41 (128) 1.8	
	Total hholds	1,853				477	2,330	
	(Sample size)	(7149)				(2245)	(9394)	

Year	Dwelling type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2012-14	End terrace	168	13	5	3	2	9	199
		84.5	6.5	2.3	1.3	0.8	4.6	(727)
		8.8	6.2	9.6	4.9	5.3	6.3	8.3
	Mid terrace	255	23	4	6	1	11	301
		84.6	7.7	1.3	2.1	0.5	3.7	(1048)
		13.3	11.2	8.2	12.2	4.8	7.7	12.5
	Semi-detached	408	20	11	4	6	32	481
		84.8	4.1	2.2	0.8	1.3	6.7	(1772)
		21.3	9.5	22.3	7.7	21.2	22.0	20.0
	Detached	363	23	5	26	20	85	522
		69.5	4.5	1.0	5.0	3.7	16.3	(2069)
		18.9	11.3	10.6	50.0	64.9	58.0	21.7
	Tenement	468	85	15	9	0	4	581
		80.6	14.7	2.5	1.5	0.0	0.7	(1558)
		24.4	41.3	30.9	16.2	0.0	2.9	24.2
	Converted flat or with non-residential	30	4	0	0	0	2	36
		83.0	11.4	0.5	0.0	0.5	4.6	(120)
		1.6	2.0	0.4	0.0	0.6	1.1	1.5
	Purpose-built low rise flat	216	17	3	1	1	3	241
		89.4	7.1	1.3	0.6	0.4	1.2	(786)
11.2		8.3	6.7	2.8	3.1	2.0	10.0	
Purpose built high rise flat	11	21	5	3	0	0	41	
	27.3	51.6	13.1	7.9	0.0	0.0	(114)	
	0.6	10.3	11.4	6.3	0.0	0.0	1.7	
Total hholds	1,919	207	49	52	30	145	2,403	
	79.9	8.6	2.1	2.2	1.3	6.0	100.0	
(Sample size)	(6136)	(708)	(197)	(236)	(119)	(798)	(8194)	
Total hholds	1,919	207	49	52	30	145	2,403	
	79.9	8.6	2.1	2.2	1.3	6.0	100.0	
(Sample size)	(6136)	(708)	(197)	(236)	(119)	(798)	(8194)	

Table A4.4: Tenure by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Tenure	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	Owned with mortgage	708					113	821
		86.3					13.7	(3263)
		38.2					23.6	35.2
	Owned outright	516					132	648
		79.6					20.4	(2778)
		27.9					27.7	27.8
	Privately rented	133					87	219
60.5						39.5	(831)	
7.2						18.1	9.4	
Rented from local authority	295					72	366	
	80.5					19.5	(1461)	
	15.9					15.0	15.7	
Rented from RSL	201					74	276	
	73.0					27.0	(1061)	
	10.9					15.6	11.8	
	Total hholds	1,853				477	2,330	
	(Sample size)	79.5				20.5	100.0	
		(7149)				(2245)	(9394)	
2012-14	Owned with mortgage	627	38	12	16	10	36	741
		84.7	5.2	1.6	2.2	1.4	4.9	(2485)
		32.7	18.6	24.9	31.4	34.4	24.7	30.8
	Owned outright	562	52	14	19	13	67	726
		77.4	7.1	1.9	2.6	1.8	9.2	(2679)
		29.3	25.0	28.9	36.1	42.8	45.5	30.2
	Privately Rented ¹	240	44	8	11	4	24	330
72.7		13.2	2.5	3.3	1.3	7.1	(1014)	
12.5		21.0	16.9	20.7	14.4	16.1	13.8	
Rented from local authority	292	36	9	3	0	11	351	
	83.1	10.3	2.6	0.7	0.1	3.3	(1181)	
	15.2	17.4	18.7	4.8	0.8	7.8	14.6	
Rented from RSL	197	37	5	4	2	9	254	
	77.6	14.7	2.0	1.4	0.9	3.4	(835)	
	10.3	18.0	10.7	6.9	7.5	5.9	10.6	
	Total hholds	1,919	207	49	52	30	145	2,403
	(Sample size)	79.9	8.6	2.1	2.2	1.3	6.0	100.0
		(6136)	(708)	(197)	(236)	(119)	(798)	(8194)

1 Including rent tree

Table A4.5: Dwelling age by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling age	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	Pre 1919	320						440
		72.6						(1716)
		17.3						18.9
	1919 to 1944	289						318
		90.8						(1285)
		15.6						13.6
	1945 to 1964	449						536
83.8							(2271)	
24.2							23.0	
1965 to 1982	414						545	
	75.9						(2168)	
	22.3						23.4	
Post 1982	381						491	
	77.7						(1954)	
	20.6						21.1	
2007-09	Total hholds	1,853	477					2,330
		79.5	20.5					100.0
	(Sample size)	(7149)	(2245)					(9394)
2012-14	Pre 1919	352	47	10	13	15	50	487
		72.4	9.6	2.0	2.6	3.1	10.3	(1551)
		18.4	22.5	20.5	24.0	49.7	34.4	20.3
	1919 to 1944	255	10	2	2	3	11	284
		89.8	3.6	0.7	0.8	1.2	3.9	(976)
		13.3	5.0	4.1	4.3	11.6	7.5	11.8
	1945 to 1964	445	42	11	4	2	21	525
84.7		8.0	2.0	0.8	0.4	4.1	(1877)	
23.2		20.3	22.2	7.6	7.8	14.5	21.8	
1965 to 1982	420	64	13	12	2	29	541	
	77.7	11.8	2.5	2.3	0.3	5.4	(1882)	
	21.9	30.8	28.1	23.5	5.3	20.0	22.5	
Post 1982	447	44	12	21	8	35	567	
	78.8	7.8	2.1	3.8	1.4	6.1	(1908)	
	23.3	21.4	25.1	40.6	25.7	23.6	23.6	
2012-14	Total hholds	1,919	207	49	52	30	145	2,403
		79.9	8.6	2.1	2.2	1.3	6.0	100.0
	(Sample size)	(6136)	(708)	(197)	(236)	(119)	(798)	(8194)

Table A4.6: Wall type by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)


Year	Predominant wall type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)	
			<23m	23-50m	50-500m	0.5-2km	>=2km		
2007-09	Masonry cavity	1,365 82.4 73.7						292 17.6 61.3	1,658 (6731) 71.2
	Masonry solid	378 74.4 20.4						130 25.6 27.2	508 (1988) 21.8
	Non-traditional (concrete, timber, metal)	85 67.1 4.6						42 32.9 8.8	127 (538) 5.5
	Mixed types (eg 50% solid & 50% cavity)	24 64.8 1.3						13 35.2 2.7	37 (137) 1.6
	Total hholds	1,853						477	2,330
	(Sample size)	79.5 (7149)						20.5 (2245)	100.0 (9394)
2012-14	Masonry cavity	1,409 82.9 73.4	130 7.6 62.6	28 1.7 59.3	33 1.9 62.6	14 0.8 45.8	87 5.1 59.1	1,700 (5870) 70.7	
	Masonry solid	396 73.3 20.6	49 9.2 23.9	12 2.2 24.8	14 2.6 26.6	16 2.9 52.9	53 9.9 36.4	541 (1736) 22.5	
	Non-traditional (concrete, timber, metal)	89 71.1 4.6	20 16.1 9.7	7 5.2 13.6	4 2.9 6.8	0 0.3 1.3	5 4.3 3.7	125 (459) 5.2	
	Mixed types (eg 50% solid & 50% cavity)	26 67.3 1.3	8 20.8 3.8	1 2.9 2.3	2 5.5 4.0	0 0.0 0.0	1 3.5 0.9	38 (129) 1.6	
	Total hholds	1,919	207	49	52	30	145	2,403	
	(Sample size)	79.9 (6136)	8.6 (708)	2.1 (197)	2.2 (236)	1.3 (119)	6.0 (798)	100.0 (8194)	

Table A4.7: EPC ratings by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	EPC ratings	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	B rating* (SAP 81 to 91)	10 100.0 0.5						10 (32) 0.4
	C rating (SAP 69 to 80)	436 98.1 23.5			9 1.9 1.8			444 (1621) 19.1
	D rating (SAP 55 to 68)	932 85.1 50.3			163 14.9 34.2			1,095 (4260) 47.0
	E rating (SAP 39 to 54)	390 65.6 21.1			205 34.4 42.9			595 (2613) 25.5
	F rating (SAP 21 to 38)	71 48.9 3.9			75 51.1 15.7			146 (692) 6.3
	G rating (SAP 1 to 20)	9 29.4 0.5			21 70.6 4.4			30 (128) 1.3
	Unknown	5 47.7 0.3			5 52.3 1.1			10 (48) 0.4
	Total hholds	1,853			477			2,330
	(Sample size)	79.5 (7149)			20.5 (2245)			100.0 (9394)
2012-14	A/B rating (SAP 81 plus)	25 81.9 1.3	2 7.7 1.1	2 5.5 3.4	0 0.0 0.0	0 0.9 0.9	1 3.9 0.8	30 (85) 1.3
	C rating (SAP 69 to 80)	731 88.0 38.1	55 6.7 26.8	13 1.6 27.2	12 1.5 23.5	3 0.4 10.2	15 1.9 10.5	830 (2594) 34.5
	D rating (SAP 55 to 68)	916 83.5 47.7	80 7.3 38.5	17 1.5 35.2	19 1.8 36.9	10 0.9 34.6	55 5.0 37.7	1,098 (3832) 45.7
	E rating (SAP 39 to 54)	221 62.7 11.5	48 13.6 23.1	11 3.0 22.5	13 3.8 25.4	9 2.5 29.9	51 14.4 34.7	353 (1325) 14.7
	F rating (SAP 21 to 38)	24 31.5 1.3	16 20.7 7.8	5 6.4 10.4	5 6.9 10.2	6 8.3 21.3	20 26.2 13.9	78 (305) 3.2
	G rating (SAP 1 to 20)	1 10.4 0.1	5 38.3 2.6	1 4.5 1.3	2 15.0 4.1	1 6.3 3.0	4 25.5 2.5	14 (53) 0.6
	Total hholds	1,919	207	49	52	30	145	2,403
	(Sample size)	79.9 (6136)	8.6 (708)	2.1 (197)	2.2 (236)	1.3 (119)	6.0 (798)	100.0 (8194)

Table A4.8: Housing standard by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Housing standard	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	Passes SHQS	692					121	813
		85.2					14.8	(3179)
		37.4					25.3	34.9
	Fails SHQS on energy efficiency	862					303	1,165
		74.0					26.0	(4876)
		46.5					63.5	50.0
	Fails on tolerable standard (but not EE)	6					1	7
87.7						12.3	(24)	
0.3						0.2	0.3	
Fails on other matters only	277					47	323	
	85.6					14.4	(1231)	
	14.9					9.8	13.9	
Not known	16					6	22	
	72.6					27.4	(84)	
	0.9					1.3	0.9	
Total hholds	1,853					477	2,330	
	79.5					20.5	100.0	
	(7149)					(2245)	(9394)	
2012-14	Passes SHQS	1,016	63	20	21	10	49	1,179
		86.2	5.3	1.7	1.8	0.9	4.2	(3934)
		53.0	30.3	41.3	40.7	34.0	33.4	49.1
	Fails SHQS on energy efficiency	616	129	26	28	19	88	907
		67.9	14.2	2.9	3.1	2.1	9.7	(3300)
		32.1	62.3	55.2	53.9	63.0	60.3	37.8
	Fails on tolerable standard (not EE)	20	1	0	0	0	0	22
94.7		4.2	0.0	0.2	0.0	1.0	(64)	
1.1		0.4	0.0	0.1	0.0	0.1	0.9	
Fails on other matters only	250	13	2	3	1	9	277	
	90.3	4.6	0.6	0.9	0.3	3.2	(847)	
	13.0	6.2	3.5	4.9	3.0	6.1	11.5	
Not known	16	1	0	0	0	0	18	
	90.4	8.0	0.0	1.4	0.0	0.3	(49)	
	0.8	0.7	0.0	0.5	0.0	0.0	0.7	
Total hholds	1,919	207	49	52	30	145	2,403	
	79.9	8.6	2.1	2.2	1.3	6.0	100.0	
	(6136)	(708)	(197)	(236)	(119)	(798)	(8194)	

Table A4.9: Primary heating fuel by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Main heating fuel	Mains Gas ¹	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	Mains gas	1,773 100.0 95.7	0 0.0 0.0					1,773 (6707) 76.1
	LPG and bottled gas	10 55.0 0.5	8 45.0 1.7					18 (74) 0.8
	Heating oil	17 12.4 0.9	118 87.6 24.7					135 (777) 5.8
	Solid fuel	5 15.3 0.3	28 84.7 5.9					33 (189) 1.4
	Electric heating	31 8.9 1.7	323 91.1 67.6					354 (1563) 15.2
	Communal heating	16 98.4 0.9	0 1.6 0.1					16 (84) 0.7
	Total hholds	1,853 79.5 (7149)	477 20.5 (2245)					2,330 100.0 (9394)
	(Sample size)							
2012-14	Mains gas	1,863 100.0 97.1	- - -	- - -	- - -	- - -	- - -	1,863 (5935) 77.5
	LPG and bottled gas	4 17.2 0.2	2 8.4 0.9	2 7.5 3.2	3 13.5 5.6	3 14.8 10.4	8 38.6 5.7	21 (78) 0.9
	Heating oil	6 4.4 0.3	18 12.6 8.6	9 6.3 17.9	18 12.6 34.2	16 11.4 52.3	74 52.7 50.9	140 (679) 5.9
	Solid fuel	2 8.2 0.1	5 19.1 2.4	2 7.0 3.7	2 9.0 4.5	2 7.3 6.2	13 49.4 8.8	26 (133) 1.1
	Electric heating	16 5.1 0.9	182 56.4 88.1	37 11.4 74.5	29 8.8 55.3	9 2.9 30.5	50 15.4 34.1	323 (1255) 13.4
	Communal heating	27 94.4 1.4	0 0.0 0.0	0 1.3 0.7	0 0.7 0.4	0 0.7 0.7	1 2.9 0.6	29 (114) 1.2
	Total hholds	1,919 79.9 (6136)	207 8.6 (708)	49 2.1 (197)	52 2.2 (236)	30 1.3 (119)	145 6.0 (798)	2,403 100.0 (8194)
	(Sample size)							

Table A4.10: Full income by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	Less than £5,200	74 71.4 4.0					30 28.6 6.3	104 (391) 4.4
	£5,200 to £10,400	323 75.7 17.5				103 24.3 21.9	426 (1697) 18.3	
	£10,400 to £15,600	353 76.9 19.2				106 23.1 22.4	459 (1872) 19.7	
	£15,600 to £20,800	275 81.9 14.9				61 18.1 12.9	335 (1347) 14.4	
	£20,800 to £26,000	206 80.4 11.2				50 19.6 10.6	256 (1016) 11.0	
	£26,000 to £36,400	287 81.6 15.6				65 18.4 13.7	352 (1456) 15.1	
	£36,400 or more	323 84.7 17.6				58 15.3 12.3	381 (1552) 16.4	
	Not known	12 72.6 0.7				5 27.4 1.0	17 (63) 0.7	
	Total hholds	1,853				477	2,330	
	(Sample size)	79.5 (7149)				20.5 (2245)	100.0 (9394)	
2012-14	Less than £10,400	255 75.8 13.3	42 12.4 20.2	10 3.0 21.2	6 1.9 11.9	3 0.8 9.3	21 6.1 14.1	337 (1129) 14.0
	£10,400 to £15,600	363 79.1 18.9	55 12.1 26.7	9 2.0 19.3	8 1.7 14.9	2 0.5 8.2	21 4.5 14.2	458 (1529) 19.1
	£15,600 to £20,800	300 79.1 15.6	39 10.1 18.6	9 2.3 18.0	8 2.2 15.6	3 0.8 9.7	21 5.6 14.4	379 (1308) 15.8
	£20,800 to £26,000	231 79.8 12.0	23 7.9 11.1	5 1.7 10.1	7 2.5 13.7	2 0.8 7.6	21 7.3 14.4	289 (999) 12.0
	£26,000 to £36,000	326 79.6 17.0	25 6.2 12.2	8 2.0 17.5	9 2.1 16.7	7 1.7 23.5	34 8.3 23.1	410 (1429) 17.1
	£36,000 or more	401 83.8 20.9	19 4.1 9.4	6 1.2 12.0	12 2.5 22.9	12 2.6 40.8	28 5.9 19.1	478 (1650) 19.9
	Not known	43 83.9 2.2	4 7.1 1.7	1 1.8 1.9	2 4.4 4.2	0 0.5 0.8	1 2.3 0.8	51 (150) 2.1
	Total hholds	1,919	207	49	52	30	145	2,403
	(Sample size)	79.9 (6136)	8.6 (708)	2.1 (197)	2.2 (236)	1.3 (119)	6.0 (798)	100.0 (8194)

Table A4.11: 10% fuel poverty by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income fuel poverty	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2007-09	Not in fuel poverty	1,369 83.1 73.9	278 16.9 58.3					1,647 (6528) 70.7
	In moderate fuel poverty (10 to 20%)	328 72.7 17.7	123 27.3 25.8					451 (1830) 19.3
	In severe fuel poverty (> 20%)	131 67.2 7.1	64 32.8 13.4					195 (887) 8.4
	Total in fuel poverty	459 71.1 24.8	187 28.9 39.2					646 (2717) 27.7
	Not known	25 67.2 1.3	12 32.8 2.6					37 (149) 1.6
	Total hholds	1,853 79.5 (7149)	477 20.5 (2245)					2,330 100.0 (9394)
	<i>(Sample size)</i>							
2012-14	Not in fuel poverty	1,335 85.6 69.6	98 6.3 47.1	28 1.8 57.6	25 1.6 49.0	15 1.0 49.2	59 3.8 40.2	1,560 (5025) 64.9
	In moderate fuel poverty (10 to 20%)	449 73.1 23.4	72 11.8 34.8	13 2.1 26.9	16 2.6 31.7	10 1.6 32.0	54 8.8 36.7	614 (2131) 25.6
	In severe fuel poverty (> 20%)	134 58.7 7.0	38 16.4 18.1	8 3.3 15.5	10 4.3 19.3	6 2.5 18.8	34 14.8 23.1	229 (852) 9.5
	Total in fuel poverty	583 69.2 30.4	110 13.1 52.9	21 2.4 42.4	26 3.1 51.0	15 1.8 50.8	88 10.4 59.8	843 (2983) 35.1
	Total hholds¹	1,918 79.8 (5995)	208 8.7 (696)	49 2.0 (191)	51 2.1 (225)	30 1.3 (117)	147 6.1 (784)	2,403 100.0 (8008)
	<i>(Sample size)</i>							

¹ In the 2012-2014 SHCS, the fuel poverty sample is slightly smaller and uses a different grossing from all the other variables, resulting in marginally different totals for mains gas and some of the distances from the grid.

