Energy Use in Homes

A series of reports on domestic energy use in England

Space and Water Heating Systems



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This is one of a series of three reports on the energy characteristics of the stock as observed by the 2003 English House Condition Survey.

The reports in this series are:

Space and Water Heating
 Thermal Insulation
 Energy Efficiency

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Space and Water Heating 2003

Executive Summary

The predominant space heating system across the stock is the boiler driven radiator system, identified as the primary source for 83% of dwellings. Storage radiators are used in 7% of dwellings, with stock relying on fixed room heaters contributing 6%. The vast majority (83%) is fuelled by gas, with 9% of systems running on electricity and the remaining 8% using oil, solid fuel or communal heat pumps. 74% of dwellings also use a secondary source of space heating, with room heaters accounting for 97% of these. The remaining 3% is comprised of storage radiators and portable heaters.

A household's hot water is supplied by central heating in 83% of cases, with an electric immersion heater used by 12% of the stock. Around 2% use either a dedicated water heating boiler or instantaneous heating systems. Again gas is the predominant heating fuel for water, used in 80% of dwellings, indeed 76% of the total stock use gas central heating for both primary space and water heating. 12% of dwellings heat their water with electricity. Among heating systems with boilers, standard boilers predominate with 45% of the total stock using these, whilst 27% use a combination boiler and 12% a back boiler.

Central heating with radiators is a more prevalent heating system in houses than flats, and in detached houses in particular. Flats are more likely to have storage radiators (particularly purpose built flats), communal systems and room heaters to heat the dwelling.

The location of a dwelling is an important factor when looking at space and water heating. 95% of oil fuelled systems and 60% of solid fuel systems occur in rural stock. This trend may be due to the age of stock, type of dwelling and also limited availability of the gas network in rural areas. Electric room heaters and communal heating are found in a higher proportion of dwelling in urban areas, and may be linked to the high proportion of flats in urban areas.

Since 1996 the proportion of dwellings primarily using central heating has steadily risen, with the predominant system being a boiler driven radiator system. The proportion of dwellings with this system has increased from 75% in 1996 to 83% in 2003. Of the minority central heating systems, the proportion of communal heating schemes have risen due to its installation in a number of social sector flats, whilst warm air systems, mainly installed in the 1970's, have seen their frequency decrease.

All forms of non-central heating have decreased since 1996, particularly individual room heaters and portable electric heaters. These categories have seen numbers approximately halve since 1996.

Around 2.7 million more dwellings are using central heating to provide hot water in 2003 than in 1996, with the proportions of all other methods decreasing, and numbers of dedicated water boilers halving. The proportion of dwellings using a boiler for space heating has increased from 79% in 1996 to 85% in 2003.

2003 Space and Water Heating Update Report

Summary

- Types of primary space and water heating vary according to factors such as dwelling type, tenure, region and dwelling age.
- Gas central heating is more frequently found in owner occupied stock than in other tenures, and in a higher proportion of houses than flats.
- More energy efficient heating systems and boiler types are found in dwellings with higher levels of thermal insulation.

Introduction

This report studies the provision of primary space and water heating systems across the English housing stock. It uses analysis based on the combined 2002 – 2003 English House Condition Survey (EHCS), with a sample of approximately 16,500 dwellings.





The predominant space heating system across the stock is the boiler driven radiator system as shown in Figure 1. It is identified as the primary source for 83% of dwellings. This category covers all systems, regardless of the fuel used, in which heat is supplied by a central source and radiators are the heat emitters. Electric storage radiators are used in 7% of dwellings, with fixed gas, solid fuel or electric room heaters used as a primary source in 6%. The remaining 6% comprises all communal systems, underfloor or ceiling systems (grouped as 'other') and dwellings in which individual rooms are only heated by a portable unit. The vast majority of systems (83%) are fuelled by gas, with 9% of systems running on electricity and the remaining 8% using oil, solid fuel or communal heating (Figure 2).



Figure 2: Proportion of space heating systems by fuel

74% of dwellings also use a secondary source of space heating, with room heaters accounting for 97% of these. The remaining 3% is comprised of storage radiators and portable heaters.



Figure 3: Proportions of water heating systems

A dwelling's hot water is primarily supplied by central heating in 83% of cases (Figure 3), with an electric immersion heater used by 12% of the stock as the main source of hot water. Immersion heaters are found in around 54% of the stock but this report will only deal with the primary source. Around 2% use either a dedicated water heating boiler or instantaneous heating systems.

Gas is the predominant fuel used for heating water, identified in 80% of dwellings. Indeed 76% of the total stock uses gas central heating for both primary space and water heating.



Figure 4: Proportions of boiler types

Among heating systems with boilers, standard boilers predominate (Figure 4). 45% of the total stock uses this boiler system, whilst 27% use a combination boiler and 12% a back boiler. Condensing boilers make up only 2.5% of the stock.

Dwelling Analysis

Dwelling Type

Central heating with radiators is a more predominant heating system in houses than flats and in detached houses in particular, with wet radiator boiler systems found in 94% of these dwellings (Figure 5).

Only 70% of converted flats have wet radiator systems and just 55% of purpose built flats, which are more reliant on programmable storage heaters, communal heating and portable heaters than any other dwelling category. Room heaters are particularly common in terraced houses, with 39% of all room heaters found in mid terraced dwellings, which make up only 21% of the total stock.



Figure 5: Comparison of space heating systems by dwelling type

Purpose built flats have the highest proportion of electrically heated systems, accounting for 44% of dwellings in this heating category despite making up only

14% of the overall stock. They also have the lowest percentage of gas fuelled systems. Detached houses have the largest proportion of oil powered systems, reflecting the higher than average likelihood of these houses being off the gas network.



Figure 6: Comparison of secondary heating systems by dwelling type

Flats are significantly less likely to have a secondary source of space heating than houses (Figure 6). This is mainly due to their smaller size, with centrally and communally heated flats in particular using only one source of heating. The most likely to have an alternative source are detached and semi detached with 87% and 83% respectively using a secondary system against a stock average of 74%.



Figure 7: Comparison of water heating systems by dwelling type

We also see flats, particularly purpose built, heating their water through an electric immersion more frequently than houses (Figure 7), with centrally heated water more predominant in detached and semi detached houses.

Dwelling Age

Wet radiator boiler systems are the most frequently used in dwellings of all ages, with inter-war stock being more reliant on these systems (89%) than other age bands (Figure 8).



Figure 8: Comparison of space heating systems by construction date

Programmable storage radiators are more common in newer dwellings, with 34% of these systems found in post 1980 stock. The inverse is true for room heaters of which 40% are found in pre 1919 dwellings compared with only 6% in post 1980 stock. Both warm air and communal systems, although making up a relatively small percentage of the total stock, are found mainly in 1965 – 1980 dwellings. Solid fuel and oil systems are more likely to be found in older stock, and are much less common in recently constructed stock, in which electrical heating is more predominant than in other age categories (Figure 9). We find that 55% of electrical systems occur in dwellings built after 1965 whilst only 40% of all stock was built in this period.



Figure 9: Comparison of space heating fuel by construction date

Newer dwellings are increasingly likely to use electricity to heat water, although pre-1919 stock also has a high proportion of immersion and instantaneous heaters with the proportion of dwellings using central heating or a dedicated boiler falling over time. The balance between standard and combination boilers changes with each construction date category (Figure 10). Pre-1919 dwellings use just over a third of each type, compared to 57% of post 1980 stock using standard boilers and 21% using combination boilers.



Figure 10: Comparison of boiler types by construction date

However, it would be wrong to conclude that combination boilers are being used less frequently. As will be shown later in this report, combination boilers are making up an increasing percentage of installations; the high frequencies seen in older properties come from old boilers that have been replaced, whilst the newer stock is still using the original standard boilers.

