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The final report of the Carbon Emissions Reduction Target (CERT) 2008-2012

Final Report

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Contact: Andrew Abraham

Team: Energy Efficiency

Email: CERT@ofgem.gov.uk

Overview:

This document is the final statutory report on the Carbon Emissions Reduction Target (CERT) 2008-2012. It provides details on the achievement of the targets and obligations under the programme, which ended on 31 December 2012.

CERT required certain gas and electricity suppliers to meet a carbon emissions reduction obligation by promoting the uptake of energy saving measures in domestic properties in Great Britain.

Energy companies were required to achieve an overall target of 293 million lifetime tonnes of carbon dioxide (Mt CO_2) by 31 December 2012. Energy companies achieved 296.9 Mt CO_2.

Context

The government introduced a range of policies to reduce the United Kingdom's greenhouse gas emissions by 80% by 2050. Currently, around 25% of UK emissions result from energy used to heat and power our homes.

The Carbon Emissions Reduction Target (CERT) has, between 2008 and 2012, been the main legislative driver for improving energy efficiency in homes within Great Britain.

The Department of Energy and Climate Change (DECC) was responsible for setting the overall target and for designing the statutory programme through which this target was to be achieved. Ofgem was responsible for administering the programme, on behalf of the Gas and Electricity Markets Authority (the Authority). The CERT obligation period started on 1 April 2008 and finished on 31 December 2012.

Ofgem has reported annually to the Secretary of State for Energy and Climate Change on progress of the programme. This final report concludes the reporting requirements placed upon Ofgem and details the final position of CERT at the end of the obligation period.

Associated documents

- The Electricity and Gas (Carbon Emissions Reduction) Order 2008, Statutory Instrument 2008 No. 188
- The Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2009, Statutory Instrument 2009 No. 1904
- The Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2010, Statutory Instrument 2010 No. 1958
- The Electricity and Gas (Carbon Emissions and Community Energy Saving) (Amendment) Order 2011, Statutory Instrument 2011 No. 3062
- A review of the first year of Carbon Emissions Reduction Target, 1 August 2009
- A review of the second year of Carbon Emissions Reduction Target, 2 August 2010
- A review of the third year of Carbon Emissions Reduction Target, 25 August 2011
- A review of the fourth year of Carbon Emissions Reduction Target, 7 August 2012
- Carbon Emissions Reduction Target (CERT) 2008-11 Supplier Guidance V3, February 2011.

Contents

Executive Summary

This report fulfils Ofgem's reporting duties to the Secretary of State for Energy and Climate Change under the Electricity and Gas (Carbon Emissions Reduction) Order 2008 (as amended). The report details both:

- Progress towards the overall CERT target and the Insulation, Priority Group[1] and Super Priority Group targets.
- Energy company progress against their main obligations and each of their Insulation, Priority Group and Super Priority Group sub-obligations.

Energy companies achieved carbon savings by setting up schemes to promote and deliver energy saving measures to domestic energy users.

The licence holders of British Gas, EDF Energy, E.ON, npower, Scottish Power and SSE[2] were set carbon saving obligations to achieve an overall target of 293 Mt CO_2.

Unless otherwise stated, all carbon savings include carryover from the Energy Efficiency Commitment 2005-2008 (EEC2), the predecessor programme to CERT.

Overall position

In parallel with the CERT scheme, the CESP scheme delivered carbon savings to consumers. Across both schemes more than 99% of the combined carbon savings were achieved.

By the end of CERT, energy companies had delivered:

- 296.9 Mt CO_2 of carbon savings, equivalent to 101.3% of the overall CERT target of 293 Mt CO_2. In order to meet the main target, all energy companies had to meet their main obligations. As two did not, the main target was not met.
- 41.3% of overall carbon savings to the Priority Group, against a target of 40%. In order to meet the Priority Group target, all energy companies had to meet their Priority Group obligations. As one did not, the Priority Group target was not met.
- 16.6 Mt CO_2 of carbon savings to the Super Priority Group, equivalent to 102.6% of the 16.2 Mt CO_2 target. In order to meet the Super Priority Group target, all energy companies had to meet their Super Priority Group obligations. As one did not, the Super Priority Group target was not met.
- 75.1 Mt CO_2 of carbon savings by installing measures eligible under the Insulation target, equivalent to 102.3% of the 73.4 Mt CO_2 target. In order to meet the Insulation target, all energy companies had to meet their Insulation obligations. As two did not, the Insulation target was not met.

Energy companies can carry forward excess activity from CERT into the Energy Companies Obligation (ECO). This is not taken into consideration in this report.

[1] CERT required 40% of the overall target to be achieved in the Priority Group. We refer to this as the 'Priority Group target'.
[2] Prior to 2010 SSE was Scottish and Southern Energy plc

Under the Order, obligations were imposed on individual licence holders rather than on the parent company of a group of licence holders. However, for clarity and ease of reporting, the analysis presented here is aggregated at group level (referred to as an 'energy company').