Table A4.12: Household type by mains gas supply, Scotland 2007-09 and 2012-14

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Household type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)	
			<23m	23-50m	50-500m	0.5-2km	>=2km		
2007-09	Childless couple < 60 years	298 79.8 16.1						75 20.2 15.8	373 (1421) 16.0
	Childless couple 60 years plus	343 81.1 18.5						80 18.9 16.8	423 (1780) 18.2
	Couple with dependent children	398 85.1 21.5						70 14.9 14.6	468 (1950) 20.1
	Lone parent dependent children	99 80.7 5.3						24 19.3 5.0	122 (481) 5.3
	Other multi-person households	190 85.9 10.3						31 14.1 6.6	222 (914) 9.5
	One person < 60 years	236 72.1 12.7						91 27.9 19.1	327 (1241) 14.0
	One person 60 years plus	289 73.1 15.6						106 26.9 22.2	395 (1607) 16.9
	Total hhlds	1,853						477	2,330
	(Sample size)	79.5 (7149)						20.5 (2245)	100.0 (9394)
	2012-14	Childless couple < 60 years	294 81.9 15.3	29 8.1 14.1	7 1.9 14.2	7 1.9 12.9	5 1.4 16.5	17 4.8 11.7	359 (1145) 14.9
		Childless couple 60 years plus	339 77.4 17.7	29 6.7 14.1	8 1.9 17.1	11 2.4 20.1	7 1.6 22.8	44 10.1 30.1	438 (1584) 18.2
		Couple with dependent children	388 85.1 20.2	18 4.1 8.9	7 1.5 13.9	9 1.9 16.6	8 1.7 25.3	27 5.9 18.2	456 (1598) 19.0
Lone parent dependent children		106 82.2 5.5	12 9.3 5.8	1 0.9 2.5	3 2.4 5.8	0 0.2 1.0	7 5.0 4.4	130 (459) 5.4	
Other multi-person households		175 85.8 9.1	10 4.9 4.8	2 1.1 4.8	4 2.1 8.2	4 2.1 14.0	8 3.9 5.5	204 (702) 8.5	
One person < 60 years		297 75.6 15.5	60 15.2 28.8	9 2.3 18.4	8 2.1 15.8	3 0.9 11.3	16 4.0 10.6	392 (1224) 16.3	
One person 60 years plus		319 75.3 16.6	49 11.5 23.5	14 3.3 29.1	11 2.6 20.6	3 0.7 9.2	29 6.7 19.5	424 (1482) 17.6	
Total hhlds		1,919	207	49	52	30	145	2,403	
(Sample size)		79.9 (6136)	8.6 (708)	2.1 (197)	2.2 (236)	1.3 (119)	6.0 (798)	100.0 (8194)	

Annex 5: Tables on the availability of mains gas in Wales

- > In the following tables, the sample size for the % estimates in each row and column is given (in brackets) in place of the 100% total figure.
- > In each table, the first column of figures for 'Mains gas' includes estimates for households with communal gas fired heating, even where there is no gas supply to the actual dwelling.
- > For 2008, only figures for the total number of homes lacking mains gas are provided, there being no comparable information on their distance from the gas grid.

Table A5.1: Economic 'fora' area by mains gas supply, Wales 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Economic area	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	North Wales excl. South Gwynedd	187 73.5 18.4	67 26.5 26.6					254 (571) 20.0
	Mid Wales incl. South Gwynedd	42 33.9 4.1	82 66.1 32.3					123 (289) 9.7
	South-West Wales	284 79.4 28.0	74 20.6 29.2					358 (646) 28.2
	South-East Wales	503 94.4 49.5	30 5.6 11.9					533 (1235) 42.0
	Total hholds	1,016	252					1,268
		80.1	19.9					100.0
	(Sample size)	(2185)	(556)					(2741)
	2011	North Wales excl. South Gwynedd	217 78.4 20.3	16 5.8 21.0	5 1.8 26.7	9 3.4 34.1	12 4.3 40.7	18 6.4 22.8
Mid Wales incl. South Gwynedd		50 46.1 4.6	12 11.4 16.1	1 1.2 7.2	4 3.3 12.9	6 5.8 21.5	35 32.2 44.5	108 (289) 8.3
South-West Wales		237 80.1 22.1	18 5.9 22.9	4 1.2 19.3	7 2.3 24.2	8 2.7 27.8	23 7.9 29.8	296 (646) 22.7
South-East Wales		569 91.6 53.0	31 4.9 39.9	9 1.4 46.8	8 1.3 28.8	3 0.5 10.0	2 0.4 2.9	621 (1235) 47.7
Total hholds		1,073	76	18	28	29	78	1,303
		82.4	5.9	1.4	2.1	2.2	6.0	100.0
(Sample size)		(2216)	(133)	(41)	(53)	(76)	(222)	(2741)

Table A5.2: Location by mains gas supply, Wales 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Location	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Urban area > 10,000 pop	743				32		775
		95.9				4.1		(1667)
		73.1				12.6		61.1
	Town and fringe	189				25		214
		88.4				11.6		(470)
		18.6				9.8		16.9
Village	64				114		178	
	35.9				64.1		(382)	
	6.3				45.1		14.0	
Hamlet or Isolated	20				82		102	
	19.8				80.2		(222)	
	2.0				32.5		8.1	
	Total hholds	1,016			252		1,268	
		80.1			19.9		100.0	
	(Sample size)	(2185)			(556)		(2741)	
2013	Urban area > 10,000 pop	811	43	10	10	0	0	874
		92.8	4.9	1.2	1.1	0.0	0.0	(1667)
		75.6	56.5	55.9	36.0	0.0	0.0	67.1
	Town and fringe	175	19	1	3	3	2	204
		86.1	9.4	0.7	1.5	1.5	0.7	(470)
		16.4	25.0	8.1	10.7	10.7	1.9	15.6
Village	61	9	4	7	18	37	136	
	44.8	6.4	3.1	5.3	13.0	27.5	(382)	
	5.7	11.5	23.4	25.9	60.8	48.0	10.5	
Hamlet or Isolated	25	5	2	8	8	39	88	
	28.9	6.1	2.6	8.6	9.4	44.4	(222)	
	2.4	7.0	12.6	27.4	28.5	50.1	6.8	
	Total hholds	1,073	76	18	28	29	78	1,303
		82.4	5.9	1.4	2.1	2.2	6.0	100.0
	(Sample size)	(2216)	(133)	(41)	(53)	(76)	(222)	(2741)

Table A5.3: Dwelling type by mains gas supply, Wales 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	End terrace	117 88.6 11.5				15 11.4 6.0	132 (292) 10.4	
	Mid terrace	249 93.0 24.5			19 7.0 7.4	268 (579) 21.1		
	Semi-detached	307 86.8 30.2			47 13.2 18.5	353 (754) 27.9		
	Detached	168 64.0 16.5			94 36.0 37.3	262 (519) 20.6		
	Bungalow	90 61.1 8.8			57 38.9 22.6	147 (331) 11.6		
	Converted flat or with non-residential	17 77.9 1.7			5 22.1 1.9	22 (40) 1.7		
	Purpose-built low rise flat	65 82.4 6.4			14 17.6 5.5	79 (214) 6.2		
	Purpose built high rise flat	3 63.4 0.3			2 36.6 0.8	5 (12) 0.4		
	Total hholds	1,016			252	1,268		
	(Sample size)	80.1 (2185)			19.9 (556)	100.0 (2741)		
2011	End terrace	104 93.5 9.7	4 3.7 5.3	0 0.3 2.1	1 0.8 3.3	1 1.0 3.7	1 0.7 1.0	111 (292) 8.5
	Mid terrace	228 93.4 21.3	9 3.9 12.4	4 1.5 19.6	1 0.4 3.8	1 0.4 3.2	1 0.5 1.4	244 (579) 18.7
	Semi-detached	340 90.0 31.7	12 3.2 15.6	2 0.6 12.1	6 1.6 21.8	6 1.6 20.2	12 3.1 14.8	377 (754) 29.0
	Detached	182 69.6 16.9	11 4.2 14.3	2 0.7 9.9	8 3.1 29.4	13 4.8 43.1	46 17.6 58.8	261 (519) 20.0
	Bungalow	100 69.4 9.4	9 6.5 12.3	3 1.8 14.2	6 3.8 20.0	8 5.7 28.3	19 12.8 23.7	145 (331) 11.1
	Converted flat or with non-residential	35 80.3 3.2	8 17.8 10.1	0 0.0 0.0	1 1.3 2.0	0 0.6 1.0	0 0.0 0.0	43 (40) 3.3
	Purpose-built low rise flat	79 76.4 7.3	17 16.1 21.7	6 6.2 35.2	1 0.9 3.4	0 0.1 0.5	0 0.2 0.3	103 (214) 7.9
	Purpose built high rise flat	6 31.9 0.5	6 35.5 8.3	1 7.1 7.0	5 25.5 16.4	0 0.0 0.0	0 0.0 0.0	18 (12) 1.4
	Total hholds	1,073	76	18	28	29	78	1,303
	(Sample size)	82.4 (2216)	5.9 (133)	1.4 (41)	2.1 (53)	2.2 (76)	6.0 (222)	100.0 (2741)

Table 5.4: Tenure by mains gas supply, Wales 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Tenure	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Owned with mortgage	353					79	432
		81.7					18.3	(827)
		34.7					31.3	34.0
	Owned outright	378					121	498
		75.8					24.2	(964)
		37.2					47.8	39.3
	Privately rented	92					22	115
80.5						19.5	(251)	
9.1						8.9	9.0	
Rented from local authority	119					20	140	
	85.5					14.5	(451)	
	11.8					8.0	11.0	
Rented from RSL	74					10	84	
	88.0					12.0	(248)	
	7.3					4.0	6.6	
	Total hholds	1,016				252	1,268	
	(Sample size)	80.1				19.9	100.0	
		(2185)				(556)	(2741)	
2011	Owned with mortgage	358	19	4	9	8	28	425
		84.2	4.5	0.9	2.1	1.8	6.5	(827)
		33.3	24.8	21.7	31.6	26.9	35.2	32.6
	Owned outright	376	21	4	10	14	35	460
		81.6	4.6	1.0	2.2	3.1	7.6	(964)
		35.0	27.4	24.5	36.7	48.6	44.6	35.3
	Privately rented	157	20	5	8	4	11	204
76.9		9.7	2.2	3.9	2.0	5.2	(251)	
14.6		25.7	24.9	29.0	14.3	13.7	15.6	
Rented from local authority	109	8	3	0	3	5	127	
	85.9	6.0	2.1	0.3	2.2	3.6	(451)	
	10.2	10.0	14.4	1.3	9.6	5.8	9.7	
Rented from RSL	74	9	3	0	0	1	87	
	85.2	10.5	3.0	0.5	0.2	0.6	(248)	
	6.9	12.0	14.6	1.4	0.5	0.7	6.7	
	Total hholds	1,073	76	18	28	29	78	1,303
	(Sample size)	82.4	5.9	1.4	2.1	2.2	6.0	100.0
		(2216)	(133)	(41)	(53)	(76)	(222)	(2741)

Table A5.5: Dwelling age by mains gas supply, Wales 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling age	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Pre 1850	17	40					57
		29.5	70.5					(114)
		1.6	15.9					4.5
	1850 to 1899	109	42					151
		72.0	28.0					(305)
		10.7	16.8					11.9
	1900 to 1918	151	24					175
		86.3	13.7					(345)
		14.9	9.5					13.8
	1919 to 1944	119	19					139
		86.1	13.9					(279)
		11.8	7.6					10.9
	1945 to 1964	233	36					269
86.8		13.2					(618)	
23.0		14.1					21.2	
1965 to 1974	153	28					181	
	84.7	15.3					(421)	
	15.1	10.9					14.3	
1975 to 1980	60	12					73	
	82.9	17.1					(179)	
	5.9	4.9					5.7	
1981 to 1990	73	21					94	
	77.8	22.2					(209)	
	7.2	8.3					7.4	
Post 1990	100	30					130	
	76.8	23.2					(271)	
	9.8	11.9					10.2	
	Total hholds	1,016	252					1,268
		80.1	19.9					100.0
	(Sample size)	(2185)	(556)					(2741)

Year	Dwelling age	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2011	Pre 1850	19	6	1	2	6	16	49
		38.8	11.2	2.1	3.2	12.4	32.2	(114)
		1.8	7.2	5.8	5.8	21.1	20.4	3.8
	1850 to 1899	115	11	0	3	5	17	150
		76.6	7.2	0.0	1.9	3.0	11.3	(305)
		10.7	14.1	0.0	10.5	15.6	21.7	11.5
	1900 to 1918	151	8	0	2	4	12	176
		85.5	4.3	0.0	1.3	2.0	6.9	(345)
		14.1	9.9	0.0	8.5	12.3	15.6	13.5
	1919 to 1944	132	6	1	4	3	3	149
		88.8	3.8	0.5	2.5	2.3	2.1	(279)
		12.3	7.3	4.0	13.6	11.8	4.0	11.4
	1945 to 1964	240	12	2	5	3	9	271
		88.5	4.4	0.9	1.7	1.0	3.5	(618)
		22.4	15.6	13.7	16.3	9.7	12.1	20.8
	1965 to 1974	163	9	3	1	2	7	184
		88.6	4.7	1.5	0.6	0.8	3.8	(421)
		15.2	11.4	14.8	4.1	5.3	8.9	14.2
	1975 to 1980	58	3	2	0	2	3	69
		83.9	5.0	3.6	0.3	3.4	3.8	(179)
		5.4	4.5	13.6	0.8	8.1	3.4	5.3
1981 to 1990	81	11	1	3	2	4	102	
	79.7	10.5	1.0	3.2	1.9	3.7	(209)	
	7.6	13.9	5.8	11.8	6.5	4.8	7.8	
Post 1990	113	12	8	8	3	7	151	
	74.9	8.1	5.1	5.3	1.9	4.8	(271)	
	10.5	15.9	42.2	28.7	9.6	9.2	11.6	
Total hholds		1,073	76	18	28	29	78	1,303
(Sample size)		82.4	5.9	1.4	2.1	2.2	6.0	100.0
		(2216)	(133)	(41)	(53)	(76)	(222)	(2741)

Table A5.6: Wall type by mains gas supply, Wales 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Wall type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Masonry cavity	683					140	823
		83.0					17.0	(1825)
		67.3					55.4	64.9
	Masonry solid	262					87	349
		75.0					25.0	(690)
		25.8					34.5	27.5
	Non-traditional (concrete, timber, metal)	42					11	53
79.8						20.2	(132)	
4.1						4.2	4.2	
Mixed types (eg 50% solid & 50% cavity)	29					15	44	
	66.1					33.9	(94)	
	2.8					5.9	3.5	
Total hholds	1,016					252	1,268	
	80.1					19.9	100.0	
(Sample size)	(2185)					(556)	(2741)	
2011	Masonry cavity	725	47	16	19	17	36	859
		84.4	5.4	1.8	2.2	1.9	4.2	(1825)
		67.6	60.9	86.5	67.5	57.3	46.2	65.9
	Masonry solid	277	23	2	5	12	32	350
		79.1	6.5	0.5	1.5	3.3	9.1	(690)
		25.8	29.6	9.9	19.2	40.2	40.8	26.9
	Non-traditional (concrete, timber, metal)	40	6	1	2	0	2	51
78.8		11.0	1.3	4.7	0.0	4.2	(132)	
3.7		7.3	3.6	8.6	0.0	2.7	3.9	
Mixed types (eg 50% solid & 50% cavity)	31	2	0	1	1	8	43	
	72.8	3.9	0.0	3.0	1.7	18.6	(94)	
	2.9	2.2	0.0	4.7	2.5	10.3	3.3	
Total hholds	1,073	76	18	28	29	78	1,303	
	82.4	5.9	1.4	2.1	2.2	6.0	100.0	
(Sample size)	(2216)	(133)	(41)	(53)	(76)	(222)	(2741)	

Table A5.7: EPC ratings by mains gas supply, Wales 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	EPC ratings	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	A/B rating (SAP 81 plus)	3 100.0 0.3	0 0.0 0.0					3 (7) 0.2
	C rating (SAP 69 to 80)	106 96.1 10.4	4 3.9 1.7					110 (267) 8.7
	D rating (SAP 55 to 68)	419 94.3 41.2	26 5.7 10.1					445 (983) 35.0
	E rating (SAP 39 to 54)	401 85.1 39.4	70 14.9 27.7					471 (976) 37.1
	F rating (SAP 21 to 38)	77 44.8 7.6	94 55.2 37.4					171 (363) 13.5
	G rating (SAP 1 to 20)	11 15.5 1.1	58 84.5 23.1					69 (145) 5.4
	Total hholds	1,016	252					1,268
	(Sample size)	80.1 (2185)	19.9 (556)					100.0 (2741)
2011	A/B rating (SAP 81 plus)							
	C rating (SAP 69 to 80)							
	D rating (SAP 55 to 68)		No SAP/EPC data available for Wales after 2008					
	E rating (SAP 39 to 54)							
	F rating (SAP 21 to 38)							
	G rating (SAP 1 to 20)							
	Total hholds	1,073	76	18	28	29	78	1,303
(Sample size)	82.4 (2216)	5.9 (133)	1.4 (41)	2.1 (53)	2.2 (76)	6.0 (222)	100.0 (2741)	