Correlation with Thermal Performance of the Fabric

There are a number of areas that we can identify in which two or more energy efficiency measures occur together. One of these is found when comparing space heating systems and the extent of double glazing. We see that boiler systems are more predominant in fully double glazed dwellings than those with no double glazing, whilst storage and room heaters are more predominant in nondouble glazed dwellings than overall stock proportions would suggest. A similar pattern emerges in which gas fired heating systems occur more frequently in dwellings with some double glazing than those without, and likewise double glazed stock is more likely to use central heating for hot water than single glazed dwellings.

A further correlation can be found between high levels of insulation and efficient heating systems, with the highest proportion of boiler systems with radiators found in dwellings with insulated cavity walls. However, the next highest incidence is found in uninsulated solid walled stock. This can be attributed to the fact that older stock is overwhelmingly more likely to be solid walled and also has a higher proportion of boiler systems with radiators – 85% of pre 1945 stock use this heating system, compared with 81% of dwellings built in 1945 or later. Housing with solid walls uses a higher proportion of room and portable heaters, whilst cavity walled dwellings use a larger amount of storage heaters. This reflects the more recent construction dates of this stock.

Inefficient space and water heating is found in higher proportions in dwellings with uninsulated loft spaces than those with insulation. We find that radiator systems occur in 76% of uninsulated dwellings compared with 82% of insulated stock. Room heaters and portable heaters predominate in housing with no loft insulation, along with oil and solid fuel systems and non-centrally heated hot water systems. We also see that dwellings with thicker loft insulation more frequently use condensing boilers.

Government Office Region (GOR)

The East Midlands and North Eastern GOR's are the most reliant on boiler systems, whilst the South West uses a higher proportion of storage heaters than other regions, due to a lower level of access to mains gas. The highest proportion of room heaters are found in Yorkshire and the North West. 39% of communal systems are found in London, which makes up 15% of the total stock. These systems are found mainly in the high proportion of purpose built flats in the London GOR.

The South and East of the country have a higher proportion of electrical space heating than other regions, whilst the South West has the least efficient water heating systems; the region is above the national average for use of dedicated boilers, electric immersions and instantaneous heaters.

Floor Area

There is a strong correlation between the type of space heating and dwelling floor area, with all non boiler systems being more predominant in smaller dwellings than large ones (Figure 11).



Figure 11: Comparison of space heating systems of floor area

Smaller stock is also the most likely to use electrical systems, with 48% of the smallest floor area quintile relying on this fuel. The largest fifth of all dwellings, of which 58% are detached houses, use 62% of oil fuelled systems. Larger homes are more likely to have a secondary method of space heating and also have a higher proportion of hot water produced by central heating than smaller stock.



Figure 12: Comparison of boiler types by floor area

Standard and condensing boilers are found more frequently in larger dwellings (Figure 12), with dwellings in the smallest quintile seven times more likely to be without a boiler than those in the largest quintile.

Household Analysis

Tenure

Of the tenure categories private rented dwellings are the most reliant on non boiler driven systems, with around 16% of this stock using storage heaters and 12% of the stock using room heaters for space heating, (Figure 13). This is around twice the total stock proportion for each heating type.



Figure 13: Comparison of space heating systems by tenure

Private rented stock consistently falls behind other tenures in terms of energy efficient space and water heating. It has the lowest proportion of gas systems for all heating, the highest proportion using electricity and the lowest percentage of hot water central heating systems. We find that some dwelling profiles which typically have inefficient space and water heating systems occur regularly in private rented stock. Whilst private rented stock makes up around 10% of the total number of dwellings, it contains 49% of all converted flats and 22% of the pre 1919 stock, both of which have high proportions of inefficient heating systems. Southern and eastern regions predominate in this tenure and these also have proportionally high frequencies of electric systems and storage heaters.

RSL stock uses a similar proportion of storage heaters to private rented dwellings, but is more reliant on communal heating and less reliant on room heaters. The owner occupied sector has the highest levels of gas central heating systems and centrally heated hot water systems, as there is a greater prevalence of larger detached houses, of which 95% are owner occupied, compared with a total stock proportion of 71%.

Vacancy

In a similar way to private rented stock, vacant dwellings have more of the minority heating systems and fuels than occupied stock, and are more likely to have electric immersion and instantaneous water heaters. This is partly explained by the fact that private rented dwellings make up over one third of all vacant stock, despite this tenure contributing only 10% to the total number of dwellings. Vacant dwellings are often older and more likely to be poorly insulated and have no double glazing; factors that correlate with inefficient heating systems (see above).

Neighbourhood

The heating systems of dwellings in rural¹ locations differ from urban² stock, with 95% of oil fuelled systems and 60% of solid fuel systems occurring in rural stock, despite rural dwellings only comprising 21% of the total stock. This is due to the large number (45%) of older, detached dwellings in rural areas, many of which are off the gas network. Rural dwellings have a higher than average proportion of storage heaters, whilst electric room heaters, communal heating and combination boilers are found in a higher proportion of urban dwellings along with combination boilers, these are due to the high proportion of terraced housing and flats in urban areas.

Looking more closely at the surrounding area of a dwelling, we might expect to see a pattern of less efficient space and water heating occurring in poorer and more neglected neighbourhoods. The analysis shows that areas with these neighbourhoods include a higher than average proportion of room and portable heaters and more non-centrally heated hot water systems than on average. Housing in poor neighbourhoods use a high proportion of solid fuel and only 73% of these use boiler systems with radiators, compared with 84% of dwellings not situated in a poor neighbourhood.

Household Type

Examining household composition, we see that single person households have the smallest percentage of boiler systems with radiators and the highest percentage of storage and room heaters (Figure 14). These categories are the most likely to live in flats which reflect the reliance on non-boiler heating systems. Couples with dependent children have the highest incidence of boiler driven systems; these families make up the largest percentage of the owner occupied sector which again reflects the typical heating systems of this tenure.



Figure 14: Comparison of heating systems by household type

Storage radiators and room heaters occur most frequently in both the youngest and oldest categories of Household Reference Person (HRP) and these categories are the least likely to use gas. Older categories are more likely to use a secondary source of space heating, usually room heaters.

Income

A direct comparison can be made between poorer households and high use of minority heating systems, for example 20% of the lowest household income quintile use storage radiators or room heaters for primary space heating, compared with just 5% of the highest quintile (Figure 15).

¹ Isolated dwellings and small hamlets.

² Around core of towns, small cities, older urban areas incorporated in metropolis.



Figure 15: Comparison of space heating systems by household income

Low income households are more likely to be in terraces or flats, which also use a high proportion on non-central heating. Around 10% more of the highest income quintile uses gas for space and water heating than the lowest quintile.

Comparison over time

Since 1991 the proportion of dwellings primarily using central heating has steadily risen, with the predominant system being a boiler driven radiator system (Figure 16). The proportion of dwellings with this system has increased from 71% in 1991 to 83% in 2003. Of the minority central heating systems, the proportion of communal heating schemes have risen due to its installation in a number of social sector flats, whilst warm air systems, mainly installed in the 1970's, have seen their frequency decrease.



Figure 16: Change in the use of space heating systems over time

All forms of non-central heating have decreased since 1991, particularly individual room heaters and portable electric heaters. These categories have seen proportions drop by around two-thirds since 1991. These decreases mean that the use of electricity and solid fuel have fallen since 1991, whilst gas and oil fuelled systems are found more frequently (Figure 17).



Figure 17: Change in the use of space heating fuel over time

Around 2.7 million more dwellings are using central heating to provide hot water in 2003 than in 1996, with the proportions of all other methods decreasing, and numbers of dedicated water boilers halving (Figure 18³).



Figure 18: Change in the use of water heating systems over time

The proportion of dwellings using a boiler for space heating has increased from 74% in 1991 to 85% in 2003. The numbers of standard floor or wall boilers and back boilers have steadily decreased, being replaced with combination boilers and, more recently, condensing boilers (Figure 19). From a small number of combination boilers in 1991 there were 2.8 million in 1996 (14% of the total stock) and 5.4 million in 2003 (25% of the stock).