The table below shows energy company compliance against the total obligations of the group. Each licence holder within an energy company must achieve its main obligation and sub-obligations for that energy company to be shown as compliant. Four energy companies complied with their main obligations: EDF Energy, E.ON, npower, Scottish Power. Two energy companies did not comply: British Gas and SSE.

	Obligations			
Energy company	Overall	Priority Group	Super Priority Group	Insulation obligation
British Gas	Non-compliant	Compliant	Compliant	Non-compliant
EDF Energy	Compliant	Compliant	Compliant	Compliant
E.ON	Compliant	Compliant	Compliant	Compliant
npower*	Compliant	Compliant	Compliant	Compliant
Scottish Power	Compliant	Compliant	Compliant	Compliant
SSE**	Non-compliant	Non-compliant	Non-compliant	Non-compliant

*npower submitted information on 22 April, too late to be taken into account in determining compliance. This data would not have affected its position in this table.
**SSE submitted information on 19 April, too late to be taken into account in determining compliance. This information might have affected its position in this table.

Key findings

Below are the key findings of the programme:

- The Insulation obligation increased the delivery of professionally installed insulation measures.
- The market transformation uplift incentivised innovative measures, with energy companies almost meeting the 10% limit on this type of activity.
- Demonstration actions only contributed a small amount of carbon savings. However, a diverse range of new innovative measures were funded through this mechanism.
- Energy companies were successful at delivering measures to the Priority Group. However, they struggled to meet the Super Priority Group obligation, as they found identifying Super Priority Group households challenging.
- Towards the end of the programme two energy companies were able to work with Department for Work and Pensions (DWP) to cross check data in time to be taken into account in determining compliance. This enabled them to meet their Super Priority Group obligations.

Ofgem will consider whether to exercise its enforcement powers in relation to any energy company which was non-compliant in its obligations. This could include the imposition of a financial penalty.

1. Introduction

1.1. The Carbon Emissions Reduction Order 2008 (as amended) required certain gas and electricity suppliers to achieve targets for a reduction in carbon emissions generated in the domestic sector by promoting the uptake of energy efficiency measures in domestic properties in Great Britain.

1.2. Under the Order, obligations were imposed on individual licence holders rather than on the parent company of a group of licence holders. However, for clarity and ease of reporting, the analysis presented here is aggregated at group level (referred to as an 'energy company').

1.3. The Government amended the CERT legislation in 2009 and 2010 to restructure and extend CERT to 31 December 2012. Energy companies were required to achieve a revised overall target of 293 Mt CO_2 and three sub targets:

- At least 40% of the target had to be met by promoting to Priority Group consumers[3], defined as those in receipt of certain income-related benefits or those over 70 years of age.
- 16.2 Mt CO_2 had to be met by promoting to Super Priority Group consumers. The Super Priority Group was a subset of the Priority Group and includes those on certain qualifying benefits, for example households in receipt of child tax credits and under an income threshold.
- 73.4 Mt CO_2 had to be met towards the Insulation target by promoting professionally installed insulation measures.

1.4. The 2010 amendment Order also required all lighting measures to be requested in writing by the consumer from 1 January 2010 and prevented all retail lighting activity (excluding LEDs) from 1 April 2011.

1.5. In December 2011, following a consultation by DECC, the threshold for mandatory participation in CERT increased from 50,000 to 250,000 customers. The energy companies with CERT obligations were British Gas, EDF Energy, E.ON, npower, Scottish Power and SSE.

1.6. Energy companies submitted their final notification of carbon saving measures to Ofgem on 31 January 2013. These have been verified by Ofgem in accordance with the Supplier Guidance and the Order. The carbon savings in this report have been determined by Ofgem and are inclusive of market transformation and Priority Group flexibility uplifts unless otherwise stated.

1.7. Previous annual reports were based on provisional data from energy companies. This report is based on our actual determination of carbon savings, upon which we have assessed energy company compliance against

[3] We refer to this as the 'Priority Group target'.

their obligations. In some cases negative figures occur in tables where final compliance figures are lower than the provisional figures reported in previous annual reports.

1.8. The carbon savings presented in this report are from all measures determined under CERT. Some measures delivered by an energy company are not required by that company to meet its obligations. Energy companies will be able to carry forward some of these measures into the Energy Companies Obligation 2012 (ECO). This will be determined separately and is not considered in this report.

1.9. Due to rounding, some numbers provided in the report may not exactly match those cited in the text and numbers may not exactly sum to the totals in tables.

1.10. The remaining chapters of the report provide information on specific aspects of the CERT programme:

- Chapter 2 describes overall progress towards the CERT target including the overall carbon savings achieved and information on energy companies' final positions.
- Chapter 3 looks at individual energy company progress towards their main obligations and sub-obligations.
- Chapter 4 analyses the measures and types of qualifying action delivered under CERT.
- Chapter 5 presents technical monitoring results and provides information on energy company audits.
- Chapter 6 focuses on our analysis of the programme.

2. The final CERT position

Chapter summary

This chapter outlines the:

- carbon savings achieved during the five years of CERT, against the CERT target of 293 Mt CO_2
- overall carbon savings achieved against the Insulation, Priority Group and Super Priority Group targets
- information on energy companies' final positions.