Table A5.8: Housing quality standard by mains gas supply, Wales 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Homes standard	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Decent passes standard	55 91.1 5.4						61 (135) 4.8
	Fails thermal criteria on heating	805 77.1 79.2						1,044 (2222) 82.3
	Fails thermal criteria on insulation only	117 97.6 11.5						120 (291) 9.4
	Category I hazard on excess cold	0 0.0 0.0						3 (7) 0.2
	Fails other hazards, on repair etc	39 94.8 3.9						41 (86) 3.3
	Total hholds	1,016	252					1,268
		80.1	19.9					100.0
	(Sample size)	(2185)	(556)					(2741)
2011	Decent, passes standard							
	Fails thermal criteria on heating							
	Fails thermal criteria on insulation only	No housing quality data available for Wales after 2008						
	Category I hazard on excess cold							
	Fails other hazards, on repair etc							
	Total hholds	1,073	76	18	28	29	78	1,303
	82.4	5.9	1.4	2.1	2.2	6.0	100.0	
(Sample size)	(2216)	(133)	(41)	(53)	(76)	(222)	(2741)	

Table A5.9: Primary heating fuel by mains gas supply, Wales 2008 and 2011

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Main heating fuel	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Mains gas	995 100.0 98.0			-			995 (2140) 78.5
	LPG and bottled gas	2 8.3 0.2			23 91.7 9.0			25 (50) 2.0
	Heating oil	7 4.7 0.7			136 95.3 54.0			143 (308) 11.3
	Solid fuel	3 9.0 0.3			34 91.0 13.4			37 (85) 2.9
	Electric heating	4 6.2 0.4			59 93.8 23.4			63 (142) 5.0
	Communal heating	5 92.9 0.5			0 7.1 0.1			5 (16) 0.4
	Total hholds	1,016			252			1,268
	(Sample size)	80.1 (2185)			19.9 (556)			100.0 (2741)
2013 (50)	Mains gas	1,038 100.0 96.8	-	-	-	-	-	1,038 (2140) 79.7
	LPG and bottled gas	4 19.8 0.4	4 20.5 5.1	1 3.3 3.5	4 19.3 13.2	2 8.4 5.5	5 28.7 7.0	19 (50) 1.5
	Heating oil	13 10.8 1.2	18 14.6 23.6	5 3.7 24.8	12 9.8 43.8	22 17.6 74.5	53 43.4 68.4	123 (308) 9.5
	Solid fuel	6 17.3 0.6	9 26.0 12.0	1 1.5 3.0	5 13.3 16.9	5 13.7 16.6	10 28.2 12.7	35 (85) 2.7
	Electric heating	8 10.0 0.8	44 53.9 58.2	12 14.9 67.6	7 8.7 26.1	1 1.2 3.4	9 11.3 11.9	83 (142) 6.3
	Communal heating	3 75.6 0.3	1 19.7 1.1	0 4.7 1.1	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	4 (16) 0.3
	Total hholds	1,073	76	18	28	29	78	1,303
	(Sample size)	82.4 (2216)	5.9 (133)	1.4 (41)	2.1 (53)	2.2 (76)	6.0 (222)	100.0 (2741)

Table A5.10: Full income by mains gas supply, Wales 2008 and 2011¹

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	1 st decile	104					23	127
	Less than	82.2					17.8	(290)
	£8,840	10.3					8.9	10.0
	2 nd decile	105					23	128
	£8,840 to	82.0					18.0	(309)
	£11,440	10.3					9.1	10.1
	3 rd decile	98					28	126
	£11,440 to	78.0					22.0	(294)
	£13,716	9.7					11.0	9.9
	4 th decile	105					22	127
	£13,716 to	82.7					17.3	(283)
	£16,255	10.3					8.7	10.0
	5 th decile	104					23	127
	£16,255 to	82.2					17.8	(281)
	£19,455	10.2					9.0	10.0
6 th decile	101					26	127	
£19,455 to	79.8					20.2	(275)	
£23,416	10.0					10.1	10.0	
7 th decile	98					31	129	
£23,416 to	75.9					24.1	(256)	
£27,220	9.6					12.3	10.1	
8 th decile	104					21	125	
£27,220 to	83.2					16.8	(259)	
£33,132	10.3					8.3	9.9	
9 th decile	101					26	127	
£33,132 to	79.4					20.6	(245)	
£43,319	9.9					10.4	10.0	
10 th decile	96					31	127	
£43,319 or	75.8					24.2	(249)	
more	9.5					12.2	10.0	
Total hholds	1,016					252	1,268	
(Sample size)	80.1					19.9	100.0	
	(2185)					(556)	(2741)	

Year	Full income	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2011	1 st decile	104	9	8	1	4	4	130
	Less than £9,338	80.4	6.8	6.1	0.5	3.3	3.0	(Na)
		9.7	11.5	43.4	2.4	14.8	4.9	10.0
	2 nd decile	114	7	2	1	2	6	132
	£9,338 to £12,161	86.6	5.2	1.3	0.8	1.5	4.5	(Na)
		10.6	9.0	9.4	3.9	6.8	7.6	10.1
	3 rd decile	105	12	1	2	1	8	129
	£12,161 to £14,608	81.2	9.2	0.4	1.9	1.0	6.3	(Na)
		9.8	15.5	3.2	9.0	4.3	10.4	9.9
	4 th decile	111	8	1	2	1	8	131
	£14,608 to £17,197	84.5	6.0	1.1	1.7	0.9	5.8	(Na)
		10.3	10.3	7.6	8.2	4.1	9.6	10.0
	5 th decile	112	4	1	4	3	5	130
	£17,197 to £20,608	86.3	3.4	1.0	3.2	2.4	3.6	(Na)
		10.5	5.7	7.3	15.2	10.9	6.0	10.0
	6 th decile	106	11	1	2	3	8	130
	£20,608 to £24,567	81.3	8.4	0.4	1.8	2.2	6.0	(Na)
	9.9	14.3	3.0	8.3	9.7	9.9	10.0	
7 th decile	100	11	4	4	4	7	130	
£24,567 to £28,692	77.1	8.7	2.8	2.7	3.2	5.6	(Na)	
	9.4	14.8	19.7	12.8	14.1	9.3	10.0	
8 th decile	113	3	0	6	2	6	130	
£28,692 to £34,914	86.6	2.3	0.3	4.4	1.4	5.0	(Na)	
	10.5	3.9	2.1	20.6	6.5	8.3	10.0	
9 th decile	106	4	0	3	3	13	130	
£34,914 to £45,836	81.5	3.3	0.3	2.3	2.5	10.1	(Na)	
	9.9	5.7	2.4	10.8	11.0	16.8	10.0	
10 th decile	102	7	0	2	5	13	130	
£45,836 or more	78.2	5.5	0.3	1.9	4.0	10.2	(Na)	
	9.5	9.3	2.0	8.9	17.8	17.1	10.0	
Total hholds	1,073	76	18	28	29	78	1,303	
	82.4	5.9	1.4	2.1	2.2	6.0	100.0	
(Sample size) ²	(Na)	(Na)	(Na)	(Na)	(Na)	(Na)	(Na)	

¹ 2011 estimates produced from data provided by BRE, using the Wales Fuel Poverty Projection Tool.

² As the projection tool works with fractional cases, sample sizes are not applicable for 2011 estimates.

Table A5.11a: Full income fuel poverty by mains gas supply, Wales 2008 and 2011¹

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income fuel poverty	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Not in fuel poverty	799 85.3 78.6	137 14.7 54.4					936 (2016) 73.8
	In moderate fuel poverty (10 to 20%)	188 69.3 18.5	83 30.7 33.0					272 (595) 21.4
	In severe fuel poverty (> 20%)	29 47.6 2.8	32 52.4 12.5					60 (130) 4.8
	Total in fuel poverty	217 65.4 21.4	115 34.6 45.6					332 (725) 26.2
	Total hholds	1,016	252					1,268
	(Sample size)	80.1 (2185)	19.9 (556)					100.0 (2741)
2011	Not in fuel poverty	819 87.1 76.4	47 5.0 60.9	8 0.9 46.0	17 1.8 62.7	13 1.4 45.1	36 3.8 45.5	940 (Na) 72.2
	In moderate fuel poverty (10 to 20%)	220 74.1 20.5	20 6.8 26.4	8 2.7 44.0	7 2.3 24.6	9 3.1 31.3	33 11.0 41.6	296 (Na) 22.7
	In severe fuel poverty (> 20%)	34 51.7 3.2	10 14.6 12.7	2 2.8 10.1	4 5.3 12.7	7 10.4 23.6	10 15.3 12.9	66 (Na) 5.1
	Total in fuel poverty	254 70.0 23.6	30 8.2 39.1	10 2.7 54.0	10 2.8 37.3	16 4.4 54.9	43 11.8 54.5	362 (Na) 27.8
	Total hholds	1,073	76	18	28	29	78	1,303
	(Sample size) ²	82.4 (Na)	5.9 (Na)	1.4 (Na)	2.1 (Na)	2.2 (Na)	6.0 (Na)	100.0 (Na)

¹ 2011 estimates produced from data provided by BRE, using the Wales Fuel Poverty Projection Tool.² As the projection tool works with fractional cases, sample sizes are not applicable for 2011 estimates.

Table A5.11b: LIHC fuel poverty by mains gas supply, Wales 2008 and 2011¹

Thousand households/ row percentage/ column percentage/ (sample size)

Year	LIHC fuel poverty	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Not in LIHC fuel poverty	922					207	1,129
		81.7					18.3	(2433)
		90.8					82.1	89.0
	Low fuel poverty gap	41					5	46
		88.9					11.1	(116)
		4.0					2.0	3.6
	Medium fuel poverty gap	33					14	46
70.8						29.2	(97)	
3.2						5.4	3.6	
High fuel poverty gap	20					27	47	
	43.1					56.9	(95)	
	2.0					10.6	3.7	
Total in LIHC fuel poverty	94					45	139	
	67.5					32.5	(308)	
	9.2					17.9	11.0	
Total hholds	1,016					252	1,268	
	80.1					19.9	100.0	
	(Sample size) (2185)					(556)	(2741)	
2011	Not in LIHC fuel poverty	951	61	17	23	22	61	1,134
		83.9	5.3	1.5	2.0	1.9	5.4	(Na)
		88.6	79.3	91.9	82.8	75.5	77.8	87.0
	Low fuel poverty gap	50	2	1	0	2	2	56
		89.1	4.0	1.2	0.0	2.7	3.0	(Na)
		4.6	2.9	3.6	0.0	5.2	2.2	4.3
	Medium fuel poverty gap	41	5	0	2	1	7	57
72.8		8.2	0.5	4.1	2.6	11.7	(Na)	
3.9		6.1	1.6	8.4	5.1	8.5	4.4	
High fuel poverty gap	31	9	1	2	4	9	56	
	55.5	15.9	0.9	4.3	7.3	16.0	(Na)	
	2.9	11.7	2.8	8.8	14.1	11.6	4.3	
Total in LIHC fuel poverty	122	16	1	5	7	17	169	
	72.4	9.4	0.9	2.8	4.2	10.3	(Na)	
	11.4	20.7	8.1	17.2	24.5	22.2	13.0	
Total hholds	1,073	76	18	28	29	78	1,303	
	82.4	5.9	1.4	2.1	2.2	6.0	100.0	
	(Sample size) ² (2216)	(133)	(41)	(53)	(76)	(222)	(2741)	

¹ 2011 estimates produced from data provided by BRE, using the Wales Fuel Poverty Projection Tool.² As the projection tool works with fractional cases, sample sizes are not applicable for 2011 estimates.

Table A6.12: Household type by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Household type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)	
			<23m	23-50m	50-500m	0.5-2km	>=2km		
2008	Childless couple < 60 years	148					47	196 (410)	
	Childless couple 60 years plus	75.8					24.2	15.4 (448)	
	Couple with dependent children	14.6					18.8	17.5 (593)	
	Lone parent dependent children	175					47	100 (251)	
	Other multi-person households	78.9					21.1	149 (306)	
	One person < 60 years	17.2					18.5	129 (284)	
	One person 60 years plus	228					51	194 (449)	
	Total hholds	1,016					252	1,268	
	(Sample size)	80.1 (2185)					19.9 (556)	100.0 (2741)	
	2013	Childless couple < 60 years	164	18	3	5	7	13	210 (410)
		Childless couple 60 years plus	78.2	8.5	1.3	2.6	3.2	6.1	16.1 (448)
		Couple with dependent children	15.3	23.4	15.1	19.6	23.2	16.4	17.0 (593)
		Lone parent dependent children	181	14	1	4	4	17	106 (251)
Other multi-person households		81.9	6.3	0.6	1.7	2.0	7.5	149 (306)	
One person < 60 years		16.9	18.1	7.4	13.4	15.3	21.3	136 (284)	
One person 60 years plus		241	8	3	8	7	22	192 (449)	
Total hholds		1,073	76	18	28	29	78	1,303	
(Sample size)		82.4 (2216)	5.9 (133)	1.4 (41)	2.1 (53)	2.2 (76)	6.0 (222)	100.0 (2741)	

Annex 6: Tables on the availability of mains gas in England

- > In the following tables, the sample size for the % estimates in each row and column is given (in brackets) in place of the 100% total figure.
- > In each table, the first column of figures for 'Mains gas' includes estimates for households with communal gas fired heating, even where there is no gas supply to the actual dwelling.
- > For 2007-09, only figures for the total number of homes lacking mains gas are provided, there being no comparable information on their distance from the gas grid.

Table A6.1: Region by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Region	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	North East	1,011 90.6 5.4					104 9.4 4.0	1,115 (913) 5.2
	North West	2,719 92.8 14.5				211 7.2 8.1	2,930 (2159) 13.7	
	Yorkshire and the Humber	2,081 92.8 11.1				161 7.2 6.2	2,242 (1839) 10.5	
	East Midlands	1,674 89.6 8.9				194 10.4 7.5	1,868 (1366) 8.7	
	West Midlands	1,941 87.5 10.3				276 12.5 10.6	2,217 (1529) 10.4	
	East	1,902 81.1 10.1				444 18.9 17.0	2,346 (1614) 11.0	
	London	2,824 92.6 15.0				227 7.4 8.7	3,051 (2098) 14.3	
	South East	3,007 87.2 16.0				443 12.8 17.0	3,450 (2439) 16.1	
	South West	1,646 75.2 8.8				542 24.8 20.8	2,188 (1586) 10.2	
	Total hholds	18,805 87.8				2,602 12.2	21,407 100.0	
	(Sample size)	(13655)				(1868)	(15523)	

2013	North East	1,072	36	11	9	5	9	1,142
		93.9	3.1	0.9	0.8	0.4	0.8	(715)
		5.4	2.7	2.9	2.6	2.0	2.3	5.1
	North West	2,828	144	37	30	15	19	3,073
		92.0	4.7	1.2	1.0	0.5	0.6	(1757)
		14.2	10.8	10.0	8.9	6.1	4.8	13.6
	Yorkshire and the Humber	2,040	116	40	29	17	30	2,271
		89.8	5.1	1.7	1.3	0.7	1.3	(1187)
		10.3	8.7	10.7	8.5	7.0	7.4	10.1
	East Midlands	1,728	83	35	35	24	29	1,934
		89.3	4.3	1.8	1.8	1.2	1.5	(1167)
		8.7	6.3	9.5	10.3	9.8	7.1	8.6
	West Midlands	2,015	129	51	42	14	52	2,304
	87.4	5.6	2.2	1.8	0.6	2.3	(1174)	
	10.1	9.7	13.9	12.4	6.0	12.8	10.2	
East	2,002	208	41	67	61	109	2,487	
	80.5	8.3	1.6	2.7	2.4	4.4	(1343)	
	10.1	15.6	11.0	19.6	25.3	26.8	11.0	
London	3,131	170	21	8	0	0	3,330	
	94.0	5.1	0.6	0.3	0.0	0.0	(1517)	
	15.7	12.8	5.6	2.5	0.0	0.0	14.7	
South East	3,221	223	69	62	48	36	3,659	
	88.0	6.1	1.9	1.7	1.3	1.0	(1924)	
	16.2	16.8	18.6	18.0	20.1	8.8	16.2	
South West	1,856	222	66	59	57	122	2,382	
	77.9	9.3	2.8	2.5	2.4	5.1	(1224)	
	9.3	16.7	17.8	17.3	23.7	30.0	10.6	
Total hholds	19,893	1,331	371	341	240	407	22,583	
	88.1	5.9	1.6	1.5	1.1	1.8	100.0	
<i>(Sample size)</i>	<i>(10645)</i>	<i>(717)</i>	<i>(193)</i>	<i>(174)</i>	<i>(113)</i>	<i>(166)</i>	<i>(12008)</i>	

Table A6.2: Location by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Location	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Urban area > 10,000 pop	15,919			1,211			17,130
		92.9			7.1			(12597)
		84.7			46.5			80.0
	Town and fringe	1,901			276			2,177
		87.3			12.7			(1506)
		10.1			10.6			0.2
Village	739			779			1,518	
	48.7			51.3			(1041)	
	3.9			29.9			7.1	
Hamlet or Isolated	246			336			582	
	42.3			57.7			(379)	
	1.3			12.9			2.7	
	Total hholds	18,805		2,602			21,407	
		87.8		12.2			100.0	
	(Sample size)	(13655)		(1868)			(15523)	
2013	Urban area > 10,000 pop	16,864	972	176	135	8	0	18,155
		92.9	5.4	1.0	0.7	0.0	0.0	(9880)
		84.8	73.0	47.5	39.5	3.4	0.0	80.4
	Town and fringe	1,994	166	17	57	4	22	2,261
		88.2	7.4	0.7	2.5	0.2	1.0	(1166)
		10.0	12.5	4.6	16.8	1.5	5.4	10.0
Village	789	186	138	97	120	226	1,556	
	50.7	12.0	8.9	6.2	7.7	14.5	(709)	
	4.0	14.0	37.3	28.5	50.0	55.6	6.9	
Hamlet or Isolated	246	6	39	52	108	159	611	
	40.3	1.1	6.4	8.5	17.7	26.0	(253)	
	1.2	0.5	10.5	15.2	45.1	39.0	2.7	
	Total hholds	19,893	1,331	371	341	240	407	22,583
		88.1	5.9	1.6	1.5	1.1	1.8	100.0
	(Sample size)	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)