³ Due to changes in the EHCS survey form, Figure 18 begins in 1996



Figure 19: Change in the use of boilers over time

Dwelling Type

The overall increase in boiler driven central heating since 1991 has been in all dwelling types to differing extents, although purpose built flats have only had a small change in the proportion using these systems. The decrease in room heaters used in purpose built flats is due to the take up of communal heating and storage heater systems. Terraced houses have seen the greatest increase in ownership of central heating systems; with 22% more mid terraces and 19% more end terraces using them. These increases are balanced by the removal of warm air systems and the reduced reliance on room heaters.

The increase in oil fuelled systems can be mainly attributed to semi-detached dwellings, predominantly in rural areas where homes are off the gas network. Terraces have seen the greatest increase in gas fuelled heating, balanced by the largest decrease in electrical systems. Terraced dwellings also show the largest changes in water heating systems since 1996, along with semi-detached houses. These categories have increased their use of centrally heated water by between 9% and 14%, with dedicated boilers, immersion and instantaneous heaters becoming rarer.

Between 1991 and 2003 the largest shift from standard boilers to combination boilers has been in flats, whilst terraced houses have had a large number of combination boilers installed where a non-boiler heating system was previously found. Semi-detached and detached dwellings have seen the largest decrease in back boilers, again replaced by combination and, more recently, condensing boilers.

Dwelling Age

The increase in use of boiler systems with radiators since 1991 can be seen in each construction date category, but is most distinct in older stock, where central heating installations have replaced room heaters or portable electric heaters. Dwellings built between 1965 and 1980 have seen a large number of warm air heating systems and storage radiators replaced with boiler driven central heating, whilst new build stock has increased the number of centrally heated homes in the post 1980 category by almost 1.8 million, out of a total increase of 2.2 million dwellings since 1991.

The swing from electric systems to gas fuelled systems is also more pronounced in older stock, as is the proportion of dwellings with centrally heated hot water systems. The frequency of solid fuel systems has been cut by around two-thirds since 1991, with the largest decreases in pre-1945 stock.

Combination boilers have increased in frequency in all age bands from almost zero in 1991, although older stock again shows the largest change. Over a third of pre-1919 dwellings have combination boilers in 2003, compared to one-fifth of post-1980 stock. In pre-1965 stock installation of combination and condensing boilers has replaced a significant amount of stock with non-boiler systems, whilst in post-1964 dwellings it is existing standard boilers that have been upgraded.

Government Office Region

The highest increases of central heating use since 1996 are in the North and Midlands, whilst the use of storage heaters has increased slightly in the Eastern and South East GOR's, resulting in a small shift from gas fuelled systems to electrical systems. In London the frequency of room heaters as the primary space heating source has decreased by two thirds, and has been replaced with central and communal heating.

The Midlands has seen the largest increase in the proportion of dwellings using centrally heated water, with the majority of conversions coming from stock that previously used an electric immersion heater.



Figure 20: Percentage increase in the use of combination or condensing boilers by region

Figure 20 shows the increase in the use of combination and condensing boilers for each region between 1996 and 2003, banding the % change into 0 - 10%, 10% to 18% and more than 18%. The southern regions have seen the smallest increases, with the exception of London in which the use of these boilers has risen by 14%. The North West, Yorkshire and the West Midlands show the largest increases of between 18% and 25%.

The regions with the largest proportion of dwellings without boilers, along with the South West, have shown the largest increases in these energy efficient boilers. However, where the North West area has significantly improved, the South West remains the region with the lowest proportion of dwellings with any type of boiler driven systems.

Tenure

The dominant owner occupied sector has seen a rise in boiler systems with radiators of around 3.1 million, an increase of 8.5% within this sector. The numbers of all other systems, with the exception of communal heating, have fallen. Social housing has seen an increase in the proportion of central heating installations since 1991 of 13%, although the transition of a large amount of local authority stock to RSL ownership, often of a poor quality, means that the RSL sector has seen a large increase in the number of dwellings using storage heaters.

Private rented stock has also seen increases in the use of central heating and storage heaters and a sharp decrease in dwellings relying on room heaters although it still has a proportionally higher amount of this heating category than other tenures.

The RSL sector has had the largest increase in the proportion of dwellings with gas fuelled systems and centrally heated hot water systems. This is mainly due to new build RSL stock installing these systems as standard. The transit of local authority stock has significantly reduced the proportions of electrical space heating systems and immersion water heating systems in this sector.

For the same reason the frequency, rather than the proportion, of RSL stock without a boiler has increased, whilst the frequency of back boilers has decreased in line with other tenures. The use of combination boilers has increased dramatically in RSL stock and has also doubled in the owner occupied and private rented sectors, whilst standard boilers are gradually being replaced in all tenures.

Household Type

The largest increase in the proportion of boiler driven central heating systems since 1991 has been among one parent families, corresponding to the largest percentage decrease in room heater use. The highest use of storage heaters and communal systems are still found in single person households, although these have also seen a rise of around 10% in boiler driven central heating systems.

Young households containing either one person or a couple have seen the highest increases in gas fuelled systems since 1991, whilst couples with dependent children are using twice as many oil fuelled systems in 2003, contributing most significantly to the rise in the use of this minority fuel.

Space and Water Heating Update Update Tables 2003

These tables give detailed breakdowns of the four main heating groups (primary space heating type, space heating fuel, water heating type and boiler type) against key variables, as an appendix to the Space and Water Heating Update Report

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Table 1.1 Primary space heating system - Proportion of space heating type

	count(000s), (column%)
Primary space heating system	m Dwellings
Boiler system with radiators	17,806
	(82.9)
Storage radiators	1,587
	(7.4)
Warm air system	360
	(1.7)
Room heater	1,241
	(5.8)
Other Systems	45
	(0.2)
Communal	393
	(1.8)
Portable heaters only	53
	(0.2)
Total	21,484
	(100.0)

Table 1.2 Primary space heating system - Proportion of space heating type by dwelling age

							count(000s), (row%)), (column%)
	Boiler system with radiators	Storage radiators	Warm air system	Room heater	Other Systems	Communal	Portable heaters only	Total
End terrace	1,750	123	33	144	2	12	3	2,067
	(84.7)	(5.9)	(1.6)	(7.0)	(0.1)	(0.6)	(0.1)	(100.0)
	(9.8)	(7.7)	(9.3)	(11.6)	(3.7)	(3.1)	(5.5)	(9.6)
Mid terrace	3,605	221	102	488	7	18	5	4,445
	(81.1)	(5.0)	(2.3)	(11.0)	(0.1)	(0.4)	(0.1)	(100.0)
	(20.2)	(13.9)	(28.2)	(39.3)	(14.7)	(4.6)	(9.0)	(20.7)
Semi detached	5,921	276	54	324	1	7	5	6,586
	(89.9)	(4.2)	(0.8)	(4.9)	(0.0)	(0.1)	(0.1)	(100.0)
	(33.3)	(17.4)	(15.0)	(26.1)	(1.3)	(1.7)	(9.2)	(30.7)
Detached	4,301	141	76	42	7	4	3	4,573
	(94.0)	(3.1)	(1.7)	(0.9)	(0.2)	(0.1)	(0.1)	(100.0)
	(24.2)	(8.9)	(21.1)	(3.4)	(16.2)	(1.0)	(4.8)	(21.3)
Purpose built flat	1,721	727	95	171	29	325	21	3,089
	(55.7)	(23.5)	(3.1)	(5.5)	(0.9)	(10.5)	(0.7)	(100.0)
	(9.7)	(45.8)	(26.4)	(13.8)	(64.2)	(82.6)	(40.4)	(14.4)
Converted flat	508	99		72		27	16	723
	(70.3)	(13.7)	(0.0)	(9.9)	(0.0)	(3.8)	(2.3)	(100.0)
	(2.9)	(6.3)	(0.0)	(5.8)	(0.0)	(6.9)	(31.1)	(3.4)
Total	17,806	1,587	360	1,241	45	393	53	21,484
	(82.9)	(7.4)	(1.7)	(5.8)	(0.2)	(1.8)	(0.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