Measures carried forward from EEC2 2005-2008

2.1. As reported in previous CERT annual reports, energy companies carried over 37.8 Mt CO_2 of carbon savings from EEC2 (2005-2008) into CERT. These carbon savings account for 12.9% of the overall CERT target of 293 Mt CO_2. Unless otherwise stated, all carbon savings include EEC2 carryover.

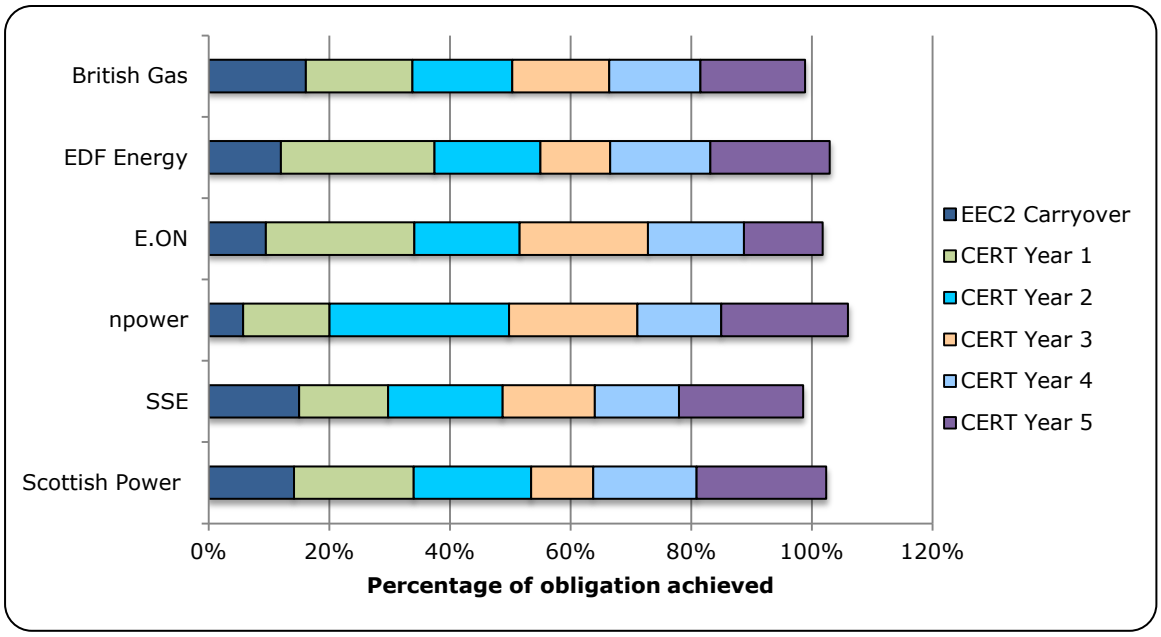
Progress to the end of CERT

2.2. By 31 December 2012, energy companies had achieved:

- 296.9 Mt CO_2 of carbon savings, equivalent to 101.3% of the overall CERT target of 293 Mt CO_2. In order to meet the main target, all energy companies had to meet their main obligations. As two did not, the main target was not met.
- 41.3% of overall carbon savings to the Priority Group, against a target of 40%. In order to meet the Priority Group target, all energy companies had to meet their Priority Group obligations. As one did not, the Priority Group target was not met.
- 16.6 Mt CO_2 of carbon savings to the Super Priority Group, equivalent to 102.6% of the 16.2 Mt CO_2 target. In order to meet the Super Priority Group target, all energy companies had to meet their Super Priority Group obligations. As one did not, the Super Priority Group target was not met.
- 75.1 Mt CO_2 of carbon savings by installing measures eligible under the Insulation target, equivalent to 102.3% of the 73.4 Mt CO_2 target. In order to meet the Insulation target, all energy companies had to meet their Insulation obligations. As two did not, the Insulation target was not met.

2.3. Any energy company with an excess of activity will be able to notify Ofgem with the measures it plans to carry forward to ECO.

Figure 2.1 Each energy company's year-by-year progress towards their main obligation



2.4. Figure 2.1 illustrates energy company activity over five years. Energy companies showed a significant increase in carbon savings achieved in the final year of the programme. This is, in part, because market transformation uplifts for all measures are only applied at the end of the obligation period, as required in the Order.