Table A6.3: Dwelling type by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)	
			<23m	23-50m	50-500m	0.5-2km	>=2km		
2008	End terrace	1,948 92.5 10.4						157 7.5 6.0	2,105 (1638) 9.8
	Mid terrace	3,804 94.7 20.2						212 5.3 8.2	4,016 (2943) 18.8
	Semi-detached	5,221 92.8 27.8						405 7.2 15.6	5,626 (3893) 26.3
	Detached	3,192 86.7 17.0						490 13.3 18.8	3,682 (2142) 17.2
	Bungalow	1,604 80.8 8.5						381 19.2 14.6	1,985 (1498) 9.3
	Converted flat or with non-residential	656 85.2 3.5						114 14.8 4.4	770 (515) 3.6
	Purpose-built low rise flat	2,166 74.6 11.5						739 25.4 28.4	2,904 (2574) 13.6
	Purpose built high rise flat	213 67.0 1.1						105 33.0 4.0	318 (320) 1.5
	Total hholds	18,805	2,602					21,407	
	(Sample size)	(13655)	(1868)					(15523)	
2013	End terrace	2,065 93.8 10.4	63 2.8 4.7	30 1.4 8.1	17 0.8 4.9	16 0.7 6.7	11 0.5 2.8	2,202 (1292) 9.7	
	Mid terrace	3,895 94.6 19.6	115 2.8 8.7	28 0.7 7.6	32 0.8 9.3	29 0.7 12.1	16 0.4 4.0	4,115 (2313) 18.2	
	Semi-detached	5,322 93.6 26.8	178 3.1 13.4	37 0.7 10.0	35 0.6 10.2	69 1.2 29.0	45 0.8 11.1	5,687 (2852) 25.2	
	Detached	3,413 85.7 17.2	23 0.6 1.7	73 1.8 19.8	101 2.5 29.6	84 2.1 35.2	286 7.2 70.4	3,981 (1409) 17.6	
	Bungalow	1,713 85.4 8.6	154 7.7 11.6	27 1.3 7.2	40 2.0 11.8	36 1.8 15.0	37 1.8 9.0	2,006 (1134) 8.9	
	Converted flat or with non-residential	704 78.9 3.5	154 17.3 11.6	25 2.8 6.7	5 0.6 1.6	4 0.4 1.5	0 0.0 0.0	892 (394) 4.0	
	Purpose-built low rise flat	2,459 75.7 12.4	559 17.2 42.0	117 3.6 31.5	102 3.1 29.9	2 0.0 0.7	11 0.3 2.7	3,249 (2317) 14.4	
	Purpose built high rise flat	323 71.6 1.6	85 18.9 6.4	34 7.5 9.1	9 2.0 2.7	0 0.0 0.0	0 0.0 0.0	451 (297) 2.0	
	Total hholds	19,893	1,331	371	341	240	407	22,583	
	(Sample size)	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)	

Table A6.4: Tenure by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Tenure	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Owned with mortgage	7260 91.1 38.6				710 8.9 27.3		7,969 (4100) 37.2
	Owned outright	5754 86.4 30.6				905 13.6 34.8		6,659 (3690) 31.1
	Privately rented	2443 81.6 13.0				553 18.4 21.2		2,996 (2337) 14.0
	Rented from local authority	1737 91.0 9.2				172 9.0 6.6		1,908 (2792) 8.9
	Rented from RSL	1612 86.0 8.6				263 14.0 10.1		1,875 (2604) 8.8
	Total hholds	18,805 87.8 (13655)				2,602 12.2 (1868)		21,407 100.0 (15523)
	<i>(Sample size)</i>							
2013	Owned with mortgage	6,437 91.8 32.4	220 3.1 16.5	82 1.2 22.2	58 0.8 17.0	61 0.9 25.3	151 2.2 37.1	7,008 (2356) 31.0
	Owned outright	6,438 88.0 32.4	334 4.6 25.1	112 1.5 30.3	131 1.8 38.3	114 1.6 47.7	185 2.5 45.6	7,314 (2503) 32.4
	Privately rented	3,524 81.3 17.7	509 11.7 38.3	108 2.5 29.2	100 2.3 29.3	45 1.0 18.9	49 1.1 12.1	4,336 (2405) 19.2
	Rented from local authority	1,539 92.5 7.7	73 4.4 5.5	28 1.7 7.4	11 0.7 3.4	8 0.5 3.2	6 0.4 1.5	1,665 (2154) 7.4
	Rented from RSL	1,955 86.6 9.8	195 8.6 14.6	41 1.8 10.9	41 1.8 12.1	12 0.5 4.9	16 0.7 3.8	2,259 (2590) 10.0
	Total hholds	19,893 88.1 (10645)	1,331 5.9 (717)	371 1.6 (193)	341 1.5 (174)	240 1.1 (113)	407 1.8 (166)	22,583 100.0 (12008)
	<i>(Sample size)</i>							

Table A6.5: Dwelling age by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Dwelling age	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Pre 1850	402			293			695
		57.8			42.2		(428)	
		2.1			11.3		3.2	
	1850 to 1899	1725			270			1,995
		86.5			13.5		(1284)	
		9.2			10.4		9.3	
	1900 to 1918	1725			99			1,824
		94.6			5.4		(1103)	
		9.2			3.8		8.5	
	1919 to 1944	3337			160			3,497
		95.4			4.6		(2487)	
		17.7			6.1		16.3	
	1945 to 1964	3867			342			4,209
91.9				8.1		(3557)		
20.6				13.1		19.7		
1965 to 1974	2812			425			3,238	
	86.9			13.1		(2514)		
	15.0			16.3		15.1		
1975 to 1980	1257			196			1,454	
	86.5			13.5		(1169)		
	6.7			7.5		6.8		
1981 to 1990	1537			394			1,931	
	79.6			20.4		(1344)		
	8.2			15.1		9.0		
Post 1990	2141			423			2,565	
	83.5			16.5		(1637)		
	11.4			16.3		12.0		
Total hholds	18,805			2,602			21,407	
	87.8			12.2		100.0		
	(13655)			(1868)		(15523)		

Year	Dwelling age	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2013	Pre 1850	381	41	41	48	44	92	646
		59.0	6.3	6.3	7.4	6.9	14.2	(256)
		1.9	3.0	11.0	14.1	18.5	22.5	2.9
	1850 to 1899	1,644	138	48	35	30	44	1,939
		84.8	7.1	2.5	1.8	1.6	2.3	(821)
		8.3	10.4	12.9	10.2	12.7	10.8	8.6
	1900 to 1918	1,715	64	7	18	25	23	1,851
		92.6	3.4	0.4	1.0	1.4	1.2	(789)
		8.6	4.8	2.0	5.2	10.6	5.5	8.2
	1919 to 1944	3,640	117	9	10	20	43	3,840
		94.8	3.1	0.2	0.3	0.5	1.1	(1847)
		18.3	8.8	2.5	3.0	8.3	10.6	17.0
1945 to 1964	4,063	205	27	34	31	36	4,394	
	92.5	4.7	0.6	0.8	0.7	0.8	(2960)	
	20.4	15.4	7.2	9.8	12.8	8.8	19.5	
1965 to 1974	2,788	213	61	29	18	31	3,141	
	88.8	6.8	2.0	0.9	0.6	1.0	(1837)	
	14.0	16.0	16.5	8.6	7.5	7.7	13.9	
1975 to 1980	1,230	88	42	38	18	44	1,460	
	84.3	6.0	2.9	2.6	1.2	3.0	(848)	
	6.2	6.6	11.3	11.1	7.4	10.9	6.5	
1981 to 1990	1,558	205	50	47	15	29	1,905	
	81.8	10.8	2.6	2.5	0.8	1.5	(1025)	
	7.8	15.4	13.5	13.7	6.3	7.1	8.4	
Post 1990	2,874	261	85	83	38	65	3,406	
	84.4	7.7	2.5	2.4	1.1	1.9	(1625)	
	14.4	19.6	23.0	24.2	15.9	16.0	15.1	
Total hholds	19,893	1,331	371	341	240	407	22,583	
	88.1	5.9	1.6	1.5	1.1	1.8	100.0	
	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)	

Table A6.6: Wall type by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Predominant wall type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Masonry cavity	13103 88.1 69.7						14,882 (11032) 69.5
	Masonry solid	4750 88.9 25.3						5,343 (3467) 25.0
	Non-traditional (concrete, timber, metal)	542 74.9 2.9						724 (717) 3.4
	Mixed types (eg 50% solid & 50% cavity)	410 89.5 2.2						458 (307) 2.1
	Total hholds	18,805 87.8			2,602 12.2			21,407 100.0
	(Sample size)	(13655)			(1868)			(15523)
2013	Masonry cavity	13,996 88.4 70.4	941 5.9 70.7	271 1.7 73.0	238 1.5 69.8	136 0.9 56.6	259 1.6 63.6	15,841 (8793) 70.1
	Masonry solid	5,005 89.1 25.2	248 4.4 18.7	74 1.3 20.0	80 1.4 23.5	92 1.6 38.6	118 2.1 29.1	5,618 (2443) 24.9
	Non-traditional (concrete, timber, metal)	565 79.5 2.8	90 12.7 6.8	25 3.5 6.6	8 1.2 2.5	4 0.6 1.7	19 2.7 4.6	711 (573) 3.1
	Mixed types (eg 50% solid & 50% cavity)	327 79.3 1.6	51 12.4 3.8	2 0.4 0.4	15 3.5 4.3	8 1.8 3.2	11 2.6 2.7	413 (199) 1.8
	Total hholds	19,893 88.1	1,331 5.9	371 1.6	341 1.5	240 1.1	407 1.8	22,583 100.0
	(Sample size)	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)

Table A6.7: EPC ratings by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	EPC ratings	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	A/B rating (SAP 81 plus)	68 98.8 0.4	1 1.2 0.0					69 (71) 0.3
	C rating (SAP 69 to 80)	2,050 94.3 10.9	124 5.7 4.7					2,175 (1936) 10.2
	D rating (SAP 55 to 68)	7,133 93.8 38.0	473 6.2 18.0					7,606 (5836) 35.5
	E rating (SAP 39 to 54)	7,319 91.0 39.0	726 9.0 27.6					8,045 (5387) 37.6
	F rating (SAP 21 to 38)	2,004 71.6 10.7	795 28.4 30.2					2,799 (1790) 13.1
	G rating (SAP 1 to 20)	203 28.4 1.1	511 71.6 19.4					714 (503) 3.3
	Total hholds	18,805	2,602					21,407
	(Sample size)	87.8 (13655)	12.2 (1868)					100.0 (15523)
2013	A/B rating (SAP 81 plus)	210 85.0 1.1	15 6.2 1.2	6 2.5 1.7	14 5.5 4.0	2 0.7 0.7	0 0.0 0.0	247 (124) 1.1
	C rating (SAP 69 to 80)	4,569 91.6 23.0	253 5.1 19.0	73 1.5 19.8	66 1.3 19.3	17 0.3 7.0	12 0.2 2.8	4,989 (3231) 22.1
	D rating (SAP 55 to 68)	10,894 93.8 54.8	391 3.4 29.4	93 0.8 25.2	59 0.5 17.2	61 0.5 25.5	115 1.0 28.4	11,614 (6139) 51.4
	E rating (SAP 39 to 54)	3,607 82.3 18.1	366 8.4 27.5	110 2.5 29.8	104 2.4 30.4	67 1.5 28.0	126 2.9 31.1	4,381 (1963) 19.4
	F rating (SAP 21 to 38)	546 49.8 2.7	216 19.7 16.2	71 6.4 19.1	71 6.5 20.8	75 6.9 31.4	117 10.7 28.8	1,096 (447) 4.9
	G rating (SAP 1 to 20)	68 26.5 0.3	89 34.9 6.7	17 6.5 4.5	28 11.1 8.3	18 6.9 7.4	36 14.1 8.8	256 (104) 1.1
	Total hholds	19,893	1,331	371	341	240	407	22,583
	(Sample size)	88.1 (10645)	5.9 (717)	1.6 (193)	1.5 (174)	1.1 (113)	1.8 (166)	100.0 (12008)

Table A6.8: Decent homes standard by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Homes standard	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Decent passes standard	13,253 93.0 70.6	1,000 7.0 38.0					14,253 (10436) 66.6
	Fails thermal criteria on heating	410 67.1 2.2	201 32.9 7.6					610 (429) 2.9
	Fails thermal criteria on insulation only	1,184 57.7 6.3	869 42.3 33.0					2,053 (1460) 9.6
	Category I hazard on excess cold	581 58.0 3.1	420 42.0 16.0					1,001 (620) 4.7
	Fails other hazards, on repair etc	3,349 96.0 17.8	140 4.0 5.3					3,490 (2578) 16.3
	Total hholds	18,805	2,602					21,407
		87.8	12.2					100.0
	(Sample size)	(13655)	(1868)					(15523)
2013	Decent, passes standard	16,613 92.3 83.5	603 3.4 45.3	209 1.2 56.3	206 1.1 60.4	137 0.8 57.1	240 1.3 58.9	18,007 (9731) 79.7
	Fails thermal criteria on heating	245 48.3 1.2	200 39.4 15.0	31 6.1 8.3	10 2.1 3.1	7 1.4 3.0	14 2.7 3.3	507 (199) 2.2
	Fails thermal criteria on insulation only	385 36.2 1.9	412 38.7 30.9	100 9.4 26.9	78 7.4 23.0	45 4.2 18.9	44 4.1 10.7	1,064 (574) 4.7
	Category I hazard on excess cold	188 45.9 0.9	60 14.7 4.5	18 4.5 4.9	37 9.1 11.0	37 9.1 15.6	68 16.6 16.7	410 (167) 1.8
	Fails other hazards, on repair etc	2,462 94.9 12.4	56 2.1 4.2	13 0.5 3.6	9 0.3 2.6	13 0.5 5.3	42 1.6 10.3	2,595 (1337) 11.5
	Total hholds	19,893	1,331	371	341	240	407	22,583
		88.1	5.9	1.6	1.5	1.1	1.8	100.0
	(Sample size)	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)

Table A6.9a: Primary heating fuel by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Main heating fuel	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Mains gas	18,031 100.0 95.9						18,031 (12977) 84.2
	LPG and bottled gas	28 21.9 0.1	100 78.1 3.8					128 (80) 0.6
	Heating oil	46 5.6 0.2	781 94.4 30.0					828 (526) 3.9
	Solid fuel	52 21.8 0.3	187 78.2 7.2					240 (202) 1.1
	Electric heating	390 20.3 2.1	1,529 79.7 58.7					1,919 (1425) 9.0
	Communal heating	257 98.1 1.4	5 1.9 0.2					262 (313) 1.2
	Total hholds	18,805	2,602					21,407
		87.8	12.2					100.0
	(Sample size)	(13655)	(1868)					(15523)
2013	Mains gas	19,229 100.0 96.7	- - -	- - -	- - -	- - -	- - -	19,229 (10225) 85.2
	LPG and bottled gas	18 12.5 0.1	29 19.6 2.2	22 15.2 6.0	28 19.2 8.3	21 14.1 8.7	29 19.4 7.0	147 (57) 0.7
	Heating oil	28 3.4 0.1	130 15.8 9.8	98 11.9 26.4	123 15.0 36.2	145 17.7 60.6	296 36.1 72.8	821 (336) 3.6
	Solid fuel	24 17.6 0.1	51 37.5 3.9	13 9.6 3.6	11 7.7 3.1	15 10.6 6.1	23 17.0 5.7	137 (75) 0.6
	Electric heating	206 11.1 1.0	1,121 60.5 84.2	237 12.8 64.0	175 9.4 51.2	57 3.1 23.7	57 3.1 13.9	1,853 (1002) 8.2
	Communal heating	387 97.7 1.9	0 0.0 0.0	0 0.0 0.0	4 1.1 1.3	2 0.6 1.0	2 0.6 0.6	396 (313) 1.8
	Total hholds	19,893	1,331	371	341	240	407	22,583
		88.1	5.9	1.6	1.5	1.1	1.8	100.0
	(Sample size)	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)

Table A6.9b: Secondary heating fuel by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Secondary heating fuel	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Mains gas	219						219
		93.6						(150)
		1.2						1.0
	Solid fuel	1,592	720					2,312
		68.9	31.1					(1400)
		8.5	27.4					10.8
	Electric	2,615	236					2,851
91.7		8.3					(2157)	
13.9		9.0					13.3	
Paraffin oil & bottled gas ¹	61	75					136	
	44.8	55.2					(87)	
	0.3	2.9					0.6	
No other fuels ²	14,290	1,600					15,890	
	89.9	10.1					(11729)	
	76.1	60.8					74.2	
	Total hholds	18,805	2,602					21,407
		87.8	12.2					100.0
	(Sample size)	(13655)	(1868)					(15523)
2013	Mains gas	133	-	-	-	-	-	133
		100.0	-	-	-	-	-	(53)
		0.7	-	-	-	-	-	0.6
	Solid fuel	2,008	146	111	120	133	248	2,766
		72.6	5.3	4.0	4.4	4.8	8.9	(1089)
		10.1	10.9	29.8	35.3	55.7	60.9	12.2
	Electric	3,490	43	25	34	37	61	3,692
94.6		1.2	0.7	0.9	1.0	1.7	(2309)	
17.5		3.3	6.8	10.0	15.4	15.1	16.3	
Paraffin oil & bottled gas ¹	78	14	13	4	5	22	137	
	57.0	10.2	9.7	3.0	3.8	16.2	(53)	
	0.4	1.0	3.6	1.2	2.2	5.5	0.6	
No other fuels ²	14,183	1,128	222	183	64	76	15,855	
	89.5	7.1	1.4	1.2	0.4	0.5	(8504)	
	71.3	84.8	59.8	53.5	26.8	18.6	70.2	
	Total hholds	19,893	1,331	371	341	240	407	22,583
		88.1	5.9	1.6	1.5	1.1	1.8	100.0
	(Sample size)	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)

¹ Includes other unspecified fuels.² Includes 21k or 0.1% of homes where secondary fuel unknown in 2008.