							count(000s), (row%), (column%)
	Boiler system with radiators	Storage radiators	Warm air system	Room heater	Other Systems	Communal	Portable heaters only	Total
Pre 1919	3,706	269	2	499	3	40	25	4,544
	(81.6)	(5.9)	(0.0)	(11.0)	(0.1)	(0.9)	(0.5)	(100.0)
	(20.8)	(17.0)	(0.5)	(40.2)	(6.6)	(10.3)	(46.5)	(21.1)
1919 - 1944	3,549	128	5	266	2	23	8	3,981
	(89.2)	(3.2)	(0.1)	(6.7)	(0.1)	(0.6)	(0.2)	(100.0)
	(19.9)	(8.0)	(1.3)	(21.4)	(5.1)	(5.9)	(15.3)	(18.5)
1945 - 1964	3,802	259	38	286	6	39	10	4,439
	(85.6)	(5.8)	(0.8)	(6.4)	(0.1)	(0.9)	(0.2)	(100.0)
	(21.4)	(16.3)	(10.5)	(23.1)	(12.3)	(10.0)	(18.4)	(20.7)
1965 - 1980	3,748	398	267	120	20	192	6	4,752
	(78.9)	(8.4)	(5.6)	(2.5)	(0.4)	(4.0)	(0.1)	(100.0)
	(21.1)	(25.1)	(74.2)	(9.7)	(45.0)	(48.8)	(11.5)	(22.1)
1981 - 1990	1,466	293	43	54	8	72	4	1,940
	(75.5)	(15.1)	(2.2)	(2.8)	(0.4)	(3.7)	(0.2)	(100.0)
	(8.2)	(18.5)	(11.9)	(4.4)	(17.9)	(18.3)	(8.3)	(9.0)
Post 1990	1,535	240	6	15	6	27		1,829
	(83.9)	(13.1)	(0.3)	(0.8)	(0.3)	(1.5)	(0.0)	(100.0)
	(8.6)	(15.1)	(1.6)	(1.2)	(13.1)	(6.8)	(0.0)	(8.5)
Total	17,806	1,587	360	1,241	45	393	53	21,484
	(82.9)	(7.4)	(1.7)	(5.8)	(0.2)	(1.8)	(0.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 1.3 Primary space heating system - Proportion of space heating type by dwelling type

Table 1.4 Primary	space heating	g system - Pro	portion of space	ce heating type b	y dwelling tenure
		j j		5 51	J J

							count(000s), (row%),	(column%)
	Boiler system with radiators	Storage radiators	Warm air system	Room heater	Other Systems	Communal	Portable heaters only	Total
Owner occupied	13,348	795	224	750	23	40	22	15,201
	(87.8)	(5.2)	(1.5)	(4.9)	(0.1)	(0.3)	(0.1)	(100.0)
	(75.0)	(50.1)	(62.2)	(60.4)	(49.8)	(10.1)	(41.5)	(70.8)
Private rented	1,488	347	21	259	8	56	26	2,205
	(67.5)	(15.7)	(0.9)	(11.7)	(0.4)	(2.5)	(1.2)	(100.0)
	(8.4)	(21.9)	(5.8)	(20.9)	(17.7)	(14.3)	(49.0)	(10.3)
Local Authority	1,821	191	73	181	13	175	3	2,457
	(74.1)	(7.8)	(3.0)	(7.4)	(0.5)	(7.1)	(0.1)	(100.0)
	(10.2)	(12.0)	(20.3)	(14.6)	(28.0)	(44.6)	(6.4)	(11.4)
RSL	1,148	254	42	51	2	122	2	1,621
	(70.8)	(15.7)	(2.6)	(3.2)	(0.1)	(7.5)	(0.1)	(100.0)
	(6.4)	(16.0)	(11.7)	(4.1)	(4.5)	(31.1)	(3.1)	(7.5)
Total	17,806	1,587	360	1,241	45	393	53	21,484
	(82.9)	(7.4)	(1.7)	(5.8)	(0.2)	(1.8)	(0.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 1.5 Primary space heating system - Proportion of space heating type by household composition

							COUTII(OOOS), (TOW %)	, (column76)
	Boiler system with radiators	Storage radiators	Warm air system	Room heater	Other Systems	Communal	Portable heaters only	Total
couple under 60	3,507	228	49	184	10	26	8	4,012
	(87.4)	(5.7)	(1.2)	(4.6)	(0.2)	(0.6)	(0.2)	(100.0)
	(20.3)	(15.3)	(14.5)	(16.4)	(22.2)	(7.2)	(16.5)	(19.4)
couple 60 or over	2,699	225	66	152	6	29		3,178
	(84.9)	(7.1)	(2.1)	(4.8)	(0.2)	(0.9)	(0.0)	(100.0)
	(15.6)	(15.2)	(19.4)	(13.5)	(14.3)	(8.1)	(0.8)	(15.4)
couple with children	4,577	152	60	137	4	26	3	4,959
	(92.3)	(3.1)	(1.2)	(2.8)	(0.1)	(0.5)	(0.1)	(100.0)
	(26.5)	(10.3)	(17.5)	(12.2)	(8.4)	(7.2)	(6.3)	(24.0)
lone parent with children	1,267	87	25	101	4	18	1	1,503
	(84.3)	(5.8)	(1.7)	(6.7)	(0.2)	(1.2)	(0.1)	(100.0)
	(7.3)	(5.9)	(7.3)	(9.0)	(8.2)	(5.1)	(2.8)	(7.3)
large adult household	1,241	66	16	100		22	3	1,447
	(85.7)	(4.5)	(1.1)	(6.9)	(0.0)	(1.5)	(0.2)	(100.0)
	(7.2)	(4.4)	(4.5)	(8.9)	(0.0)	(6.2)	(6.0)	(7.0)
one person under 60	1,947	336	56	198	15	65	20	2,636
	(73.9)	(12.8)	(2.1)	(7.5)	(0.6)	(2.5)	(0.7)	(100.0)
	(11.3)	(22.6)	(16.4)	(17.6)	(33.5)	(18.2)	(41.6)	(12.8)
one person 60 or over	2,016	390	69	249	6	170	12	2,914
	(69.2)	(13.4)	(2.4)	(8.6)	(0.2)	(5.8)	(0.4)	(100.0)
	(11.7)	(26.3)	(20.3)	(22.2)	(13.4)	(47.8)	(25.9)	(14.1)
Total	17,254	1,485	341	1,121	44	356	47	20,648
	(83.6)	(7.2)	(1.7)	(5.4)	(0.2)	(1.7)	(0.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

count(000s), (row%), (column%)

							count(000s), (row%),	(column%)
	Boiler system with radiators	Storage radiators	Warm air system	Room heater	Other Systems	Communal	Portable heaters only	Total
1st quintile	2,750	780	92	350	25	268	28	4,293
	(64.1)	(18.2)	(2.1)	(8.2)	(0.6)	(6.2)	(0.6)	(100.0)
	(15.4)	(49.1)	(25.6)	(28.2)	(54.6)	(68.3)	(52.7)	(20.0)
2nd quintile	3,431	327	73	390	6	51	13	4,292
	(79.9)	(7.6)	(1.7)	(9.1)	(0.1)	(1.2)	(0.3)	(100.0)
	(19.3)	(20.6)	(20.3)	(31.5)	(12.8)	(12.9)	(25.2)	(20.0)
3rd quintile	3,693	198	93	275	6	37	3	4,306
	(85.8)	(4.6)	(2.2)	(6.4)	(0.1)	(0.9)	(0.1)	(100.0)
	(20.7)	(12.5)	(25.9)	(22.1)	(14.0)	(9.4)	(6.4)	(20.0)
4th quintile	3,889	175	45	160	2	20	4	4,296
	(90.5)	(4.1)	(1.1)	(3.7)	(0.0)	(0.5)	(0.1)	(100.0)
	(21.8)	(11.0)	(12.6)	(12.9)	(3.7)	(5.2)	(8.4)	(20.0)
5th quintile	4,042	107	56	66	7	16	4	4,298
	(94.0)	(2.5)	(1.3)	(1.5)	(0.2)	(0.4)	(0.1)	(100.0)
	(22.7)	(6.7)	(15.5)	(5.3)	(14.9)	(4.2)	(7.2)	(20.0)
Total	17,806	1,587	360	1,241	45	393	53	21,484
	(82.9)	(7.4)	(1.7)	(5.8)	(0.2)	(1.8)	(0.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 1.6 Primary space heating system - Proportion of space heating type by quintiles of floor area