Table 2.1 Carbon savings by measure type and year as a percentage of total carbon savings achieved

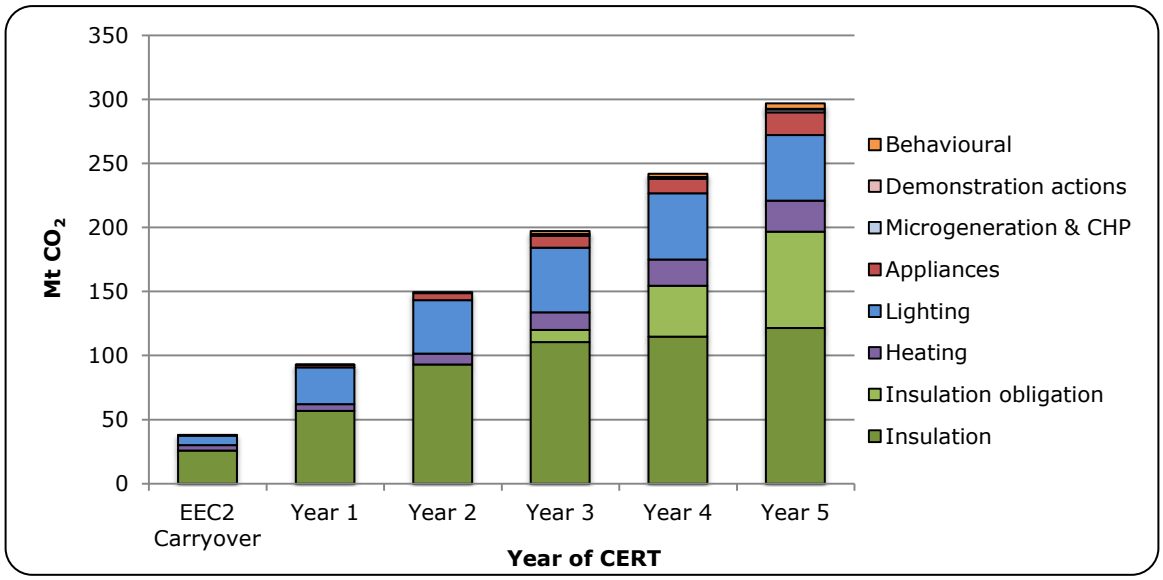
Measure	EEC2 Carryover	CERT Year 1	CERT Year 2	CERT Year 3	CERT Year 4	CERT Year 5	Total
Insulation (inc. Insulation obligation)	8.7%	10.4%	12.2%	9.1%	11.7%	14.2%	66.2%
Heating	1.4%	0.4%	1.1%	1.8%	2.2%	1.3%	8.2%
Lighting	2.5%	7.1%	4.4%	2.9%	0.4%	-0.2%	17.3%
Appliances	0.0%	0.6%	1.2%	1.3%	0.6%	2.2%	5.9%
Microgeneration & CHP	0.0%	0.1%	0.2%	0.3%	0.0%	0.2%	0.8%
Behavioural	0.0%	0.0%	0.0%	0.7%	0.1%	0.6%	1.5%
Demonstration actions	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Total	12.7%	18.6%	19.0%	16.1%	15.0%	18.5%	100.0%

2.5. During the first three years of the programme, insulation and lighting measures contributed the highest proportion of carbon savings. In Year 4, insulation and heating measures provided the highest proportion, largely due to the legislative change in April 2011 which removed Compact Fluorescent Lamps (CFLs) from CERT. In the final year, insulation activity made up a higher percentage of carbon savings than in previous years due to a surge of

insulation activity towards the Insulation obligation. Carbon savings attributed to appliances and heating measures were also high in the final year, in part due to the application of market transformation uplifts.

Measures delivered

Figure 2.2 Cumulative carbon savings by measure type



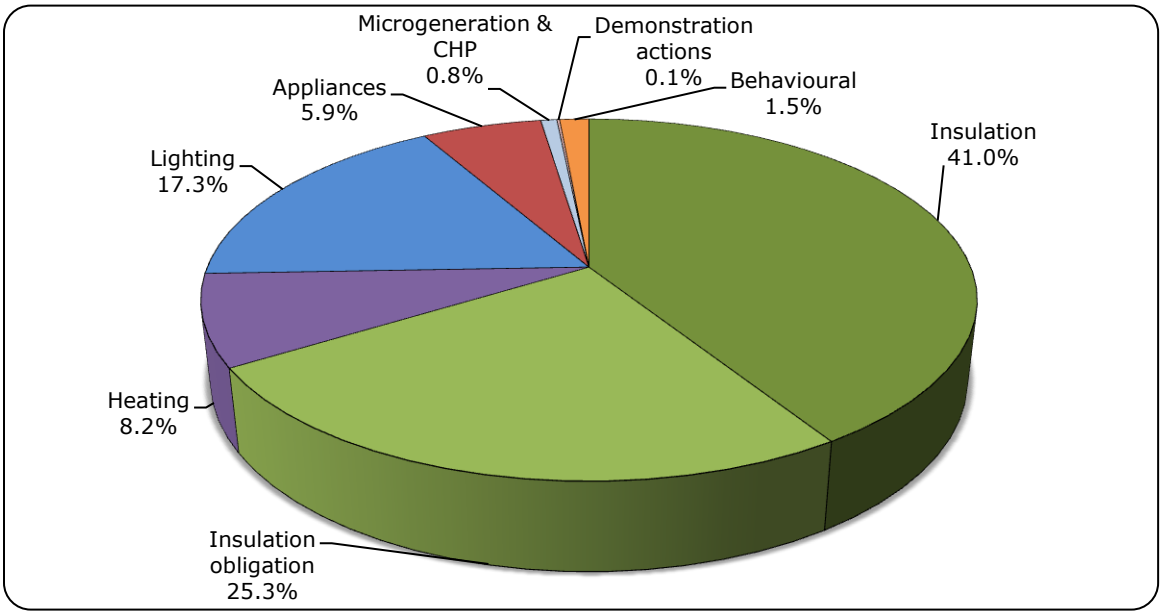
2.6. The activity energy companies undertook can be broken down into eight main measure types: insulation[4], Insulation obligation, lighting, heating, microgeneration & CHP, behavioural, demonstration actions and appliances.