Table A6.10: Full income by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	1 st decile	1,803					337	2,140
	Less than £9,316	84.3					15.7	(1640)
		9.6					12.8	10.0
	2 nd decile	1,793					349	2,142
	£9,316 to £12,112	83.7					16.3	(1851)
		9.5					13.3	10.0
	3 rd decile	1,825					316	2,141
	£12,112 to £15,035	85.2					14.8	(1912)
		9.7					12.0	10.0
	4 th decile	1,839					301	2,140
	£15,035 to £18,366	86.0					14.0	(1791)
		9.8					11.4	10.0
	5 th decile	1,896					244	2,141
	£18,366 to £22,121	88.6					11.4	(1621)
	10.1					9.3	10.0	
6 th decile	1,852					289	2,141	
£22,121 to £26,509	86.5					13.5	(1465)	
	9.9					11.0	10.0	
7 th decile	1,929					212	2,141	
£26,509 to £31,929	90.1					9.9	(1423)	
	10.3					8.1	10.0	
8 th decile	1,972					169	2,141	
£31,929 to £39,061	92.1					7.9	(1326)	
	10.5					6.4	10.0	
9 th decile	1,957					183	2,140	
£39,061 to £51,296	91.4					8.6	(1284)	
	10.4					7.0	10.0	
10 th decile	1,911					229	2,140	
£51,296 or more	89.3					10.7	(1210)	
	10.2					8.7	10.0	
Total hholds	18,805					2,602	21,407	
	87.8					12.2	100.0	
(Sample size)	(13655)					(1868)	(15,523)	

Year	Full income	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2013	1 st decile	1,881	240	52	29	22	35	2,259
	Less than £11,113	83.3	10.6	2.3	1.3	1.0	1.6	(1396)
		9.5	18.0	13.9	8.6	9.1	8.7	10.0
	2 nd decile	1,929	203	40	43	18	27	2,259
	£11,113 to £14,493	85.4	9.0	1.8	1.9	0.8	1.2	(1528)
		9.7	15.2	10.7	12.5	7.3	6.6	10.0
	3 rd decile	1,970	171	37	40	21	19	2,258
	£14,493 to £17,634	87.2	7.6	1.6	1.8	0.9	0.8	(1490)
		9.9	12.8	10.0	11.8	8.6	4.7	10.0
	4 th decile	2,002	145	29	39	19	24	2,258
	£17,634 to £20,939	88.7	6.4	1.3	1.7	0.9	1.1	(1369)
		10.1	10.9	7.7	11.4	8.1	5.9	10.0
	5 th decile	1,999	131	45	26	10	48	2,258
	£20,939 to £24,560	88.5	5.8	2.0	1.1	0.4	2.1	(1343)
		10.0	9.9	12.2	7.6	4.1	11.7	10.0
	6 th decile	1,989	131	48	24	23	44	2,259
	£24,560 to £28,839	88.0	5.8	2.1	1.1	1.0	2.0	(1211)
		10.0	9.8	13.0	7.0	9.6	10.9	10.0
	7 th decile	2,006	109	39	32	16	55	2,257
£28,839 to £34,383	88.9	4.8	1.7	1.4	0.7	2.4	(1086)	
	10.1	8.2	10.5	9.2	6.5	13.6	10.0	
8 th decile	2,034	83	29	33	43	37	2,258	
£34,383 to £41,832	90.1	3.7	1.3	1.5	1.9	1.7	(956)	
	10.2	6.2	7.7	9.7	17.9	9.2	10.0	
9 th decile	2,078	65	19	27	26	41	2,257	
£41,832 to £53,920	92.1	2.9	0.8	1.2	1.2	1.8	(855)	
	10.4	4.9	5.0	8.0	11.0	10.2	10.0	
10 th decile	2,006	53	34	48	42	76	2,259	
£53,920 or more	88.8	2.3	1.5	2.1	1.9	3.3	(774)	
	10.1	4.0	9.2	14.1	17.6	18.6	10.0	
Total hholds	19,893	1,331	371	341	240	407	22,583	
(Sample size)	88.1	5.9	1.6	1.5	1.1	1.8	100.0	
	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)	

Table A6.11a: Full income fuel poverty by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Full income fuel poverty	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Not in fuel poverty	16,164 89.4 86.1			1,908 10.6 72.5			18,073 (13101) 84.4
	In moderate fuel poverty (10 to 20%)	2,218 79.7 11.8			566 20.3 21.5			2,784 (2056) 13.0
	In severe fuel poverty (> 20%)	394 71.7 2.1			156 28.3 5.9			550 (366) 2.6
	Total in fuel poverty	2,612 78.3 13.9			722 21.7 27.5			3,335 (2422) 15.6
	Total hholds	18,805 87.8			2,602 12.2			21,407 100.0
	(Sample size)	(13655)			(1868)			(15,523)
2013	Not in fuel poverty	17,801 89.7 89.5	1,020 5.1 76.6	294 1.5 79.3	259 1.3 75.9	180 0.9 75.0	299 1.5 73.5	19,853 (10527) 87.9
	In moderate fuel poverty (10 to 20%)	1,803 77.1 9.1	261 11.2 19.6	63 2.7 17.1	76 3.2 22.2	53 2.3 22.1	81 3.5 20.0	2,337 (1285) 10.3
	In severe fuel poverty (> 20%)	290 73.7 1.5	50 12.7 3.8	13 3.4 3.6	6 1.6 1.9	7 1.8 2.9	27 6.8 6.5	393 (196) 1.7
	Total in fuel poverty	2,092 76.6 10.5	311 11.4 23.4	77 2.8 20.7	82 3.0 24.1	60 2.2 25.0	108 3.9 26.5	2,730 (1481) 12.1
	Total hholds	19,893 88.1	1,331 5.9	371 1.6	341 1.5	240 1.1	407 1.8	22,583 100.0
	(Sample size)	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)

Table A6.11b: LIHC fuel poverty by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	LIHC fuel poverty	Mains gas	Likely distance from grid where no mains gas					Total (Sample)
			<23m	23-50m	50-500m	0.5-2km	>=2km	
2008	Not in LIHC fuel poverty	16,742 88.6 89.0	2,159 11.4 83.0					18,900 (13508) 88.3
	Low fuel poverty gap	762 91.0 4.1	75 9.0 2.9					837 (712) 3.9
	Medium fuel poverty gap	736 88.2 3.9	98 11.8 3.8					835 (677) 3.9
	High fuel poverty gap	565 67.6 3.0	270 32.4 10.4					835 (626) 3.9
	Total in LIHC fuel poverty	2,063 82.3 11.0	444 17.7 17.0					2,507 (2015) 11.7
	Total hholds	18,805 87.8	2,602 12.2					21,407 100.0
	(Sample size)	(13655)	(1868)					(15523)
2013	Not in LIHC fuel poverty	17,976 88.8 90.4	1,138 5.6 85.5	322 1.6 86.9	291 1.4 85.2	204 1.0 85.3	304 1.5 74.8	20,236 (10619) 89.6
	Low fuel poverty gap	702 89.8 3.5	50 6.4 3.8	9 1.1 2.4	8 1.0 2.2	2 0.3 0.9	11 1.4 2.7	782 (550) 3.5
	Medium fuel poverty gap	688 87.9 3.5	48 6.1 3.6	9 1.1 2.4	9 1.2 2.7	4 0.5 1.6	25 3.2 6.2	782 (447) 3.5
	High fuel poverty gap	527 67.4 2.7	95 12.2 7.2	31 4.0 8.4	34 4.3 9.8	29 3.7 12.2	66 8.4 16.2	783 (392) 3.5
	Total in LIHC fuel poverty	1,917 81.7 9.6	193 8.2 14.5	49 2.1 13.1	50 2.1 14.8	35 1.5 14.7	102 4.4 25.2	2,347 (1389) 10.4
	Total hholds	19,893 88.1	1,331 5.9	371 1.6	341 1.5	240 1.1	407 1.8	22,583 100.0
	(Sample size)	(10645)	(717)	(193)	(174)	(113)	(166)	(12008)

Table A6.12: Household type by mains gas supply, England 2008 and 2013

Thousand households/ row percentage/ column percentage/ (sample size)

Year	Household type	Mains gas	Likely distance from grid where no mains gas					Total (Sample)	
			<23m	23-50m	50-500m	0.5-2km	>=2km		
2008	Childless couple < 60 years	3,669 89.8 19.5						417 10.2 15.9	4,085 (2487) 19.1
	Childless couple 60 years plus	2,974 87.1 15.8						440 12.9 16.7	3,414 (2514) 15.9
	Couple with dependent children	4,245 91.5 22.6						396 8.5 15.0	4,641 (3316) 21.7
	Lone parent dependent children	1,287 91.6 6.9						118 8.4 4.5	1,405 (1496) 6.6
	Other multi-person households	1,491 90.9 7.9						149 9.1 5.7	1,640 (1207) 7.7
	One person < 60 years	2,302 80.9 12.3						544 19.1 20.7	2,846 (1904) 13.3
	One person 60 years plus	2,809 83.2 15.0						567 16.8 21.6	3,376 (2599) 15.8
	Total hholds	18,805						2,602	21,407
	(Sample size)	87.8 (13655)						12.2 (1868)	100.0 (15,523)
	2013	Childless couple < 60 years	3,728 89.1 18.7	206 4.9 15.5	72 1.7 19.5	80 1.9 23.4	31 0.7 12.8	66 1.6 16.3	4,183 (1778) 18.5
		Childless couple 60 years plus	3,473 86.7 17.5	174 4.3 13.0	72 1.8 19.5	63 1.6 18.3	91 2.3 37.8	134 3.4 33.0	4,006 (1787) 17.7
		Couple with dependent children	4,313 91.4 21.7	138 2.9 10.4	44 0.9 11.7	69 1.5 20.1	44 0.9 18.2	112 2.4 27.5	4,719 (2509) 20.9
Lone parent dependent children		1,531 93.6 7.7	59 3.6 4.4	12 0.7 3.2	17 1.0 5.0	7 0.4 2.7	10 0.6 2.4	1,635 (1373) 7.2	
Other multi-person households		1,675 90.7 8.4	98 5.3 7.3	34 1.8 9.1	8 0.4 2.3	13 0.7 5.2	20 1.1 4.9	1,847 (974) 8.2	
One person < 60 years		2,282 81.9 11.5	354 12.7 26.6	63 2.3 17.0	41 1.5 11.9	22 0.8 9.1	26 0.9 6.5	2,788 (1589) 12.3	
One person 60 years plus		2,891 84.9 14.5	303 8.9 22.8	74 2.2 19.9	65 1.9 19.0	34 1.0 14.2	38 1.1 9.4	3,405 (1998) 15.1	
Total hholds		19,893	1,331	371	341	240	407	22,583	
(Sample size)		88.1 (10645)	5.9 (717)	1.6 (193)	1.5 (174)	1.1 (113)	1.8 (166)	100.0 (12008)	

Annex 7: Methodology

(prepared by Richard Moore)

A7.1 Introduction

This Annex explains how the statistics for assessing homes without mains gas heating and off the gas grid were produced for each country.

The Report updates an analysis first undertaken in 2011 of data from the 2008 English Housing Survey (EHS), 2007-09 Scottish House Condition Survey (SHCS), 2008 Living in Wales (LIW) Survey and 2005 Transco Gas Postcode File using the latest comparable data available from the 2013 EHS, 2012-14 SHCS and 2015 Non-gas Map. As well as providing the updated statistics, the Report also presents the figures from the original 2011 Report¹ to enable trends in the distribution of non-gas consumers to be directly assessed. The main sources of data used for both the original and new analyses are detailed in Table A7.1.1 below.

¹ William Baker (2011) Off-gas consumers: Information on households without mains gas heating, London, Consumer Focus, September 2011.

Wherever appropriate the same methodology and derived variables as used in the previous analysis have been replicated; the main differences are detailed in this Annex and can be summarised as follows:-

- 1) With no house condition survey undertaken in Wales since 2008, most of the original LIW physical and social data has been updated using 2011 Census data.
- 2) Household incomes and fuel poverty estimates for Wales have been projected forward to 2011 using the Building Research Establishment's (BRE) Wales Fuel Poverty Projection Tool.
- 3) The off-gas data from the 2005 Transco Gas Postcode File used in 2011 has been replaced with new, more detailed data on the availability of mains gas obtained from the 2015 Non-gas Map² and matched to the SHCS, EHS and LIW samples by postcode.

² DECC, Kiln and Affordable Warmth Solutions (2015), *The non-gas map: FAQ and data info*, available at <https://www.nongasmap.org.uk>.

Table A7.1.1: Main data sources used in the 'non-gas' analyses of 2011 and 2016

Survey/Files	Coverage	Usable sample size	Fieldwork dates	Nominal analysis date
English Housing Survey 2008 (EHS)	England	15,523 households	April 2007 to March 2009	April 2008
Scottish House Condition Survey 2007/09 (SHCS)	Scotland	9,394 households	2007, 2008 and 2009	June 2008
Living in Wales Survey 2008 (LIWS)	Wales	2,741 households	January 2008 to May 2008	March 2008
Transco Gas Postcode file	Great Britain	(1,288,167 postcodes)	c. 2005	c. 2005
English Housing Survey 2013 (EHS)	England	12,008 households	April 2012 to March 2014	April 2013
Scottish House Condition Survey 2012/14 (SHCS)	Scotland	8,194 & 8,008 ¹ households	2012, 2013 and 2014	June 2013
Living in Wales Survey (LIW) Update, 2011	Wales	2,741 households	2011 Census 27 March 2011	March 2011
2015 Non-gas Map Non-gas % & distance data	Great Britain	(1.7 million postcodes)	2013	2013

¹ Smaller sample size used for fuel poverty estimates only.

A7.2: Updating the 2008 Living in Wales Survey Data using the 2011 Census

A7.2.1 Introduction

In Wales, the last comparable survey to the English Housing Survey (EHS) and Scottish House Condition Survey (SHCS), that is a survey combining both an interview survey of households with a physical survey of their dwellings, was the Living in Wales (LIW) survey of 2008. After 2008, the LIW survey was replaced by the National Survey of Wales (NSW), which has been purely a social survey concerned primarily with determining people satisfaction and views on public services, although a new Welsh house condition survey is planned for 2017/18.

The last nationwide survey collecting details on the physical characteristics of the housing stock in Wales was the 2011 Census and this has been used to update the relevant data in the 2008 LIW survey. Comprising a survey of all households, the Census statistics are uniquely accurate and are widely used as the basis for grossing such sample surveys to national and regional housing stock totals.

A7.2.2 Relevant 2011 Census data

The latest 2011 Census data includes a number of key variables such as on tenure, urban and rural location, dwelling type and household composition, which while not always identical to the existing variables in the LIW survey, can be replicated using the data collected in the latter survey. The most relevant 2011 Census variable to the current project provides data on the type of central heating in the dwelling, the derived categories being:-

1. No central heating;
2. Gas CH;
3. Other CH (including LPG, bottled gas and solar);
4. Oil CH;
5. Solid fuel CH (e.g. wood and coal),
6. Electric CH (including storage heaters) and
7. Two or more systems.

The ONS Nomis website provides an interactive facility for the Census variables to be combined into tables, at any of a number of different geographical levels, including for each of the 22 local authority districts in Wales. Unfortunately for most tables, such as for 'Accommodation [dwelling] type by

*type of central heating in household by tenure*³, the central heating variable has, in fact, been pre-banded into simply 'Does not have central heating' and 'Does have central heating'. The only cross-tabulation that can be generated giving the full types of central heating is by location, this variable having the following urban and rural classifications⁴:-

- > Urban major conurbation
- > Urban minor conurbation
- > Urban city and town
- > Urban city and town in a sparse setting
- > Rural town and fringe
- > Rural town and fringe in a sparse setting
- > Rural village
- > Rural village in a sparse setting
- > Rural hamlet and isolated dwellings
- > Rural hamlet and isolated dwellings in a sparse setting

Special tables can be commissioned from ONS, but only for a significant additional cost and time. These commissioned tables are made publically available. However, we are informed by the ONS Census team, that only one table has been commissioned containing the full central heating variable and that was for type of central heating by accommodation (dwelling) type and for the whole of England and Wales

A7.2.3 Re-grossing the LIW data

Just as the 2008 LIW survey was originally grossed to the national stock estimates for 2008, so for the current project, the LIW data has been re-grossed to the 2011 Census figures. Traditionally, the main variables used to gross national house condition survey data have been region and tenure, although for household estimates, age and sex are also used.

To re-gross the 2008 LIW survey, Census data for each of the 22 local authority districts has been obtained, but re-banded to be broadly compatible with the Welsh Assembly Economic Fora Areas used in the 2011 Consumer Focus Off-gas Report. The current grossing regions differ from the Fora areas in including the sparsely populated southern part of Gwynedd in North Wales rather than Mid Wales and in splitting the more densely populated South-East Wales into Cardiff and its surrounding districts and the remaining 5 eastern districts, proposed as one of the 8 new councils for Wales. The local authority districts and number of households recorded by the 2011 Census in each grossing region are listed in Table A7.2.1.

³ Nomis (2013), *Accommodation type by type of central heating in household by tenure*, Table ID DC4402EW.

⁴ Nomis (2013), *Central heating*, Table ID QS415EW.