							count(000s), (row%),	(column%)
	Boiler system with radiators	Storage radiators	Warm air system	Room heater	Other Systems	Communal	Portable heaters only	Total
1st quintile	2,988	448	84	381	9	168	13	4,093
	(73.0)	(11.0)	(2.1)	(9.3)	(0.2)	(4.1)	(0.3)	(100.0)
	(17.3)	(30.2)	(24.8)	(34.0)	(20.9)	(47.3)	(27.3)	(19.8)
2nd quintile	3,210	405	75	310	7	98	13	4,119
	(78.0)	(9.8)	(1.8)	(7.5)	(0.2)	(2.4)	(0.3)	(100.0)
	(18.6)	(27.3)	(22.0)	(27.7)	(14.9)	(27.4)	(28.5)	(19.9)
3rd quintile	3,487	297	58	216	9	49	10	4,126
	(84.5)	(7.2)	(1.4)	(5.2)	(0.2)	(1.2)	(0.2)	(100.0)
	(20.2)	(20.0)	(17.0)	(19.3)	(20.0)	(13.7)	(21.2)	(20.0)
4th quintile	3,695	209	70	147	9	19	5	4,155
	(88.9)	(5.0)	(1.7)	(3.5)	(0.2)	(0.5)	(0.1)	(100.0)
	(21.4)	(14.1)	(20.6)	(13.1)	(21.2)	(5.4)	(10.7)	(20.1)
5th quintile	3,873	125	53	66	10	22	6	4,155
	(93.2)	(3.0)	(1.3)	(1.6)	(0.2)	(0.5)	(0.1)	(100.0)
	(22.4)	(8.4)	(15.6)	(5.9)	(23.1)	(6.2)	(12.3)	(20.1)
Total	17,254	1,485	341	1,121	44	356	47	20,648
	(83.6)	(7.2)	(1.7)	(5.4)	(0.2)	(1.7)	(0.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 1.7 Primary space heating system - Proportion of space heating type by quintiles of income

Table 2.1 Primary space heating fuel - Proportion of space heating fuel

	count(000s),	(colu	umn%)
Primary space heating	ng fuel	Dwe	ellings
Gas fired system			17,915
		(83.4)
Oil fired system			800
		(3.7)
Solid fuel fired system			422
		(2.0)
Electrical system			1,954
		(9.1)
Communal system			393
		(1.8)
Total			21,484
		(100.0)

Table 2.2 Primary	y spac	e heating	I fuel -	Proportion	of spa	ce heating	fuel b	y dwelling age

	Gas fired system	Oil fired system	Solid fuel fired system	Electrical system	Communal system	Tota
End terrace	1,834	37	39	145	12	2,067
	(88.7)	(1.8)	(1.9)	(7.0)	(0.6)	(100.0)
	(10.2)	(4.6)	(9.2)	(7.4)	(3.1)	(9.6)
Mid terrace	4,021	24	87	296	18	4,445
	(90.5)	(0.5)	(1.9)	(6.7)	(0.4)	(100.0)
	(22.4)	(3.0)	(20.5)	(15.1)	(4.6)	(20.7)
semi detached	5,874	187	199	320	7	6,586
	(89.2)	(2.8)	(3.0)	(4.9)	(0.1)	(100.0)
	(32.8)	(23.3)	(47.2)	(16.4)	(1.7)	(30.7)
detached	3,752	547	87	184	4	4,573
	(82.0)	(12.0)	(1.9)	(4.0)	(0.1)	(100.0)
	(20.9)	(68.4)	(20.7)	(9.4)	(1.0)	(21.3)
purpose built	1,898	()	, , , , , , , , , , , , , , , , , , , ,	859	325	3,089
L . L	(61.5)	(0.0)	(0.2)	(27.8)	(10.5)	(100.0)
	(10.6)	(0.0)	(1.7)	(43.9)	(82.6)	(14.4)
converted	536	6	3	151	27	723
0011101100	(74.2)	(0.8)	(0.4)	(20.9)	(3.8)	(100.0)
	(30)	(0.0)	(0.1)	(20.7)	(69)	(34)
Total	17 915	800	(0:0)	1 954	393	21 484
iotai	(83 /)	(37)	(20)	(01)	(18)	(100 0)
	(100.4)	(1000)	(2.0)	(100 0)	(1.0)	(100.0)

	Cae fired eveter	Oil fired cyctom	Solid fuel fired cystem	Electrical cyctom	Communal avatar	Total
	Gas nied system	On med system	Solid fuel fired system	Electrical System		Total
Pre 1919	3,675	304	142	382	40	4,544
	(80.9)	(6.7)	(3.1)	(8.4)	(0.9)	(100.0)
	(20.5)	(38.0)	(33.7)	(19.5)	(10.3)	(21.1)
1919 - 1944	3,621	80	82	175	23	3,981
	(91.0)	(2.0)	(2.1)	(4.4)	(0.6)	(100.0)
	(20.2)	(9.9)	(19.5)	(9.0)	(5.9)	(18.5)
1945 - 1964	3,811	129	142	318	39	4,439
	(85.8)	(2.9)	(3.2)	(7.2)	(0.9)	(100.0)
	(21.3)	(16.1)	(33.6)	(16.3)	(10.0)	(20.7)
1965 - 1980	3,852	184	37	488	192	4,752
	(81.1)	(3.9)	(0.8)	(10.3)	(4.0)	(100.0)
	(21.5)	(23.0)	(8.7)	(25.0)	(48.8)	(22.1)
1981 - 1990	1,472	47	17	333	72	1,940
	(75.9)	(2.4)	(0.9)	(17.1)	(3.7)	(100.0)
	(8.2)	(5.9)	(4.0)	(17.0)	(18.3)	(9.0)
Post 1990	1,484	57	3	259	27	1,829
	(81.2)	(3.1)	(0.1)	(14.1)	(1.5)	(100.0)
	(8.3)	(7.1)	(0.6)	(13.2)	(6.8)	(8.5)
Total	17,915	800	422	1,954	393	21,484
	(83.4)	(3.7)	(2.0)	(9.1)	(1.8)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 2.3 Primary space heating fuel - Proportion of space heating fuel by dwelling type

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					count(000s), (row%),	, (column%)
	Gas fired system	Oil fired system	Solid fuel fired system	Electrical system	Communal system	Total
Owner occupied	13,222	708	239	993	40	15,201
	(87.0)	(4.7)	(1.6)	(6.5)	(0.3)	(100.0)
	(73.8)	(88.4)	(56.7)	(50.8)	(10.1)	(70.8)
Private rented	1,558	76	71	445	56	2,205
	(70.6)	(3.4)	(3.2)	(20.2)	(2.5)	(100.0)
	(8.7)	(9.5)	(16.7)	(22.8)	(14.3)	(10.3)
Local Authority	1,953	11	81	236	175	2,457
	(79.5)	(0.5)	(3.3)	(9.6)	(7.1)	(100.0)
	(10.9)	(1.4)	(19.2)	(12.1)	(44.6)	(11.4)
RSL	1,182	6	31	280	122	1,621
	(72.9)	(0.3)	(1.9)	(17.3)	(7.5)	(100.0)
	(6.6)	(0.7)	(7.3)	(14.4)	(31.1)	(7.5)
Total	17,915	800	422	1,954	393	21,484
	(83.4)	(3.7)	(2.0)	(9.1)	(1.8)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.