2.7. Figure 2.2 shows the cumulative carbon savings achieved year-on-year, broken down by measure type. Progress towards the overall CERT target was steady through Years 1-3, slowed in Year 4 and increased again in Year 5.

2.8. The rate of delivery of microgeneration & CHP, behavioural and appliance measures increased by varying degrees from Year 4 to Year 5. The rate of delivery of heating measures grew in the final two years, increasing by 18% from Year 4 and contributing significantly to the overall carbon savings for Year 5. This is potentially due to the fact heating measures were eligible under the Super Priority Group target and a number of energy companies increased this activity to ensure compliance.

[4] This includes all eligible insulation measures

Figure 2.3 Carbon savings by measure type



2.9. Figure 2.3 shows carbon savings achieved by each measure type over the five years of CERT. Insulation measures (including Insulation obligation) accounted for two thirds of total carbon savings. Lighting measures accounted for 17.3% of carbon savings. Nearly 10% of carbon savings were attributed to heating measures, 5.9% to appliances and the remainder of delivery was split between microgeneration & CHP, behavioural measures and demonstration actions.

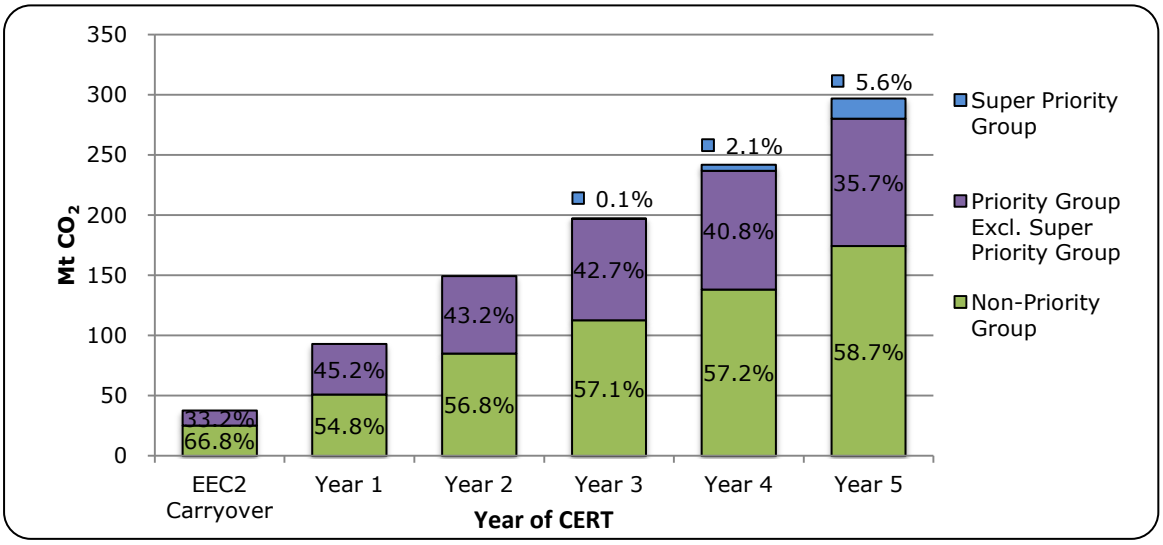
The Priority Group and Super Priority Group

2.10. The Priority Group included those aged 70 and over and those on a wider set of qualifying benefits. The Super Priority Group represents a subset of the Priority Group. It includes those on certain qualifying benefits as defined in the Order, including households in receipt of child tax credits and under an income threshold. Unless otherwise stated, the figures presented below as Priority Group include carbon savings achieved towards the Super Priority Group.

2.11. Energy companies achieved a combined total of 16.6 Mt CO_2 towards the Super Priority Group target of 16.2 Mt CO_2 (102.6%). This represents just over 5% of total carbon savings achieved under CERT.

2.12. Of the total carbon savings achieved by the end of CERT, 41.3% resulted from measures installed in, or provided to, Priority Group households. This equated to 122.5 Mt CO_2. This was above the minimum 40% required by the Order. The remaining carbon savings achieved were from measures promoted to non-Priority Group households.

Figure 2.4 Cumulative carbon savings by year and consumer group



2.13. Figure 2.4 illustrates year-on-year progress to the overall target and the proportion of the target achieved through the Priority and Super Priority Groups. Priority Group delivery stayed above the required 40% throughout CERT.