Table A7.2.1: Composition of regions used for re-grossing

Local authority: district / unitary (prior to April 2015)	2011 households	Local authority: district / unitary (prior to April 2015)	2011 households
1) North Wales total	295,600	4) South East Wales – South	378,504
Anglesey	30,594	Bridgend	58,515
Gwynedd	52,473	The Vale of Glamorgan	53,505
Conwy	51,177	Cardiff	142,557
Denbighshire	40,546	Rhondda, Cynon, Taff	99,663
Flintshire	63,781	Merthyr Tydfil	24,264
Wrexham	57,029	5) South East Wales – East	242,824
2) Mid Wales total	89,907	Caerphilly	74,479
Powys	58,345	Blaenau Gwent	30,416
Ceredigion	31,562	Torfaen	38,524
3) South-West Wales total	295,841	Monmouthshire	38,233
Pembrokeshire	53,122	Newport	61,172
Carmarthenshire	78,829		
Swansea	103,497		
Neath Port Talbot	60,393	Wales national total	1,302,676

Similarly, for the re-grossing, the urban and rural classifications in the Census have been banded into the following 4 categories, no areas in Wales being classified in 2011 as either a major or minor conurbation. With the Census definition of urban being areas with a population of over 10,000, these four areas mirror the four main urban/ rural classifications used in the 2008 LIW survey, namely:-

1. Urban city and town > 10,000 population.
2. Rural town and fringe
3. Rural village
4. Rural hamlet and isolated dwellings

To overcome the limited availability of Census data providing the full breakdown of types of central heating, the re-grossing has been done in four separate stages. Firstly, a new LIW central heating variable has been computed to exactly match the full 2011 Census CH variable. Then, for each of the 5 regions listed in Table A7.2.1, both the 2011 Census and 2008 LIW household numbers for the 7 categories of central heating in each of the 4 types of urban or rural areas has been determined. The 140 factors which inflate or deflate the 2008 LIW estimates to give the 2011 Census figures have then been determined and the LIW survey weights then adjusted by this factor to provide a first temporary new weighting variable.

For the second stage in the re-grossing, a Census table was generated from the following tenure classifications combined with whether or not the household had central heating.

1. Owned: owned outright;
2. Owned: Owned with a mortgage or loan or shared ownership;
3. Social rented: Rented from council (Local Authority);
4. Social rented: Other social rented;
5. Private rented: Private landlord or letting agency;
6. Private rented: Other private rented or living rent free.

The Census figures for the last two categories were combined to give a single private rented category and, for the purpose of the re-grossing, the LIW tenure variable revised to exactly match this shortened Census variable. The number of households in each of the 5 tenures with and without central heating were determined for the 2011 Census and for the LIW survey now using the first new temporary grossing weights. These weights were then further adjusted to give the 2011 Census figures for the number of households in each tenure that lack central heating.

For households with central heating, the number of households in each tenure with each type of central heating was first determined, again using the initial temporary LIW survey weights. These figures were then adjusted in further stages such that both the total number of households in each tenure and the total number with each type of central heating were comparable with the totals given by the 2011 Census. The resulting adjusted estimates for the number of households in each tenure with each type of central heating was then used to revise the temporary grossing weights to complete the second set of temporary weights for 2011.

In the third stage, these further temporary weights were used to match the LIW data to the Census figures for the accommodation types in each tenure with and without central heating. The 2011 Census categories for accommodation type are:-

1. Detached house or bungalow;
2. Semi-detached house or bungalow;
3. Terraced house or bungalow (including end of terrace);
4. Flat or maisonette in a purpose-built block;
5. Flat or maisonette in a converted house (including bedsits);
6. Flat or maisonette in a commercial building or temporary accommodation.

To further re-adjust the LIW estimates, the Census figures for the last two categories were combined and compared with the LIW data for the same five dwelling categories cross-tabulated with the five

tenure categories and the presence or absence of central heating. This produced a third set of 50 adjustment factors and temporary weights, which in the final fourth stage were yet further adjusted to re-instate the perfect match with the Census central heating variable and provide the final new grossing weights for the LIW survey.

A7.2.4 Validation of final new LIW weights

In the following tables, the updated LIW figures for 2011, produced using the final LIW weights, are compared with both the original 2008 LIW estimates and the equivalent 2011 Census figures for a number of key variables.

As expected, the closest match between the updated LIW survey estimates and the 2011 Census statistics occur for the variables used in the final re-grossing stages. Thus, Tables A7.2.2, 3 and 4 confirm

Table A7.2.2: Central heating in the 2008 LIW, updated LIW survey and 2011 Census

Central heating	2008 LIW survey		2011 LIW update		2011 Census	
	Hholds k	%	Hholds k	%	Hholds k	%
No central heating	33	2.6	30	2.3	30	2.3
Gas central heating	940	74.1	994	76.3	994	76.3
Other CH (LPG etc)	20	1.6	12	0.9	12	0.9
Oil CH	137	10.8	114	8.7	114	8.7
Solid fuel CH	27	2.1	25	1.9	25	1.9
Electric (storage etc)	52	4.1	72	5.5	72	5.5
Two + systems	59	4.6	57	4.4	57	4.4
Total households k	1,268	100.0	1,303	100.0	1,303	100.0

Table A7.2.3: Tenure in the 2008 LIW, updated LIW survey and 2011 Census

Tenure	2008 LIW survey		2011 LIW update		2011 Census	
	Hholds k	%	Hholds k	%	Hholds k	%
Owned outright	498	39.3	460	35.3	461	35.4
Owned mortgage	432	34.0	425	32.6	422	32.4
Rented from LA	140	11.0	127	9.7	128	9.8
Rented from RSL	84	6.6	87	6.7	87	6.6
Private rented	115	9.0	204	15.6	205	15.7
Total households k	1,268	100.0	1,303	100.0	1,303	100.0

Table A7.2.4: Dwelling type in the 2008 LIW, updated LIW survey and 2011 Census

Dwelling type	2008 LIW survey		2011 LIW update		2011 Census	
	Hholds k	%	Hholds k	%	Hholds k	%
Detached	359	28.3	356	27.3	361	27.7
Semi-detached	389	30.7	417	32.0	414	31.8
Terrace	414	32.6	364	28.0	361	27.7
Purpose built flat	84	6.7	121	9.3	124	9.5
Converted flat etc	22	1.7	44	3.4	42	3.3
Total households k	1,268	100.0	1,303	100.0	1,303	100.0

that there is a perfect match with the Census on the type of central heating and near perfect matches on tenure and on accommodation or dwelling types.

Compared to the original 2008 LIW survey, the 2011 Census and updated LIW data show an increase in electric central heating, some of which is probably due to the large increase in new purpose built flats for sale or privately renting which characterised this period (as confirmed in Table A7.2.4) as well as possible survey errors in 2008.

This new flatted accommodation could account for some of the increase in private renting shown in Table A7.2.3, but the fall in owner occupation is higher than suggested by the Welsh Government's official statistics⁵. As well as a real fall, survey errors (such as a confusion between owning outright and renting free) and the 2008 grossing may also account for the differences. Surveyors incorrectly coding semi-detached dwellings as end of terrace and vice versa was a major problem in the early years of the EHCS and this could have occurred in the 2008 LIW to produce, along with real demolitions, the apparent anomalies shown in Table A7.2.4.

Despite being in the first stage of the re-grossing, the match with region was maintained by the further grossing adjustments and again provides a near perfect match with the 2011 Census when grossed using the final weighting factors. The

⁵ Welsh Government (2016), *Dwelling stock estimates by local authority and tenure*, StatsWales. These show a 2% fall in the total number of owner occupied homes in Wales between 2007/08 and 2010/11.

updated LIW distribution for the location, also used in the first stage of the re-grossing, is marginally less accurate, but still very close to the 2011 Census figures. The final regional and locational distributions are shown in Tables A2.5 and 6.

With confirmation provided by Table A7.2.6, Table A7.2.5 indicates that there has been a significant rural depopulation in Wales since 2008, particularly from Mid and South West Wales, with corresponding increases in the urban areas of the South East and to a lesser extent in North Wales.

As with the original grossing of the 2008 LIW survey, any variables not used in the re-grossing are likely to be less closely matched to the Census figures. In the validation using these variables, one is looking for a reasonable match, rather than the necessarily close match achieved in the above variables. Distributions should be similar, with hopefully no major differences in the order of the updated LIW survey and 2011 Census frequencies. Here, any matches as close as those found in Table A7.2.2 to 6 can be treated as a bonus.

Table A7.2.7 looks at the distribution of dwelling sizes, using the number of bedrooms as a proxy. Although recording significantly more 1 bedroomed dwellings than the 2008 LIW estimates, the updated data still underestimates the proportion of such small dwellings compared to the 2011 Census. The final re-grossing does provide a reasonably close match to the Census figures for all other dwelling sizes, the compatibility generally improving with the number of bedrooms.

Table A7.2.5: Region in the 2008 LIW, updated LIW survey and 2011 Census

Region	2008 LIW survey		2011 LIW update		2011 Census	
	Hholds k	%	Hholds k	%	Hholds k	%
North Wales	273	21.6	295	22.7	296	22.7
Mid Wales	104	8.2	90	6.9	90	6.9
South-West Wales	358	28.2	296	22.7	296	22.7
South-East Wales	533	42.0	621	47.7	621	47.7
Total households k	1,268	100.0	1,303	100.0	1,303	100.0

Table A7.2.6: Location in the 2008 LIW, updated LIW survey and 2011 Census

Location	2008 LIW survey		2011 LIW update		2011 Census	
	Hholds k	%	Hholds k	%	Hholds k	%
Urban city or town	775	61.1	874	67.1	872	67.0
Rural town & fringe	214	18.9	204	15.6	210	16.2
Rural village	178	14.0	137	10.5	134	10.3
Hamlet & isolated	102	8.1	88	6.8	86	6.6
Total households k	1,268	100.0	1,303	100.0	1,303	100.0

For the household variables, Table A7.2.8 compares the distributions of different household compositions in the 2008 LIW survey, for the updated LIW data and in the 2011 Census. Compared to the 2001 Census, the updated LIW data tends to underestimate the number of single person households below pensionable age and over-estimate the number of pensioner couples, but are close or reasonably close for all other household types, being particularly accurate for lone pensioners, lone parents and families with only non-dependent children.

The new grossing slightly overestimates the number of household reference persons (HRP) that are middle aged and underestimates those 75 years old or more. However, for all other ages the estimates are close to the 2011 Census figures. Table A7.2.9 also shows that the updated LIW survey also slightly overestimates the number of male relative to female HRPs, although again the differences are well within the bounds of acceptability. These over and under-estimations tend to reflect the distributions in the original 2008 LIW survey data.

Table A7.2.7: Bedroom numbers in the 2008 LIW, updated LIW survey and 2011 Census

No. of bedrooms	2008 LIW survey		2011 LIW update		2011 Census	
	Hholds k	%	Hholds k	%	Hholds k	%
No bedrooms	0	0	0	0	2	0.2
1 bedroom	62	4.9	78	6.0	99	7.6
2 bedrooms	291	22.9	326	24.9	316	24.2
3 bedrooms	677	53.4	658	50.5	637	48.9
4 bedrooms	188	14.8	190	14.6	196	15.0
5 or more bedrooms	51	4.0	51	3.9	53	4.0
Total households k	1,268	100.0	1,303	100.0	1,301	100.0

Table A7.2.8: Household composition in 2008 LIW, updated LIW survey and 2011 Census

Household composition	2008 LIW		2011 LIW update		2011 Census	
	Hholds	%	Hholds	%	Hholds	%
1 person households >= 65 yrs	177	14.0	176	13.5	178	13.7
1 person households < 65 yrs	166	13.1	181	13.9	222	17.1
Couples etc >= 65 years	145	11.5	142	10.9	120	9.2
Other couples etc, no children	272	21.5	289	22.2	276	21.2
Lone parents	139	11.0	146	11.2	148	11.4
Family with dependent child/s	269	21.2	279	21.4	269	20.6
Family, non-dependent child/s	100	7.9	90	6.9	89	6.8
Total households k	1,268	100.0	1,303	100.0	1,303	100.0

Table A7.2.9: Age and sex of HRP in the 2008 LIW, updated LIW survey and 2011 Census

Age and Sex of HRP	2008 LIW survey		2011 LIW update		2011 Census	
	Hholds k	%	Hholds k	%	Hholds k	%
16 to 24 years	36	2.9	51	3.9	49	3.8
25 to 34 years	149	11.8	172	13.2	165	12.7
34 to 49 years	344	27.1	360	27.7	356	27.3
50 to 64 years	391	30.9	380	29.2	357	27.4
65 to 74 years	196	15.5	187	14.4	185	14.2
65 years or more	151	11.9	152	11.7	191	14.7
Male	766	60.4	783	60.1	766	58.8
Female	503	39.6	519	39.9	537	41.2
Total households k	1,268	100.0	1,303	100.0	1,303	100.0

Table A7.2.10: Employment status of HRP in 2008 LIW, updated LIW and 2011 Census

Employment status	2008 LIW		2011 LIW update		2011 Census	
	Hholds	%	Hholds	%	Hholds	%
Employee working full-time	452	35.7	480	36.9	506	38.8
Self-employed full-time	85	6.7	88	6.8	108	8.3
Total working part-time	156	12.3	161	12.4	144	11.0
Unemployed	38	3.0	37	2.8	39	3.0
Long-term sick or disabled	89	7.0	87	6.7	89	6.9
Student or home-keeper	34	2.7	46	3.5	49	3.7
Fully retired (incl. retired early)	414	32.6	403	31.0	368	28.3
Total households k	1,268	100.0	1,303	100.0	1,303	100.0

For employment status, it is difficult to exactly replicate some of the 2011 Census categories, but where this is possible there again appears reasonable agreement with the data from the updated LIW survey. The final table A7.2.10 provides these further comparisons.

A7.2.5 Conclusions

Given the close match with the 2011 Census statistics generally achieved over all of the above key variables, it is possible that in some respects the updated LIW data is more accurate than the original 2008 survey data. Although some of the variables used in the Report vary slightly from those used in the 2011 Census and thus adopted in this validation, this level of accuracy is likely to be maintained in all of the equivalent updated non-gas statistics for Wales.

The differences between the 2008 LIW survey distributions and those for the 2011 Census and thus updated LIW estimates, are probably due to a combination of real changes (such as in the increased proportion of purpose built flats and lower rural populations), combined with the different survey grossing weightings and possible 2008 survey errors.

A7.3 Use of the Wales Fuel Poverty Projection Tool

A7.3.1 Introduction

In addition to updating the LIW data using the 2011 Census data, the BRE Wales Fuel Poverty Projection Tool (WFPPT)⁶ has been used, not only to update the LIW fuel poverty figures, but also household incomes. As the full ‘unlocked’ version of this Tool is not publicly

available and the model needed modification to breakdown the outputs by the main heating fuels and the non-gas map data, BRE were commissioned (under a sub-contract) to provide the 2011 LIW projections for household incomes and fuel poverty. The fuel costs generated and used to calculate fuel poverty are substantially different to those used in the determination of SAP and EPC ratings and therefore the WFPPT is not suitable for producing the energy efficiency and housing standard data for Wales⁷.

In updating the LIW survey incomes and fuel poverty estimates, no further adjustments to the survey grossing factors are made beyond those already stated. Inflation factors for incomes and fuel prices and the uptake of energy efficiency measures are used to project household incomes and numbers in fuel poverty forward from 2008 to 2011 for the distribution of dwellings and households as provided by the updated LIW data, based on the 2011 Census statistics.

A7.3.2 Updating household incomes

In the Projection Tool, income is inflated at different rates according to its source i.e. whether it is employment income or income from benefits, pensions, savings etc⁸. Thus, earned income is updated using the ‘whole economy’ figures on the ‘Regular Pay’ tab of the ONS Average Weekly Earnings (AWE) tables⁹, while all other income is inflated in accordance with the Retail Price Index (RPI) and Consumer Price Index (CPI) using the ONS Monthly Reference Tables¹⁰.

6 Davies, R/BRE (2013), *Wales Fuel Poverty Projection Tool – 2011 and 2012, report*, Welsh Government, Government Social Research, No: 18/2013, Cardiff, 3013, available at <http://www.gov.wales/statistics-and-research/wales-fuel-poverty-projection-tool/?lang=en>.

7 BRE (2016), email to author, 06/05/2016.

8 BRE (2012), *Wales Fuel Poverty Projection Tool – Documentation of Model*, Cardiff, Welsh Assembly Government, 31 August 2012.

9 <http://www.ons.gov.uk/taxonomy/index.html?nscl=Earnings>; EARN01: Average Weekly Earnings, AWE Regular Pay tab, Table KA19.

10 <http://www.ons.gov.uk/taxonomy/index.html?nscl=Consumer+Price+Indices>; Detailed CPI and RPI Reference Tables, Table 21.

Income from employment of the household reference person (HRP) and any partner is increased in line with the AWE index by 5.4%, while any other income of the primary benefit unit from benefits, pensions, savings etc is inflated with inflation by 6.3% between 2008 and 2011. Since April 2011, benefit income has been linked to the CPI rather than the RPI, therefore the inflation rates for Other Income were calculated using CPI rather than RPI after this date.

Under the WFPPT methodology, additional household income, for example, from other benefit units such as independent children living at home, is treated as Other Income¹¹ and is therefore increased in line with RPI/CPI rather than the AWE index. The effect of treating additional household income as earned income or other income on fuel poverty is likely to be marginal, particular for those lower income households, mainly reliant on pensions or benefits, who are most likely to be at risk of fuel poverty.

The new income projections were finally cross-tabulated with the updated 2011 LIW data on main heating fuels and the availability of mains gas to provide the required income statistics.

A7.3.3 Updating the fuel poverty figures

The modified version of the original full Projection Tool was also employed to supply updated figures for fuel poverty in Wales. As well as inflating full household incomes, the Tool updates the fuel costs by (a) assuming improvements in the energy efficiency of the housing stock, compatible with the take up of nine energy measures between 2008 and 2011 and (b) by applying changes in fuel prices over this period.

The nine energy measures used in the model comprise loft, cavity wall, solid wall and tank insulation, double glazing, solar hot water, condensing boilers, central heating and solar PV. The fuel prices for gas, electricity, oil (including LPG and bottled gas) and all solid fuels were inflated from 2008 to 2011 using the monthly RPI tables¹².

Fuel poverty projections for both the 10% full income definition, used by the Welsh Government, and for the Low income/High Costs (LIHC) indicator were produced. As with the income projections, these were also cross-tabulated with the updated 2011 LIW data on main heating fuels to provide the required fuel poverty statistics.

BRE have recently updated their fuel poverty modelling tool for Wales. The new modelling produces an estimate of 364k, or 29% of all households fuel poor in 2012; the original methodology gave a headline figure of 386k, or 30% of all households, in fuel poverty in 2012¹³. The reduction in the 2012 estimate using the new modelling is due to the use of the latest version of BRE's domestic energy model, BREDEM 2012, changes to the heating regimes (to match those used in the definition of fuel poverty for Scotland), improved targeting of energy efficiency measures and the addition of Warm Homes Discount in the revised modelling. The level of fuel poverty in 2012 is estimated to be significantly higher from the equivalent 2011 estimates following some large fuel price rises.