					count(000s), (row%)	, (column%)
	Gas fired system	Oil fired system	Solid fuel fired system	Electrical system	Communal system	Total
couple under 60	3,436	190	74	286	26	4,012
	(85.7)	(4.7)	(1.8)	(7.1)	(0.6)	(100.0)
	(19.8)	(24.2)	(19.3)	(15.9)	(7.2)	(19.4)
couple 60 or over	2,634	190	62	262	29	3,178
	(82.9)	(6.0)	(2.0)	(8.2)	(0.9)	(100.0)
	(15.2)	(24.3)	(16.3)	(14.6)	(8.1)	(15.4)
couple with children	4,461	234	59	179	26	4,959
	(90.0)	(4.7)	(1.2)	(3.6)	(0.5)	(100.0)
	(25.7)	(29.8)	(15.4)	(9.9)	(7.2)	(24.0)
lone parent with children	1,320	24	35	106	18	1,503
	(87.8)	(1.6)	(2.4)	(7.0)	(1.2)	(100.0)
	(7.6)	(3.1)	(9.2)	(5.9)	(5.1)	(7.3)
large adult household	1,257	44	35	89	22	1,447
	(86.8)	(3.0)	(2.4)	(6.2)	(1.5)	(100.0)
	(7.3)	(5.6)	(9.2)	(5.0)	(6.2)	(7.0)
one person under 60	2,060	40	41	430	65	2,636
	(78.2)	(1.5)	(1.6)	(16.3)	(2.5)	(100.0)
	(11.9)	(5.1)	(10.7)	(23.9)	(18.2)	(12.8)
one person 60 or over	2,159	62	76	447	170	2,914
	(74.1)	(2.1)	(2.6)	(15.3)	(5.8)	(100.0)
	(12.5)	(7.9)	(19.9)	(24.8)	(47.8)	(14.1)
Total	17,326	785	383	1,798	356	20,648
	(83.9)	(3.8)	(1.9)	(8.7)	(1.7)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 2.5 Primary space heating fuel - Proportion of space heating fuel by household composition

					count(000s), (row%)	, (column%)
	Gas fired system	Oil fired system	Solid fuel fired system	Electrical system	Communal system	Total
1st quintile	2,996	37	48	943	268	4,293
	(69.8)	(0.9)	(1.1)	(22.0)	(6.2)	(100.0)
	(16.7)	(4.6)	(11.3)	(48.3)	(68.3)	(20.0)
2nd quintile	3,719	47	82	393	51	4,292
	(86.7)	(1.1)	(1.9)	(9.2)	(1.2)	(100.0)
	(20.8)	(5.9)	(19.4)	(20.1)	(12.9)	(20.0)
3rd quintile	3,825	73	114	257	37	4,306
	(88.8)	(1.7)	(2.6)	(6.0)	(0.9)	(100.0)
	(21.4)	(9.1)	(26.9)	(13.1)	(9.4)	(20.0)
4th quintile	3,790	149	122	214	20	4,296
	(88.2)	(3.5)	(2.9)	(5.0)	(0.5)	(100.0)
	(21.2)	(18.6)	(29.0)	(11.0)	(5.2)	(20.0)
5th quintile	3,585	494	56	147	16	4,298
	(83.4)	(11.5)	(1.3)	(3.4)	(0.4)	(100.0)
	(20.0)	(61.7)	(13.3)	(7.5)	(4.2)	(20.0)
Total	17,915	800	422	1,954	393	21,484
	(83.4)	(3.7)	(2.0)	(9.1)	(1.8)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 2.6 Primary space heating fuel - Proportion of space heating fuel by quintiles of floor area

					count(000s), (row%)	, (column%)
	Gas fired system	Oil fired system	Solid fuel fired system	Electrical system	Communal system	Total
1st quintile	3,208	59	117	540	168	4,093
	(78.4)	(1.4)	(2.9)	(13.2)	(4.1)	(100.0)
	(18.5)	(7.5)	(30.7)	(30.0)	(47.3)	(19.8)
2nd quintile	3,323	96	115	487	98	4,119
	(80.7)	(2.3)	(2.8)	(11.8)	(2.4)	(100.0)
	(19.2)	(12.2)	(30.0)	(27.1)	(27.4)	(19.9)
3rd quintile	3,503	164	63	348	49	4,126
	(84.9)	(4.0)	(1.5)	(8.4)	(1.2)	(100.0)
	(20.2)	(20.9)	(16.5)	(19.3)	(13.7)	(20.0)
4th quintile	3,641	185	53	257	19	4,155
	(87.6)	(4.5)	(1.3)	(6.2)	(0.5)	(100.0)
	(21.0)	(23.6)	(13.9)	(14.3)	(5.4)	(20.1)
5th quintile	3,652	281	34	167	22	4,155
	(87.9)	(6.8)	(0.8)	(4.0)	(0.5)	(100.0)
	(21.1)	(35.8)	(8.9)	(9.3)	(6.2)	(20.1)
Total	17,326	785	383	1,798	356	20,648
	(83.9)	(3.8)	(1.9)	(8.7)	(1.7)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 2.7 Primary space heating fuel - Proportion of space heating fuel by quintiles of income

Table 3.1 Water heating system - Proportion of water heating system

	count(000s), (column%)
Water heating system	Dwellings
With central heating	17,885
	(83.2)
Dedicated boiler	435
	(2.0)
Electric immersion heater	2,579
	(12.0)
Instantaneous (including ket	les) 584
	(2.7)
Total	21,484
	(100.0)

 Table 3.2 Water heating system - Proportion of water heating system by dwelling age

			C	ount(000s), (row%),	(column%)
	With central heating	Dedicated boiler	Electric immersion heater	Instantaneous	Total
End terrace	1,745	41	222	59	2,067
	(84.4)	(2.0)	(10.7)	(2.9)	(100.0)
	(9.8)	(9.5)	(8.6)	(10.1)	(9.6)
Mid terrace	3,595	124	499	228	4,445
	(80.9)	(2.8)	(11.2)	(5.1)	(100.0)
	(20.1)	(28.4)	(19.3)	(39.0)	(20.7)
semi detached	5,792	152	520	122	6,586
	(87.9)	(2.3)	(7.9)	(1.9)	(100.0)
	(32.4)	(34.9)	(20.2)	(20.9)	(30.7)
detached	4,260	52	238	23	4,573
	(93.1)	(1.1)	(5.2)	(0.5)	(100.0)
	(23.8)	(12.1)	(9.2)	(4.0)	(21.3)
purpose built	1,977	57	959	97	3,089
	(64.0)	(1.8)	(31.0)	(3.1)	(100.0)
	(11.1)	(13.0)	(37.2)	(16.5)	(14.4)
converted	516	9	142	56	723
	(71.4)	(1.3)	(19.6)	(7.7)	(100.0)
	(2.9)	(2.1)	(5.5)	(9.5)	(3.4)
Total	17,885	435	2,579	584	21,484
	(83.2)	(2.0)	(12.0)	(2.7)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

			C	ount(000s), (row%),	(column%)
	With central heating	Dedicated boiler	Electric immersion heater	Instantaneous	Total
Pre 1919	3,591	150	511	292	4,544
	(79.0)	(3.3)	(11.2)	(6.4)	(100.0)
	(20.1)	(34.4)	(19.8)	(49.9)	(21.1)
1919 - 1944	3,474	93	300	114	3,981
	(87.3)	(2.3)	(7.5)	(2.9)	(100.0)
	(19.4)	(21.3)	(11.6)	(19.5)	(18.5)
1945 - 1964	3,764	106	477	92	4,439
	(84.8)	(2.4)	(10.7)	(2.1)	(100.0)
	(21.0)	(24.5)	(18.5)	(15.7)	(20.7)
1965 - 1980	3,986	54	656	56	4,752
	(83.9)	(1.1)	(13.8)	(1.2)	(100.0)
	(22.3)	(12.5)	(25.4)	(9.5)	(22.1)
1981 - 1990	1,529	26	363	22	1,940
	(78.8)	(1.3)	(18.7)	(1.2)	(100.0)
	(8.5)	(5.9)	(14.1)	(3.9)	(9.0)
Post 1990	1,541	6	273	9	1,829
	(84.3)	(0.3)	(14.9)	(0.5)	(100.0)
	(8.6)	(1.4)	(10.6)	(1.5)	(8.5)
Total	17,885	435	2,579	584	21,484
	(83.2)	(2.0)	(12.0)	(2.7)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 3.3 Water heating system - Proportion of water heating system by dwelling type