2.14. Table 2.2 shows overall delivery by measure type and consumer group. Insulation and lighting measures contributed the majority of carbon savings in both Priority and non-Priority Groups, whereas insulation contributed the majority of carbon savings in the Super Priority Group as these were prescribed measures under this target.

Table 2.2 Carbon savings in the Priority, Super Priority and non-Priority Groups as a percentage of total carbon savings

	EEC2 Carryover	Insulation (inc. Insulation obligation)	Lighting	Appliances	Heating	Micro-generation & CHP	Demon-stration actions	Behaviour-al	Total
Non-Priority Group	8.5%	30.9%	8.9%	3.7%	4.9%	0.6%	0.1%	1.1%	58.7%
Priority Group	4.2%	26.6%	5.8%	2.2%	1.8%	0.2%	0.0%	0.4%	41.3%
Super Priority Group	0.0%	5.3%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	5.6%
Total	12.7%	57.5%	14.7%	5.9%	6.8%	0.8%	0.1%	1.5%	100.0%

3. Energy company progress

Chapter summary

This chapter presents each energy company's progress against their main obligations and sub-obligations to the end of CERT. The information presented is based on the energy companies' approved schemes and their carbon savings notified by 31 January 2013.

Summary

3.1. Energy companies were set a carbon emissions reduction obligation according to the number of customers on their domestic licences. In February 2012 final obligations were calculated. The achieved carbon savings detailed in this chapter are compared against these final obligations.

3.2. Energy companies sought to meet these obligations by setting up schemes to promote and deliver measures to reduce domestic carbon emissions. Energy companies had flexibility in choosing the measure types and delivery mechanisms that they promoted.

3.3. As part of our administrative duties, we monitored each energy company's progress and compliance against their obligations. For each scheme we determined whether the activity could be considered a qualifying action under the Order, ie, whether it achieved improvements in energy efficiency and reduced energy consumption. All qualifying actions were completed by 31 December 2012 and completion reports and final notifications of completed actions were submitted to Ofgem by 31 January 2013.

3.4. The compliance of each obligated licence holder against its main and sub-obligations is set out in Appendix 1.

3.5. Table 3.1 illustrates the final position of each energy company against their obligations. The carbon savings achieved by energy companies include those carried over from EEC2. Energy companies had to achieve their main obligations and three sub-obligations to be compliant. Four energy companies complied with their main obligations, two energy companies were non-compliant with their Insulation obligations and one energy company was non-compliant with its Priority Group and Super Priority Group obligations.

3.6. Table 3.1 shows that each energy company achieved between 98.9% and 106.0% of its main obligations.

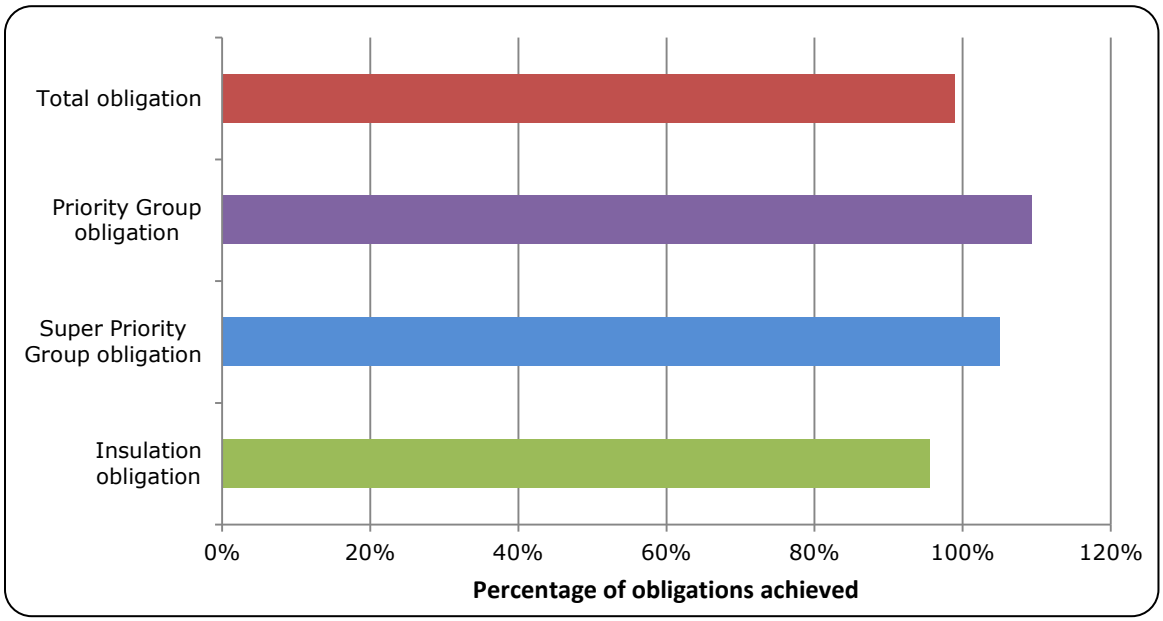
Table 3.1 Energy company achievement against their obligations