A7.4 Matching the Non-gas Map Data to the House Condition Survey Samples

A7.4.1 Introduction

For nearly all full postcode in Great Britain, the *Non-gas Map*¹⁴ provides the number of properties in each postcode, the percentage and total number of 'non-gas' properties and the number of these which are within 23 metres, 50 metres, 500 metres and 2 km of the gas distribution network.

Most postcodes record one clearly predominant distance for dwellings without gas, often with all non-gas dwellings falling in a single band. In urban areas, the vast majority of non-gas dwellings are in blocks of flats (some with their own postcode) which are generally all located at, for example, either <23m or 23-50m from the gas grid. Similarly, in rural areas, all the dwellings in hamlets off the grid are also frequently all located at a common distance, for example, either between 0.5 and 2km or over 2km from the gas grid.

Consequently, after matching the non-gas map data to the EHS and SHCS samples by postcode, each sample non-gas dwelling can be assumed to be at the predominant or most frequent/most common distance from the grid of all non-gas

¹¹ BRE (2016), email to author, 21/06/2016.

¹² BRE (2012).

¹³ BRE (2016), The Production of Estimated Levels Of Fuel Poverty in Wales: 2012-2016, Welsh Government, Government Social Research, No. 40/2016, Cardiff, 11/07/2016: see Table 13 and paras. 4.8 & 4.9, available at <http://gov.wales/docs/coecd/research/2016/160711-production-estimated-levels-fuel-poverty-wales-2012-2016-en.pdf>

¹⁴ DECC, Kiln and Affordable Warmth Solutions (2015), *The non-gas map*: FAQ and data info, available at <https://www.nongasmap.org.uk>.

Table A7.4.1. Use of non-gas map postcode data to estimate distance from grid.

Non-gas map data for postcode	Cumulative figures given by database	Dwellings in each category
<i>With gas supply</i>	-	17
No gas supply < 23m :< 23m from gas grid	3	3
< 50m :23-50m from grid	3	0
< 500m :50-500m from grid	3	0
< 2km :0.5-2km from grid	15	12
All :2km or more from grid	15	0
Total properties	32	32

Table A7.4.2. Raw non-gas map postcode data after matching to survey sample

Address code/uprn	Total all Property	No-gas %	Raw non-gas map cumulative distance data				
			<23m	< 50m	< 500m	< 2 km	No-gas
111111110	32	46.9	3	3	3	15	15
111111111	16	50.0	2	2	8	8	8
111111112	45	11.1	5	5	5	5	5
111111113	12	0.0	0	0	0	0	0
111111114	72	22.2	8	16	16	16	16
111111115			[No match/missing data].				
111111116	38	31.6	8	11	12	12	12
111111117	18	77.8	3	12	14	14	14
111111118	17	100.0	0	0	0	8	17
111111119	36	0.0	0	0	0	0	0

Table A7.4.3. Derived non-gas map data

Address code/uprn	Total all property	Withgas	Derived non-gas map distance data				
			dlt23m	d23_50m	d50-500m	d0.5_2km	dge2km
111111110	32	17	3	0	0	12	0
111111111	16	8	2	0	6	0	0
111111112	45	40	5	0	0	0	0
111111113	12	12	0	0	0	0	0
111111114	72	56	8	8	0	0	0
111111115			[No match/missing data]..				
111111116	38	26	8	3	1	0	0
111111117	18	4	3	9	2	0	0
111111118	17	0	0	0	0	8	9
111111119	36	36	0	0	0	0	0

properties in that postcode. For example, in Table A7.4.1, a sample dwelling in this gas postcode, but with no gas supply, is most likely to be at between 0.5 and 2 km from the gas grid.

This assumption is unlikely to be correct for every single case, but should be robust over any reasonably large sample of survey cases, any underestimations of distance generally cancelling out any overestimations. Therefore, the derived variable is a 'proxy' for the actual distance from the gas grid, but we believe a very good proxy, the accuracy of which can be rigorously tested, as described later in this paper.

A7.4.2 Deriving a non-gas variable for Great Britain

In addition to the cumulative figures shown in Table A7.4.1, the *Non-gas map* also provides a figure for the total % of non-gas properties in each postcode. This can be used, with the cumulative distance figures and the survey data on whether the dwelling has a gas supply, to compute a single variable indicating the most likely distance of each non-gas survey property from the gas grid. This off-gas variable would comprise 7 main categories, as follows:-

- 0. Mains gas only
- 1. < 23m from gas grid
- 2. 23-50m from grid
- 3. 50-500m from grid.
- 4. 0.5-2km from grid
- 5. Over 2km from grid
- 9. Not known

Although comparatively rare, where high numbers of non-gas dwellings occur at two or more distances from the gas grid, for example, at both 23-50m and 50-500m, it is helpful to know the second most likely distance for non-gas properties where this contained a comparable number of properties as the most likely distance.

Table A7.4.2 to 5 shows the stages in converting the raw off-gas map data into a single new non-gas distance variable over ten different survey cases, the first case being the same example as shown in Table A7.4.1. In Tables A7.4.2 and 3, the missing data indicates that no match with the survey sample postcode can be found in the non-gas map dataset. The figures in Table A7.4.3 do not actually need to be displayed and are only shown here to illustrate how the interim and final non-gas variables (shown in Tables A7.4.4 and 5) are derived.

The actual matching of the non-gas map data to

the SHCS, EHS and LIW samples was undertaken, respectively by the Government analysts in the SHCS team, in BEIS and the research team at Ipsos MORI. To minimise the work for these analysts and to enable a rigorous validation and testing of the matched data by ourselves, where the map postcodes included non-gas dwellings, three interim non-gas variables indicating the most likely distances of such dwellings from the gas grid were provided to us, regardless of whether the actual sample survey dwelling was a non-gas dwelling or not.

As shown in Table A7.4.4, these interim variables indicate for each matched postcode:-

1. The most likely distance of any non-gas property from the gas grid (i.e. the distance containing the most non-gas properties); and
2. The second most likely distance (i.e. the distance containing the second highest number of non-gas properties) where this is as likely or almost as likely as the first to contain a non-gas sample dwelling.

These two output variables conceal both the actual number of properties in any postcode and the number of distances from the grid with any non-gas properties. Thus, they are designed to avoid any possible identification of the actual non-gas map postcode against which the sample dwelling has been matched and thereby any risk of identifying a particular survey address.

As also illustrated in Table A7.4.4, to validate the data consistently across Great Britain, we also required the non-gas map variable on the percentage of non-gas properties in each postcode. Again, to avoid any risk of disclosure, this was provided after it has first been recoded into just five broad categories as follows:-

1. Gas properties only (0%)
2. Mostly gas properties (0.1 to 49.9%)
3. Mostly non-gas properties (50.0 to 99.9%)
4. Non-gas properties only (100%)
9. Not known

We, therefore, asked the SHCS and EHS teams to provide, for the full 2012-14 SHCS and 2013 EHS samples, the data illustrated in Table A7.4.4. To ensure a consistent methodology, the syntax needed to compute these required new variables, after the postcode data matching, was provided to each survey team.

Table A7.4.4. Matched non-gas map output variables.

Address code/uprn	% of Non-gas	Most likely distance	2nd likely distance	Percentage of non-gas properties
111111110	2	4	7	1. Gas only
111111111	3	3	7	2. Mostly gas
111111112	2	1	7	3. Mostly non-gas
111111113	1	0	7	4. Non-gas only
111111114	2	1	2	9. Not known
111111115	9	9	9	
111111116	2	1	7	2nd Likely distance
111111117	3	2	7	7. Not applicable, as not comparable to most likely
111111118	4	5	4	9. Not known
111111119	1	0	7	

Table A7.4.5. SHCS mains services variable and final new non-gas variable

SHCS (L1) Mains services	Final non-gas distance variable	Likely non-gas distance categories
1	4	0. Gas only
1	3	1. < 23m from grid
2	0	2. 23-50m from grid
2	0	3. 50-500m from grid
1	2	4. 0.5-2km from grid
2	0	5. >= 2km from grid
1	1	9. Not known
2	0	SHCS (variable L1) Mains services
1	5	1. Electricity only
2	0	2. Electricity and gas
		3. Gas only

As illustrated in Table A4.4, on its receipt, we validated the output data by matching these to the information on mains services provided by each survey and tested the results, as described below, to produce a final single non-gas distance variable as shown in Table A7.4.5.

A7.5 Matching the Non-gas Map Data for Scotland

A7.5.1 Validation of the SHCS matched data

As every SHCS sample dwelling has received a detailed physical survey from a qualified surveyor, it is reasonable to assume that the survey data on the presence of a mains gas supply and gas usage are more reliable than those provided by the non-gas map. Although in practice this assumption appears questionable in certain cases,

it is nevertheless applied in validating the matched non-gas map data, in order to achieve compatibility with all the other related statistics based on the SHCS data.

There is no non-gas map distance data for 3 of the 32 local authority areas in Scotland, Eilean Siar (the Western Isles), Orkney and Shetland Islands. As a default, the SHCS team have coded the sample dwellings in these areas as having mains gas. However, as the 2011 Census based neighbourhood statistics shows none of dwellings in these areas have mains gas heating, these cases are re-classified as missing data.

Elsewhere, the SHCS team achieved a postcode match with the non-gas map data in all but six (or less than 0.1%) of the remaining 7,487 sample addresses in the 2012-14 SHCS. As two of these cases are recorded in the SHCS as having a mains

gas supply, under 0.2% of the sample of 2,144 non-gas dwellings has no matched data. However, in nearly 10% of the sample, the non-gas map showed all the properties in a matched postcode to have mains gas where the SHCS clearly records no mains gas supply in the sample dwelling. Conversely, there are two dwellings where the SHCS records a gas supply, but the non-gas map shows the matched postcode as having all non-gas properties.

A7.5.2 Treatment of missing data

The full characteristics of all non-gas dwellings are known from the 2012-14 SHCS sample and these can be analysed with reference to their distances from the gas grid for the vast majority of dwellings. Consequently, reasonable assumptions can be made with respect to the missing non-gas map data in order to provide full statistics on gas availability.

The four non-gas dwellings, where no postcode match was achieved, include three flats in tower/slab blocks in the City of Glasgow, two of which are in the private rented sector and the other housing association owned. As the most likely distance from the gas grid is under 23 metres for over 71% of all other privately rented and nearly 68% of housing association owned non-gas flats in tower/slabs located in the largest Scottish cities, this distance was allocated to these three missing cases.

The remaining non-gas case with no matched data is a detached dwelling in a rural part of South Ayrshire which is owned outright. As the most frequent likely distance from the grid is over 2 kilometres for all other detached rural dwellings in this region of Scotland which are owned outright, this distance was allocated to this final case.

For the Islands with missing data and where the SHCS shows no gas supply in the dwelling in postcodes recorded by the non-gas map as having all gas properties, distances from the grid are allocated using a very similar but slightly more sophisticated methodology. Firstly, the characteristics of the sample dwellings are determined in terms of their region, urban or rural location, dwelling type, construction date and tenure and then the missing data distributed as for the large majority of non-gas dwellings in the same region with the same characteristics which have non-gas map distance data.

In any region where there is no clearly predominant distance for any particular dwelling type, the missing cases are distributed across two or more distances, using the last three digits of the address code to split the sample randomly in the same proportion as the majority of cases where the non-gas map distances are known.

A7.5.3 Comparison of the SHCS matched data with the original non-map gas data

To test the resulting data, the validated matched non-gas map data for Scotland was compared with the original non-gas map data at regional level. The number and distance data provided by the original non-gas map for each housing authority area was first copied onto a data file and the proportion of properties with mains gas and distribution by distance of non-gas properties then computed for each of the eight regional areas for Scotland used in the analysis.

To achieve better compatibility between the distance distributions given by the matched SHCS data and the original non-gas map data, the second most likely distance was used in place of the most likely distance in half of the regions, but to varying extents.

Despite the SHCS showing no mains gas supply in the sample dwellings in several postcodes shown on the non-gas map as having no non-gas properties, overall the SHCS estimates 79% of all dwellings in Scotland to have mains gas compared to only some 74% of properties shown by the non-gas map. However, after using the second comparable distance rather than the first, where appropriate, the regional distribution of non-gas dwellings across different distances from the grid is similar for the SHCS matched non-gas sample as for the original non-gas map.

For each region, Table A7.5.1 shows the number and percentage of households without a mains gas supply at each distance from the gas grid as estimated by the matched SHCS data, and gives the equivalent distribution from the original non-gas map (in italics). For all the regions, the distributions are broadly comparable, with only a slight tendency overall for the SHCS matched data to estimate fewer dwellings under 23 metres and more over 2 kilometres from the gas grid.

Table A7.5.1: Distribution of non-gas dwellings in SHCS and Non-gas map by region

Thousand households/SHCS row percentage/Non-gas row percentage

Region	Non-gas map distances of properties from the gas grid					Total Non-gas
	<23m	23-50m	50-500m	0.5-2km	>=2km	
Highlands & Islands	18	7	11	5	87	127
SHCS	14.0	5.8	8.3	3.6	68.3	100
<i>Non-gas Map</i>	14.2	4.4	7.8	5.3	68.3	100.0
North East	59	10	12	5	12	97
SHCS	60.4	9.8	12.4	4.9	12.5	100
<i>Non-gas Map</i>	61.9	9.0	12.9	4.5	11.6	100.0
Mid & Fife	22	7	6	6	9	51
SHCS	44.3	14.2	11.7	12.5	17.3	100
<i>Non-gas Map</i>	46.5	14.0	11.0	9.5	19.0	100.0
West	21	6	2	2	4	34
SHCS	61.3	16.6	6.9	4.7	10.6	100
<i>Non-gas Map</i>	64.1	12.2	12.4	2.4	9.0	100.0
Glasgow	29	8	6	0	0	44
SHCS	66.5	18.7	14.8	0.0	0.0	100
<i>Non-gas Map</i>	65.8	18.6	15.5	0.1	0.0	100.0
Central	12	4	3	1	1	22
SHCS	55.5	19.7	15.3	3.7	5.8	100
<i>Non-gas Map</i>	50.1	18.6	16.5	6.6	8.1	100.0
Lothian	28	5	3	1	0	36
SHCS	76.5	12.5	8.2	2.8	0.0	100
<i>Non-gas Map</i>	76.2	13.1	8.6	1.2	0.8	100.0
South	31	8	10	11	33	93
SHCS	33.3	8.4	10.5	12.3	35.5	100
<i>Non-gas Map</i>	33.5	8.5	11.3	9.6	37.2	100.0
Total for Scotland	221	53	54	30	147	504
SHCS	43.7	10.6	10.7	6.0	29.1	100
<i>Non-gas Map</i>	47.6	10.7	10.4	5.3	26.0	100.0

A7.5.4 Comparison of the SHCS matched data with the SHCS off grid variable

For Scotland, the most likely distance from the gas grid as derived from the non-gas map data can be compared with the existing SHCS off-gas variable at the individual property level.

The SHCS variable is based on a maximum distance from the dwelling to the gas grid of 63m (23m to the boundary, plus 40m to the dwelling). The *Non-gas map* distances refer to the distances of the grid from the property boundaries and not to the actual dwelling (as in the SHCS variable). Figure A7.5.1 illustrates in diagrammatic form the relationship between the two measures for different distances, assuming that the most likely non-gas map distance provides a perfect proxy for the actual distance of the survey property from the gas grid.

Table A7.5.2 illustrates the extent to which the non-gas map data provides a good proxy by cross-tabulating the most likely distances with the SHCS off-grid variable. In cases 1 to 3 in Figure A7.5.1 the distance from the actual sample dwelling to mains gas network is under 63 metres and thus all of these cases are classified as 'on grid' on the SHCS variable.

In case 1 situations, where properties typically front onto a road where there is gas main under the road or any accompanying pavement, both the distance to the property boundary and the length of the front grounds are likely to be, as illustrated, significantly under 23 metres and 40 metres respectively. As expected, Table A7.5.2 confirms this as the most frequent occurrence with 186 thousand or 79% of all non-gas properties on the gas grid likely to be under 23 metres from the gas grid. Over 93% of all non-gas dwellings on the gas grid (on the SHCS variable) are in urban areas and 75%

Figure A7.5.1: Relationship between SHCS off-grid variable and non-gas map distances

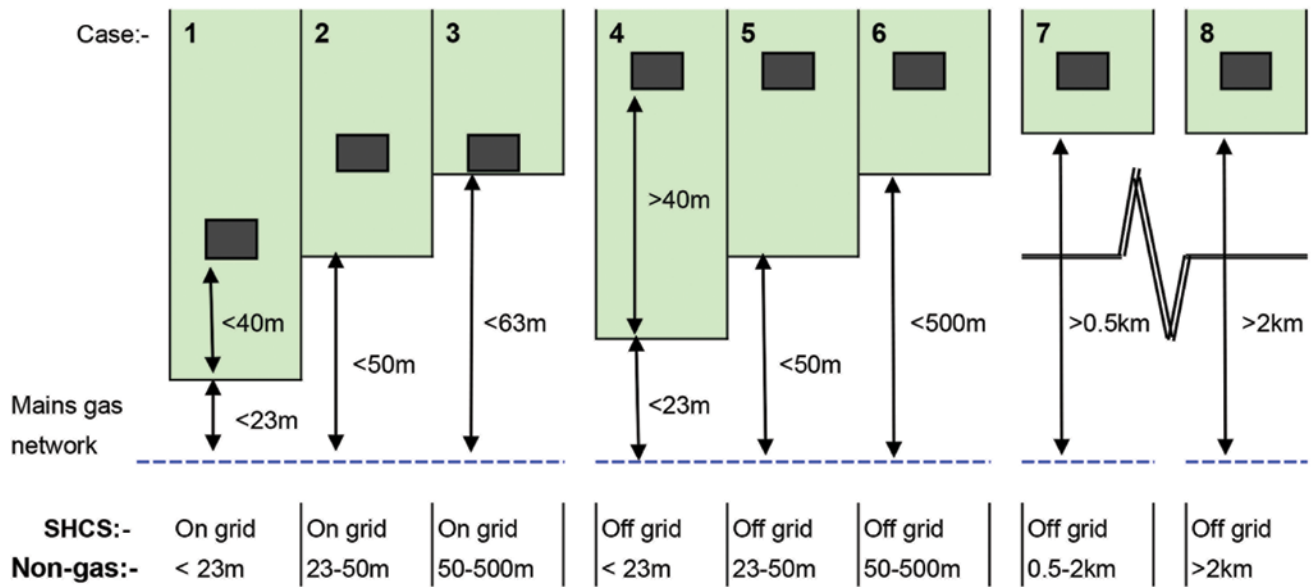


Table A7.5.2: Non-gas map distances by SHCS off-grid variable

Non-gas distance	Case (see fig A7.5.1)	SHCS On grid	Case (see fig A7.5.1)	SHCS Off grid	Total households
<23m	1	186	4	34	220
		84.5		15.5	100.0
		79.0		12.7	43.6
23-50m	2	35	5	20	55
		63.8		36.2	100.0
		14.8		7.3	10.8
50-500m	3	15	6	39	53
		27.6		72.4	100.0
		6.2		14.4	10.6
0.5-2km		0	7	31	31
		0.0		100.0	100.0
		0.0		11.4	6.1
>=2km		0	8	146	146
		0.0		100.0	100.0
		0.0		54.2	28.9
Total households		235		269	504
		46.7		53.3	100.0
		100.0		100.0	100.0

of these are flats. Being predominantly in urban areas, distances to the boundary of between 23 and 50 metres and over 50 metres are increasingly less likely to occur, and Table A7.5.2 shows that just some 15% and 6% respectively of SHCS ‘on grid’ properties fall into these categories.