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			C	ount(000s), (row%)	, (column%)
	With central heating	Dedicated boiler	Electric immersion heater	Instantaneous	Total
Owner occupied	13,152	300	1,354	395	15,201
	(86.5)	(2.0)	(8.9)	(2.6)	(100.0)
	(73.5)	(69.0)	(52.5)	(67.6)	(70.8)
Private rented	1,518	69	506	111	2,205
	(68.8)	(3.1)	(23.0)	(5.1)	(100.0)
	(8.5)	(15.9)	(19.6)	(19.1)	(10.3)
Local Authority	1,964	53	387	52	2,457
	(79.9)	(2.2)	(15.8)	(2.1)	(100.0)
	(11.0)	(12.2)	(15.0)	(8.9)	(11.4)
RSL	1,251	13	332	26	1,621
	(77.2)	(0.8)	(20.5)	(1.6)	(100.0)
	(7.0)	(2.9)	(12.9)	(4.4)	(7.5)
Total	17,885	435	2,579	584	21,484
	(83.2)	(2.0)	(12.0)	(2.7)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 3.5 Water heating sy	stem - Proportion	of water heating s	system by	household com	position

			С	ount(000s), (row%)	, (column%)
	With central heating	Dedicated boiler	Electric immersion heater	Instantaneous	Total
couple under 60	3,453	84	380	95	4,012
	(86.1)	(2.1)	(9.5)	(2.4)	(100.0)
	(20.0)	(20.0)	(15.8)	(18.4)	(19.4)
couple 60 or over	2,700	69	348	61	3,178
	(85.0)	(2.2)	(10.9)	(1.9)	(100.0)
	(15.6)	(16.5)	(14.4)	(11.8)	(15.4)
couple with children	4,520	75	269	94	4,959
	(91.2)	(1.5)	(5.4)	(1.9)	(100.0)
	(26.1)	(18.0)	(11.1)	(18.2)	(24.0)
lone parent with children	1,269	20	173	41	1,503
	(84.4)	(1.3)	(11.5)	(2.7)	(100.0)
	(7.3)	(4.7)	(7.2)	(7.9)	(7.3)
large adult household	1,245	30	132	41	1,447
	(86.0)	(2.1)	(9.1)	(2.8)	(100.0)
	(7.2)	(7.1)	(5.5)	(7.8)	(7.0)
one person under 60	1,981	50	519	86	2,636
	(75.2)	(1.9)	(19.7)	(3.2)	(100.0)
	(11.4)	(12.0)	(21.5)	(16.5)	(12.8)
one person 60 or over	2,133	91	590	100	2,914
	(73.2)	(3.1)	(20.2)	(3.4)	(100.0)
	(12.3)	(21.8)	(24.5)	(19.3)	(14.1)
Total	17,301	419	2,410	518	20,648
	(83.8)	(2.0)	(11.7)	(2.5)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

			С	ount(000s), (row%)), (column%)
	With central heating	Dedicated boiler	Electric immersion heater	Instantaneous	Total
1st quintile	2,955	72	1,090	175	4,293
	(68.8)	(1.7)	(25.4)	(4.1)	(100.0)
	(16.5)	(16.6)	(42.3)	(30.0)	(20.0)
2nd quintile	3,424	131	600	137	4,292
	(79.8)	(3.0)	(14.0)	(3.2)	(100.0)
	(19.1)	(30.1)	(23.3)	(23.5)	(20.0)
3rd quintile	3,695	82	408	120	4,306
	(85.8)	(1.9)	(9.5)	(2.8)	(100.0)
	(20.7)	(18.9)	(15.8)	(20.6)	(20.0)
4th quintile	3,828	82	299	88	4,296
	(89.1)	(1.9)	(7.0)	(2.0)	(100.0)
	(21.4)	(18.8)	(11.6)	(15.0)	(20.0)
5th quintile	3,984	68	182	64	4,298
	(92.7)	(1.6)	(4.2)	(1.5)	(100.0)
	(22.3)	(15.7)	(7.1)	(10.9)	(20.0)
Total	17,885	435	2,579	584	21,484
	(83.2)	(2.0)	(12.0)	(2.7)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 3.6 Water heating system - Proportion of water heating system by quintiles of floor area

			CI	ount(000s), (row%)	, (column%)
	With central heating	Dedicated boiler	Electric immersion heater	Instantaneous	Total
1st quintile	3,097	109	741	145	4,093
	(75.7)	(2.7)	(18.1)	(3.6)	(100.0)
	(17.9)	(26.1)	(30.8)	(28.1)	(19.8)
2nd quintile	3,262	88	636	133	4,119
	(79.2)	(2.1)	(15.4)	(3.2)	(100.0)
	(18.9)	(21.0)	(26.4)	(25.7)	(19.9)
3rd quintile	3,459	94	468	105	4,126
	(83.8)	(2.3)	(11.3)	(2.6)	(100.0)
	(20.0)	(22.4)	(19.4)	(20.4)	(20.0)
4th quintile	3,671	72	335	77	4,155
	(88.3)	(1.7)	(8.1)	(1.9)	(100.0)
	(21.2)	(17.1)	(13.9)	(14.9)	(20.1)
5th quintile	3,812	56	230	57	4,155
	(91.7)	(1.3)	(5.5)	(1.4)	(100.0)
	(22.0)	(13.4)	(9.5)	(11.0)	(20.1)
Total	17,301	419	2,410	518	20,648
	(83.8)	(2.0)	(11.7)	(2.5)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 3.7 Water heating system - Proportion of water heating system by quintiles of income

Table 4.1 Type of boiler - Proportion of boiler type

	count(000s),	(col	umn%)
Type of boil	ler	Dw	ellings
Standard bo	iler		9,677
		(45.0)
Back boiler			2,586
		(12.0)
Combination	i boiler		5,432
		(25.3)
Condensing	boiler		527
		(2.5)
No boiler			3,262
		(15.2)
Total			21,484
		(100.0)

Table 4.2 Type of boiler - Proportion of boiler type by dwelling age

				count	(000s), (row%	%), (column%)
	Standard boiler	Back boiler	Combination boiler	Condensing boiler	No boiler	Total
End terrace	883	322	537	42	283	2,067
	(42.7)	(15.6)	(26.0)	(2.0)	(13.7)	(100.0)
	(9.1)	(12.5)	(9.9)	(7.9)	(8.7)	(9.6)
Mid terrace	1,604	634	1,362	109	737	4,445
	(36.1)	(14.3)	(30.6)	(2.4)	(16.6)	(100.0)
	(16.6)	(24.5)	(25.1)	(20.6)	(22.6)	(20.7)
semi detached	2,982	1,177	1,657	162	609	6,586
	(45.3)	(17.9)	(25.2)	(2.5)	(9.3)	(100.0)
	(30.8)	(45.5)	(30.5)	(30.7)	(18.7)	(30.7)
detached	3,237	236	775	128	197	4,573
	(70.8)	(5.2)	(17.0)	(2.8)	(4.3)	(100.0)
	(33.4)	(9.1)	(14.3)	(24.3)	(6.0)	(21.3)
purpose built	808	185	798	70	1,229	3,089
	(26.2)	(6.0)	(25.8)	(2.3)	(39.8)	(100.0)
	(8.3)	(7.2)	(14.7)	(13.3)	(37.7)	(14.4)
converted	163	32	303	17	208	723
	(22.5)	(4.4)	(42.0)	(2.3)	(28.7)	(100.0)
	(1.7)	(1.2)	(5.6)	(3.2)	(6.4)	(3.4)
Total	9,677	2,586	5,432	527	3,262	21,484
	(45.0)	(12.0)	(25.3)	(2.5)	(15.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 4.3 Type of boiler - Proportion of boiler type by dwelling type