	Main obligations	Priority Group obligations	Super Priority Group obligations	Insulation obligations
British Gas	98.9%	109.4%	105.0%	95.5%
EDF Energy	103.0%	108.3%	116.1%	109.6%
E.ON	101.8%	102.5%	105.6%	104.4%
npower	106.0%	100.2%	107.4%	109.2%
SSE	98.6%	99.7%	73.8%	99.9%
Scottish Power	102.4%	102.0%	119.2%	106.2%

British Gas

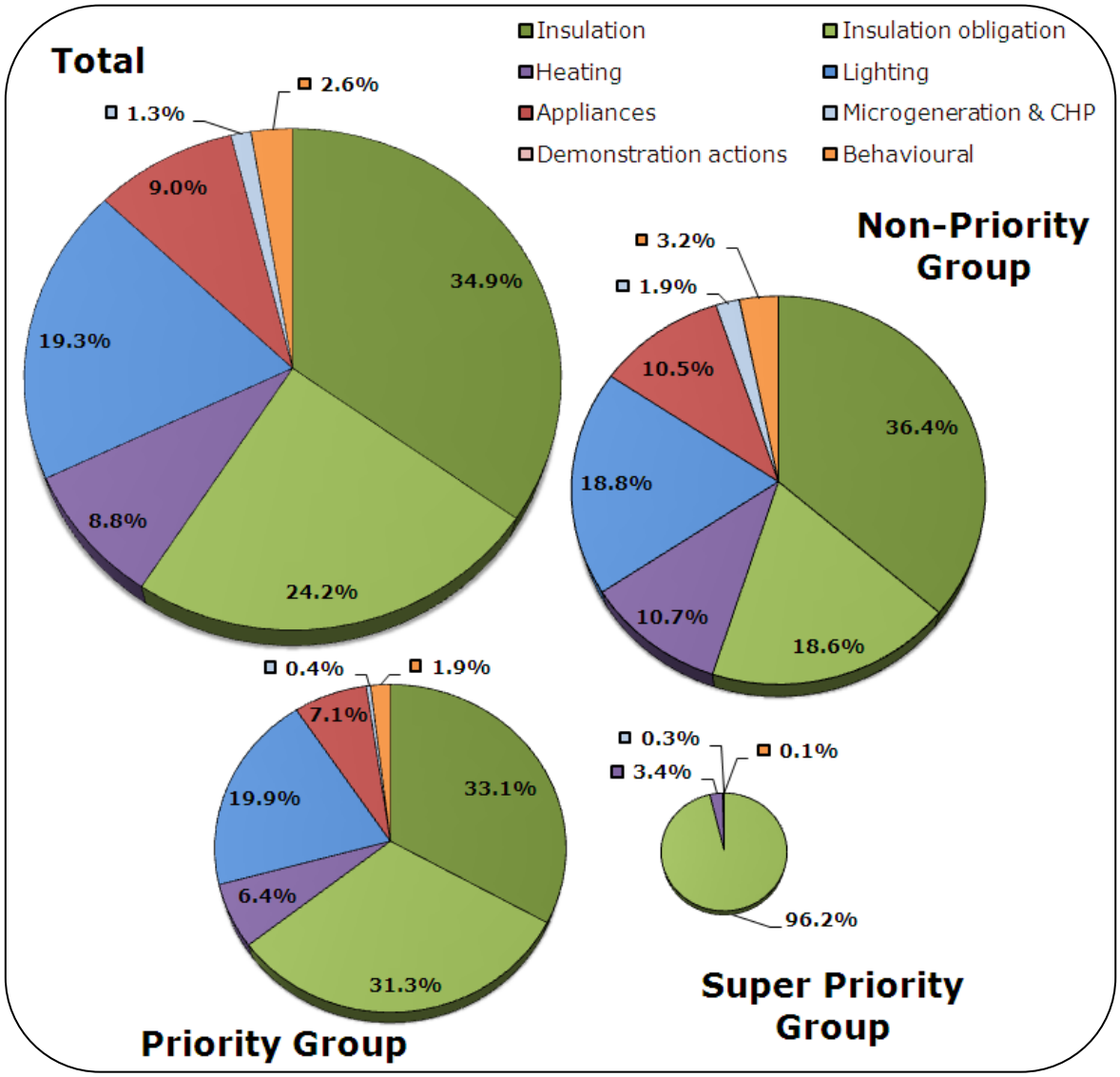
3.7. British Gas achieved 98.9% of its main obligations by the end of CERT. It achieved 109.4% of its Priority Group obligations, 105.0% of its Super Priority Group obligations and 95.5% of its Insulation obligations. The results of a DWP exercise (see para 6.19 (ii)) were taken into account in assessing compliance by British Gas. British Gas did not achieve its main obligations and its Insulation obligations therefore it is non-compliant. British Gas has taken steps to mitigate its shortfall after the end of the obligation period.

Figure 3.1 British Gas – percentage of obligations achieved



3.8. As shown in Figure 3.2, British Gas achieved nearly 60% of its overall carbon savings by promoting insulation measures and roughly 20% by promoting lighting measures. Insulation and lighting measures were promoted at consistent levels across all consumer groups. Insulation obligation measures accounted for a quarter of overall carbon savings and nearly all carbon savings in the Super Priority Group.