That there are no non-gas properties whatsoever classified as ‘on-grid’ in the SHCS with likely distances of between 0.5 and 2 km and over 2 km, indicates that the non-gas map data is providing a near perfect proxy for the actual distance of the sample address from the grid in these cases. For example, if in a particular matched postcode with multiple non-gas map distances, the most likely distance (or occasionally, the alternative, comparable second most likely distance) for non-gas properties was between 0.5 and 2 km, but the actual sample dwelling had its boundary less than 23m from the grid, then Table A7.5.2 suggests that this would be very likely to be classified as ‘on grid’ on the SHCS variable.

In cases 4 to 8 in Figure A7.5.1, all the actual dwellings are over 63 metres from the gas grid and thus classified as ‘off grid’ in the SHCS. For cases 4 and 5 to occur, the distance from the property boundary to the dwelling needs to be unusually large, and Table 1 confirms that there are relatively few such cases. The majority of these are in rural areas, where plot sizes are generally larger, over 93% of all non-gas dwellings ‘off grid’ (on the SHCS variable) being rural properties. As the most likely distance increases, however, so the number of ‘off grid’ dwellings generally increase, 146 thousand or over 54% of all dwellings so classified having a likely non-gas map distance of over 2km.

The SHCS team have suggested¹⁵ that the SHCS measure tends to underestimate the number off-grid dwellings on the standard criteria, as the distance from the meter to the boundary is frequently under 40m, particularly in urban areas, and the distance from the grid to the property therefore possibility greater than 23m. They further suggest that the SHCS indicator may provide a better measure in rural areas where the surrounding land around a property is often larger.

The new matched non-gas map data tends to confirm this, 92% of rural dwellings classified as ‘off-grid’ on the SHCS variable having their boundary over 23 metres from the gas grid compared with only 62% of urban dwellings.

A7.6 Matching the Non-gas Map Data for England

A7.6.1 Validation of matched EHS data

As with the SHCS data, it is assumed that the EHS physical survey findings provide the most reliable indication of the actual presence or otherwise of a mains gas supply and gas usage in each EHS sample dwelling. Consequently, to achieve compatibility with all the other related statistics based on the EHS, this assumption is again applied in validating the matched non-gas map data.

Due to the disclosure safeguards which have been applied to the non-gas map data at postcode level, the EHS team were unable to secure a match for 188 or 1.6% of the 12,008 sample addresses in the 2013 EHS. However, 167 of these cases are recorded in the EHS as using a mains gas supply and a further one is estimated to have gas communal heating. Consequently, only 21 or 1.5% of the sample of 1,372 non-gas dwellings has no matched data.

As in the SHCS, in nearly 10% of cases where the non-gas map is showing all the properties in a matched postcode to have mains gas, the EHS records no mains gas supply in the sample dwelling. Conversely, there are 39 dwellings where the 2013 EHS records a gas supply, but the non-gas map shows the matched postcode as having all non-gas properties.

A7.6.2 Treatment of missing data

The methodology for determining missing data is the same as that used for the SHCS, as described above. The region, location, dwelling type, construction date and tenure of the sample dwellings with missing non-gas map data are first determined. The missing distances are then assumed to be the same as for the large majority of dwellings in the same region with the same characteristics where the non-gas map distances are known.

Where a particular property type is distributed over two or more distances in a region, the last three digits of the address code are used to split the missing sample randomly in the same proportion as for the comparable known cases.

¹⁵ SHCS (2013), *Methodology Notes*, 2013, pp 24-25.

Table A7.6.1: Distribution of non-gas dwellings in EHS and Non-gas map by region

Thousand households/SHCS row percentage/Non-gas row percentage

Region	Non-gas map distances of properties from the gas grid					Total Non-gas
	<23m	23-50m	50-500m	0.5-3km	>=2km	
North East	19	8	3	3	4	36
EHS	51.8	21.1	8.3	7.3	11.4	100.0
Non-gas Map	52.1	18.9	11.2	5.7	12.1	100.0
North West	97	29	17	10	13	167
EHS	58.4	17.6	10.0	6.1	7.9	100.0
Non-gas Map	60.6	16.6	11.7	5.0	6.0	100.0
Yorks and Humber	54	15	11	7	11	99
EHS	54.8	15.2	11.6	7.2	11.2	100.0
Non-gas Map	53.7	16.5	11.6	6.3	11.9	100.0
East Midlands	37	14	12	4	13	79
EHS	46.8	17.3	15.4	4.5	16.0	100.0
Non-gas Map	42.8	15.3	16.3	9.9	15.7	100.0
West Midlands	77	31	27	10	28	173
EHS	44.4	17.9	15.5	6.1	16.2	100.0
Non-gas Map	46.1	17.9	14.7	4.7	16.6	100.0
East	84	15	26	24	40	189
EHS	44.5	7.8	13.9	12.5	21.4	100.0
Non-gas Map	43.8	8.1	14.2	12.0	22.0	100.0
London	166	25	9	0	0	199
EHS	83.0	12.3	4.6	0.0	0.0	100.0
Non-gas Map	82.0	13.7	4.3	0.0	0.0	100.0
South East	84	28	22	15	13	164
EHS	51.4	17.3	13.7	9.4	8.2	100.0
Non-gas Map	52.1	16.9	14.1	9.3	7.6	100.0
South West	106	31	28	32	57	253
EHS	41.8	12.1	11.1	12.5	22.5	100.0
Non-gas Map	42.3	11.8	11.7	11.4	22.9	100.0
Total for England	724	195	156	105	180	1,359
EHS	53.2	14.3	11.5	7.7	13.2	100.0
Non-gas Map	55.8	14.4	11.4	6.8	11.5	100.0

A7.6.3 Comparison of the EHS matched data with the original non-map gas data

The same methodology as used on the SHCS data is used to test the accuracy of the matched data for England. The property number and distance data provided by the original non-gas map for each English local authority was copied onto an SPSS data file. Using this file, the proportion of all properties with mains gas and the distribution by distance of all non-gas properties was then computed for each of the nine 'government office' regions in England.

These proportion were then compared with the validated, matched EHS data at the regional level. Where significant differences occur in the distributions by distance of non-gas dwellings, a

better match is achieved by substituting the most likely distance with the second most likely distance where this is comparable. Such substitutions are made in seven of the nine English regions, but to varying extents.

Despite the EHS recording no mains gas supply in the sample dwellings in several postcodes shown on the non-gas map as having no non-gas properties, as with the SHCS, the non-gas map data records a significantly greater number of non-gas properties overall than the EHS sample estimates after grossing. For the reasons described above, the actual number of non-gas homes is based on the latter, but it is assumed that the distribution of distances follows the pattern shown by the non-gas map.

For each region, Table A7.6.1 shows the number and percentage of households without a mains gas supply at each distance from the grid as estimated by the validated matched data, and compares the distribution with that from the original non-gas map (in italics). For all the regions, the distributions are broadly comparable. However, as with the SHCS, the EHS based data total shows a slightly lower proportion of dwellings under 23 metres and a marginally greater percentage over 2 kilometres from the gas grid than the original map.

A7.7 Matching the Non-gas Map Data for Wales

A7.7.1 Validation of matched LIW data

In the case of Wales, the non-gas map data, published in 2015, is matched by postcode to the earlier 2008 Living in Wales survey sample. However, as described in Section A7.2 above, this sample has been re-grossed to match the 2011 Census statistics on central heating fuels, thereby increasing the figures on dwellings with mains gas to make these more contemporary with the non-gas map data. As a result, the validation of the LIW matched non-gas map data for Wales can be undertaken in the same way as for Scotland and England.

The matching of the non-gas map data to the LIW survey sample was undertaken by Ipsos MORI, as holders of the 2008 LIW postcode data, and MORI have succeeded in achieving a match for all but 4 of the 2,741 addresses in the sample. Of these 4 dwellings a half are recorded in the LIW survey as having mains gas, leaving just 2 relevant missing cases.

Where the non-gas map shows the matched postcode to have all mains gas properties, only 7 sample dwellings or under 1% of addresses are recorded in the LIW survey as lacking mains gas. Conversely, however, there are 31 or some 1 in 5 sample dwellings where the non-gas map shows the postcode to have all non-gas properties, where the LIW survey records the dwelling as having mains gas.

A7.7.2 Treatment of missing data

In determining the most likely distance from the gas grid of the missing cases and testing the resulting data, the five regional areas used in the re-grossing have been used, that is with the more densely populated South East region of Wales being split into two areas, South and East.

Table A7.7.1: Distribution of non-gas dwellings in LIW survey and Non-gas map by region

Thousand households/SHCS row percentage/Non-gas row percentage

Region	Non-gas map distances of properties from the gas grid					Total Non-gas
	<23m	23-50m	50-500m	0.5-3km	>=2km	
North Wales	21	5	9	12	22	69
LIW	29.7	7.0	13.7	17.2	32.4	100.0
<i>Non-gas Map</i>	<i>30.0</i>	<i>8.0</i>	<i>13.1</i>	<i>17.0</i>	<i>31.9</i>	<i>100.0</i>
Mid Wales	8	1	4	6	30	49
LIW	16.0	2.7	7.3	12.6	61.4	100.0
<i>Non-gas Map</i>	<i>16.5</i>	<i>3.2</i>	<i>6.9</i>	<i>12.0</i>	<i>61.4</i>	<i>100.0</i>
South West Wales	18	4	7	8	23	59
LIW	29.6	6.0	11.3	13.7	39.4	100.0
<i>Non-gas Map</i>	<i>30.1</i>	<i>7.1</i>	<i>12.4</i>	<i>12.8</i>	<i>37.6</i>	<i>100.0</i>
South East – South	22	6	6	2	0	36
LIW	60.6	17.8	16.3	4.3	1.0	100.0
<i>Non-gas Map</i>	<i>61.7</i>	<i>16.4</i>	<i>16.6</i>	<i>4.1</i>	<i>1.2</i>	<i>100.0</i>
South East – East	9	2	2	1	2	17
LIW	54.0	13.1	13.1	8.3	11.5	100.0
<i>Non-gas Map</i>	<i>51.9</i>	<i>13.6</i>	<i>14.7</i>	<i>8.1</i>	<i>11.6</i>	<i>100.0</i>
Total for Wales	76	18	28	29	78	230
LIW	33.3	7.9	12.1	12.7	34.0	100.0
<i>Non-gas Map</i>	<i>36.4</i>	<i>9.2</i>	<i>12.8</i>	<i>11.8</i>	<i>29.8</i>	<i>100.0</i>

The two non-gas sample dwellings where no postcode match was achieved were both electrically heated, purpose built flats located in large urban areas in North Wales. As similar flats in this region where the likely distances are known are either less than 23m or, almost as frequently, between 23m and 50m from the gas grid, the two missing cases are allocated these distances.

The distances from the gas grid of the remaining sample dwellings recorded in the LIW survey as lacking gas but not recorded as such by the non-gas map are determined using the same methodology as for Scotland and England. In each of the five regional areas, they are distributed across the different distances in the same pattern as for dwellings with the same characteristics where the distances are known, again using the last few digits of the address code to achieve the same distribution.

A7.7.3 Comparison of the LIW matched data with the original non-map gas data

As with the Scottish and English data, the resulting distribution is then compared with the distribution of distances from the gas grid as shown by original non-gas map for each of the five regional areas. Again the second most likely distance, where comparable to the most likely distance, are substituted for the latter in each region, where this produces a better match with the original non-gas map data.

Table A7.7.1 compares the final distribution for the LIW matched data with the original distribution given by the non-gas map for each of the five regional areas in Wales. For each region, the two distributions are very similar. However, as for England and Scotland, over the whole of the non-gas sample, the matched LIW data tends to slightly under estimate the proportion of dwellings under 23 m from the gas grid and over-estimate the percentage located at 2 km or more, compared to the non-gas map.

A7.8 Estimating the number of dwellings using mains gas

A7.8.1 Modelling communal gas-fired heating

There are two basic options for presenting statistics on the availability of mains gas:-

- A) These can be based on whether or not the actual home has a gas supply, or
- B) Can include homes that have no actual gas supply, but have communal gas-fired heating.

As in the context of fuel poverty, the latter provides a better indication of a household's lack of mains gas, it is the option which has been chosen for the production of the gas availability tables. However, as the EHS, SHCS and LIW surveys do not collect data on the fuels used for communal heating, the choice of this option means that this has to be modelled.

In the 2011 Report, the Transco data used for the gas availability tables only recorded whether or not there was a gas supply to the postcode in which the sample dwelling was situated. It provided no information on the, possibly large, distances of the latter from the gas grid. Thus, dwellings recorded with communal heating were assumed to have the benefit of gas-fired communal heating if:-

- > There was also a mains gas supply to the home, for example, for use in cooking.
- > The home was in an urban area (defined as a population of more than 10,000) or
- > The home was not in urban area, but in a postcode with a gas supply.

By providing the likely distance from the gas grid of any dwelling without an individual gas supply, the matched non-gas map data enables the modelling of the fuel for communal heating to be made more accurate. To allow for large district heating schemes found in some urban areas, dwellings recorded with communal heating are now classified as having gas-fired communal heating if:-

- > There is also a mains gas supply to the home.
- > The home is in an urban area and less than 0.5 kilometres from the gas grid.
- > The home is not in an urban area, but less than 50 metres from the gas grid.

Theoretically, this improvement in the modelling could make the latest estimates for gas availability less compatible with those published in the 2011 Report. In practice, however, the Scottish data suggests that this is not the case. The first criteria is the same in both analyses and no fewer than 99.9% of communally heated dwellings in urban area are less than 0.5 km from the gas grid. Moreover, 100% of such dwellings located in non-urban postcodes where the majority of dwelling have a gas supply are at less than 50 m from the gas grid.

A7.8.2 Dwellings with both LPG or bottled gas and mains gas

Both the latest available SHCS and EHS data and the comparable data used in the previous 2011 report, show a significant, albeit decreasing, proportion of the dwellings with LPG or bottled gas as their main heating fuel also having a mains gas supply. As this is an unexpected finding, a brief analysis has been undertaken, using the 2013 EHS, to try to determine the extent to which these homes actually have two gas systems or are due to surveyor error.

The 2013-14 EHS physical survey form is quite specific in trying to distinguish a mains gas supply from other forms of gas supply. The form includes two questions (1) “*Gas system present?*” – with instructions to include LPG etc and (2) “*Mains supply?*” For homes recorded as having LPG or bottled gas as their primary heating fuel, the answer is ‘Yes’ to question 1 in 100% of cases, but surprisingly also ‘Yes’ to question 2 in 12.5% of cases (see Table A6.9a).

Firstly, it is important to say that for these latter homes, reported as having two gas systems, the 2013 EHS sample is extremely small comprising only 6 addresses, which gross to a total of only 18,440 households in England. As this is well under 1% of the total estimated number of households without a mains gas supply, any possible misreporting of two gas systems will have very little effect on the non-gas statistics overall.

That said, it is interesting to explore the extent to which two gas systems may actually co-exist in these dwellings. All these homes that use bulk LPG have central heating with an LPG fired boiler, while the one sample household with bottled gas uses

room heaters for their primary heating. While 15% of these dwellings have open solid fuel fires, 58% are recorded as having mains gas fires as their secondary form of heating. With water heating being provided by the LPG fired boiler or an electric immersion heater (where there is bottled gas), the remaining 42% presumably use mains gas for cooking alone or possibly have an unused gas supply.

The best indication that, at least, a large proportion of these cases could genuinely have two gas systems, is provided by their location. Over 80% are located in urban areas with a population of greater than 10,000, compared to only 11% of homes with bulk LPG or bottled gas that have no mains gas supply. Moreover, the matched raw non-gas map data indicates that over 90% are in postcodes having only gas dwellings or mostly gas and where the most likely distance of the sample dwelling is under 23 metres from the gas grid.

Conversely, it seems unlikely that the qualified EHS surveyors would have mistakenly recorded these dwellings as having LPG or bottled gas, given the need for these homes to have bulk LPG storage tanks or equally distinctive large gas bottles. Also the fact that the six sample cases are located in four very different regions of England also makes it less likely that the results are due to surveyor error alone, e.g. the mis-recordings of a rogue surveyor.

In conclusion, it is probable that the number of dwellings recorded as having two gas systems is the result of a combination of both actual cases and, particularly in the earlier surveys, the surveyors miscoding the dwellings as having two types of gas supply. However, precisely what proportion of cases are genuine is impossible to say.



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