				count	t(000s), (row ⁴	%), (column%)
	Standard boiler	Back boiler	Combination boiler	Condensing boiler	No boiler	Total
Pre 1919	1,599	417	1,566	141	821	4,544
	(35.2)	(9.2)	(34.5)	(3.1)	(18.1)	(100.0)
	(16.5)	(16.1)	(28.8)	(26.7)	(25.2)	(21.1)
1919 - 1944	1,699	624	1,150	83	425	3,981
	(42.7)	(15.7)	(28.9)	(2.1)	(10.7)	(100.0)
	(17.6)	(24.1)	(21.2)	(15.8)	(13.0)	(18.5)
1945 - 1964	1,722	1,003	1,017	101	596	4,439
	(38.8)	(22.6)	(22.9)	(2.3)	(13.4)	(100.0)
	(17.8)	(38.8)	(18.7)	(19.2)	(18.3)	(20.7)
1965 - 1980	2,518	436	963	113	721	4,752
	(53.0)	(9.2)	(20.3)	(2.4)	(15.2)	(100.0)
	(26.0)	(16.9)	(17.7)	(21.5)	(22.1)	(22.1)
1981 - 1990	1,082	79	329	32	419	1,940
	(55.8)	(4.1)	(16.9)	(1.6)	(21.6)	(100.0)
	(11.2)	(3.1)	(6.0)	(6.0)	(12.8)	(9.0)
Post 1990	1,057	26	407	57	281	1,829
	(57.8)	(1.4)	(22.3)	(3.1)	(15.4)	(100.0)
	(10.9)	(1.0)	(7.5)	(10.8)	(8.6)	(8.5)
Total	9,677	2,586	5,432	527	3,262	21,484
	(45.0)	(12.0)	(25.3)	(2.5)	(15.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 4.4 Type of boiler - Proportion of boiler type by dwelling tenure

				count	t(000s), (row%	6), (column%)
	Standard boiler	Back boiler	Combination boiler	Condensing boiler	No boiler	Total
Owner occupied	7,691	1,576	3,924	386	1,625	15,201
	(50.6)	(10.4)	(25.8)	(2.5)	(10.7)	(100.0)
	(79.5)	(60.9)	(72.2)	(73.3)	(49.8)	(70.8)
Private rented	651	177	648	48	681	2,205
	(29.5)	(8.0)	(29.4)	(2.2)	(30.9)	(100.0)
	(6.7)	(6.9)	(11.9)	(9.1)	(20.9)	(10.3)
Local Authority	792	590	480	44	551	2,457
	(32.2)	(24.0)	(19.5)	(1.8)	(22.4)	(100.0)
	(8.2)	(22.8)	(8.8)	(8.3)	(16.9)	(11.4)
RSL	544	243	379	49	405	1,621
	(33.5)	(15.0)	(23.4)	(3.0)	(25.0)	(100.0)
	(5.6)	(9.4)	(7.0)	(9.4)	(12.4)	(7.5)
Total	9,677	2,586	5,432	527	3,262	21,484
	(45.0)	(12.0)	(25.3)	(2.5)	(15.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 4.5 Type of boiler - Proportion of boiler type by household composition

				count	t(000s), (row	%), (column%)
	Standard boiler	Back boiler	Combination boiler	Condensing boiler	No boiler	Total
couple under 60	1,984	412	1,081	81	453	4,012
	(49.5)	(10.3)	(26.9)	(2.0)	(11.3)	(100.0)
	(21.0)	(16.6)	(20.8)	(16.0)	(15.1)	(19.4)
couple 60 or over	1,643	459	601	66	409	3,178
	(51.7)	(14.4)	(18.9)	(2.1)	(12.9)	(100.0)
	(17.4)	(18.5)	(11.6)	(13.0)	(13.6)	(15.4)
couple with children	2,499	492	1,490	159	318	4,959
	(50.4)	(9.9)	(30.1)	(3.2)	(6.4)	(100.0)
	(26.4)	(19.8)	(28.7)	(31.5)	(10.6)	(24.0)
lone parent with children	633	236	381	45	209	1,503
	(42.1)	(15.7)	(25.3)	(3.0)	(13.9)	(100.0)
	(6.7)	(9.5)	(7.3)	(8.8)	(7.0)	(7.3)
large adult household	607	192	420	41	189	1,447
	(41.9)	(13.2)	(29.0)	(2.8)	(13.0)	(100.0)
	(6.4)	(7.7)	(8.1)	(8.0)	(6.3)	(7.0)
one person under 60	1,023	221	700	66	626	2,636
	(38.8)	(8.4)	(26.5)	(2.5)	(23.8)	(100.0)
	(10.8)	(8.9)	(13.5)	(13.1)	(20.9)	(12.8)
one person 60 or over	1,067	474	528	49	796	2,914
	(36.6)	(16.3)	(18.1)	(1.7)	(27.3)	(100.0)
	(11.3)	(19.1)	(10.2)	(9.7)	(26.5)	(14.1)
Total	9,456	2,485	5,201	506	3,000	20,648
	(45.8)	(12.0)	(25.2)	(2.5)	(14.5)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 4.6 Type of boiler - Proportion of boiler type by quintiles of floor area

				count	t(000s), (row%	%), (column%)
	Standard boiler	Back boiler	Combination boiler	Condensing boiler	No boiler	Total
1st quintile	1,259	405	1,117	103	1,409	4,293
	(29.3)	(9.4)	(26.0)	(2.4)	(32.8)	(100.0)
	(13.0)	(15.7)	(20.6)	(19.6)	(43.2)	(20.0)
2nd quintile	1,610	654	1,156	90	781	4,292
	(37.5)	(15.2)	(26.9)	(2.1)	(18.2)	(100.0)
	(16.6)	(25.3)	(21.3)	(17.2)	(24.0)	(20.0)
3rd quintile	1,825	728	1,141	96	516	4,306
	(42.4)	(16.9)	(26.5)	(2.2)	(12.0)	(100.0)
	(18.9)	(28.1)	(21.0)	(18.2)	(15.8)	(20.0)
4th quintile	2,108	597	1,134	99	359	4,296
	(49.1)	(13.9)	(26.4)	(2.3)	(8.3)	(100.0)
	(21.8)	(23.1)	(20.9)	(18.8)	(11.0)	(20.0)
5th quintile	2,876	202	884	139	197	4,298
	(66.9)	(4.7)	(20.6)	(3.2)	(4.6)	(100.0)
	(29.7)	(7.8)	(16.3)	(26.3)	(6.0)	(20.0)
Total	9,677	2,586	5,432	527	3,262	21,484
	(45.0)	(12.0)	(25.3)	(2.5)	(15.2)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Table 4.7 Type of boiler - Proportion of boiler type by quintiles of income

				count	(000s), (row%	%), (column%)
	Standard boiler	Back boiler	Combination boiler	Condensing boiler	No boiler	Total
1st quintile	1,365	701	930	104	993	4,093
	(33.3)	(17.1)	(22.7)	(2.5)	(24.3)	(100.0)
	(14.4)	(28.2)	(17.9)	(20.5)	(33.1)	(19.8)
2nd quintile	1,598	621	1,004	77	818	4,119
	(38.8)	(15.1)	(24.4)	(1.9)	(19.9)	(100.0)
	(16.9)	(25.0)	(19.3)	(15.1)	(27.3)	(19.9)
3rd quintile	1,825	553	1,089	85	574	4,126
	(44.2)	(13.4)	(26.4)	(2.1)	(13.9)	(100.0)
	(19.3)	(22.2)	(20.9)	(16.9)	(19.1)	(20.0)
4th quintile	2,169	404	1,086	108	388	4,155
	(52.2)	(9.7)	(26.1)	(2.6)	(9.3)	(100.0)
	(22.9)	(16.3)	(20.9)	(21.4)	(12.9)	(20.1)
5th quintile	2,499	206	1,092	132	226	4,155
	(60.1)	(5.0)	(26.3)	(3.2)	(5.4)	(100.0)
	(26.4)	(8.3)	(21.0)	(26.1)	(7.5)	(20.1)
Total	9,456	2,485	5,201	506	3,000	20,648
	(45.8)	(12.0)	(25.2)	(2.5)	(14.5)	(100.0)
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)