Figure 3.2 British Gas – carbon savings by measure type and consumer group



3.9. Appliances accounted for nearly 10% of overall carbon savings and were most prevalent in the non-Priority Group (10.5% of carbon savings). Heating measures accounted for 8.8% of overall carbon savings and were most prevalent in the non-Priority Group (10.7% of carbon savings). Super Priority Group delivery was dominated by the Insulation obligation.

3.10. The remaining carbon savings were achieved through the promotion of low levels of behavioural measures, microgeneration & CHP and demonstration actions.

3.11. British Gas achieved 16.3% of its main obligations through carbon savings carried over from EEC2. Over the first four years of CERT, British Gas achieved an average of 16.5% of its main obligations per year. 17.5% of its main obligations were delivered in the final year.

Table 3.2 British Gas – percentage of carbon savings achieved by measure type and year

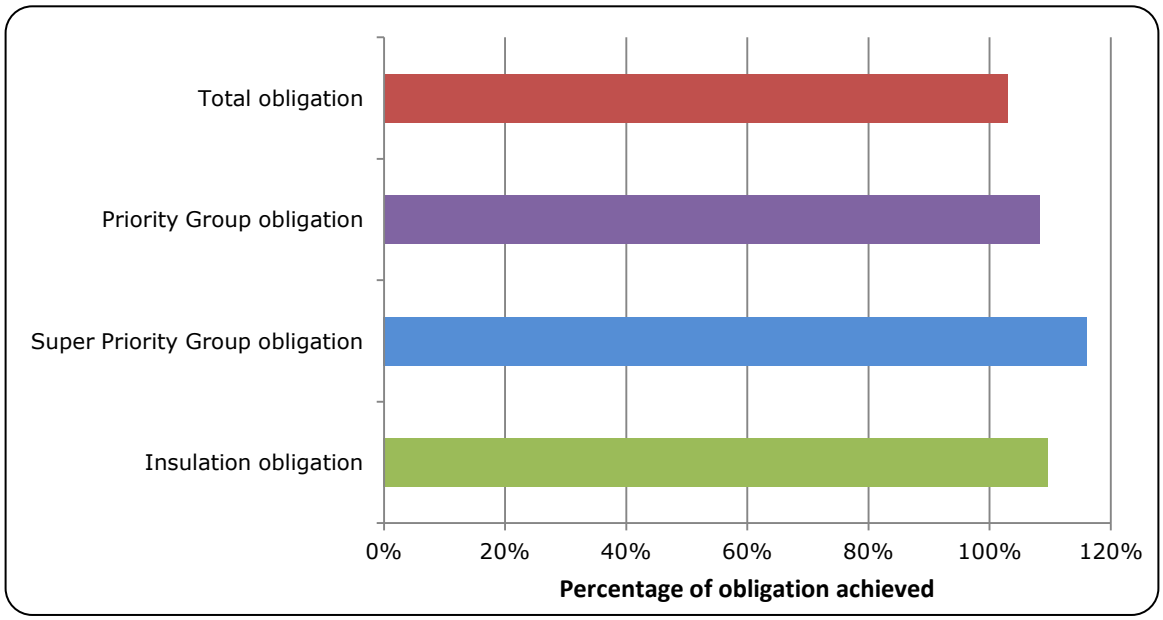
Measure	EEC2 Carryover	CERT Year 1	CERT Year 2	CERT Year 3	CERT Year 4	CERT Year 5	Total
Insulation	12.5%	7.2%	9.2%	3.8%	2.3%	0.0%	34.9%
Insulation obligation	0.0%	0.0%	0.0%	2.1%	10.5%	11.7%	24.2%
Heating	2.6%	0.5%	0.7%	2.4%	1.8%	0.7%	8.8%
Lighting	1.2%	9.1%	4.9%	3.7%	0.4%	0.0%	19.3%
Appliances	0.0%	1.0%	1.7%	2.6%	0.1%	3.6%	9.0%
Microgeneration & CHP	0.0%	0.1%	0.3%	0.4%	0.1%	0.4%	1.3%
Behavioural	0.0%	0.0%	0.0%	1.2%	0.1%	1.2%	2.6%
Demonstration actions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	16.3%	17.9%	16.7%	16.2%	15.3%	17.5%	100.0%

3.12. During CERT, British Gas undertook several small transfers with other energy companies. British Gas also received transfers of measures equivalent to 1.5% of its main obligations from other energy companies.

EDF Energy

3.13. EDF Energy met its main obligations by the end of CERT. It achieved 108.3% of its Priority Group obligations, 116.1% of its Super Priority Group obligations and 109.6% of its Insulation obligations. EDF Energy did not submit to us any additional Super Priority Group activity identified through DWP (see para 6.19 (ii)). As EDF Energy achieved its main obligations and all of its sub-obligations it is compliant.

Figure 3.3 EDF Energy – percentage of obligations achieved

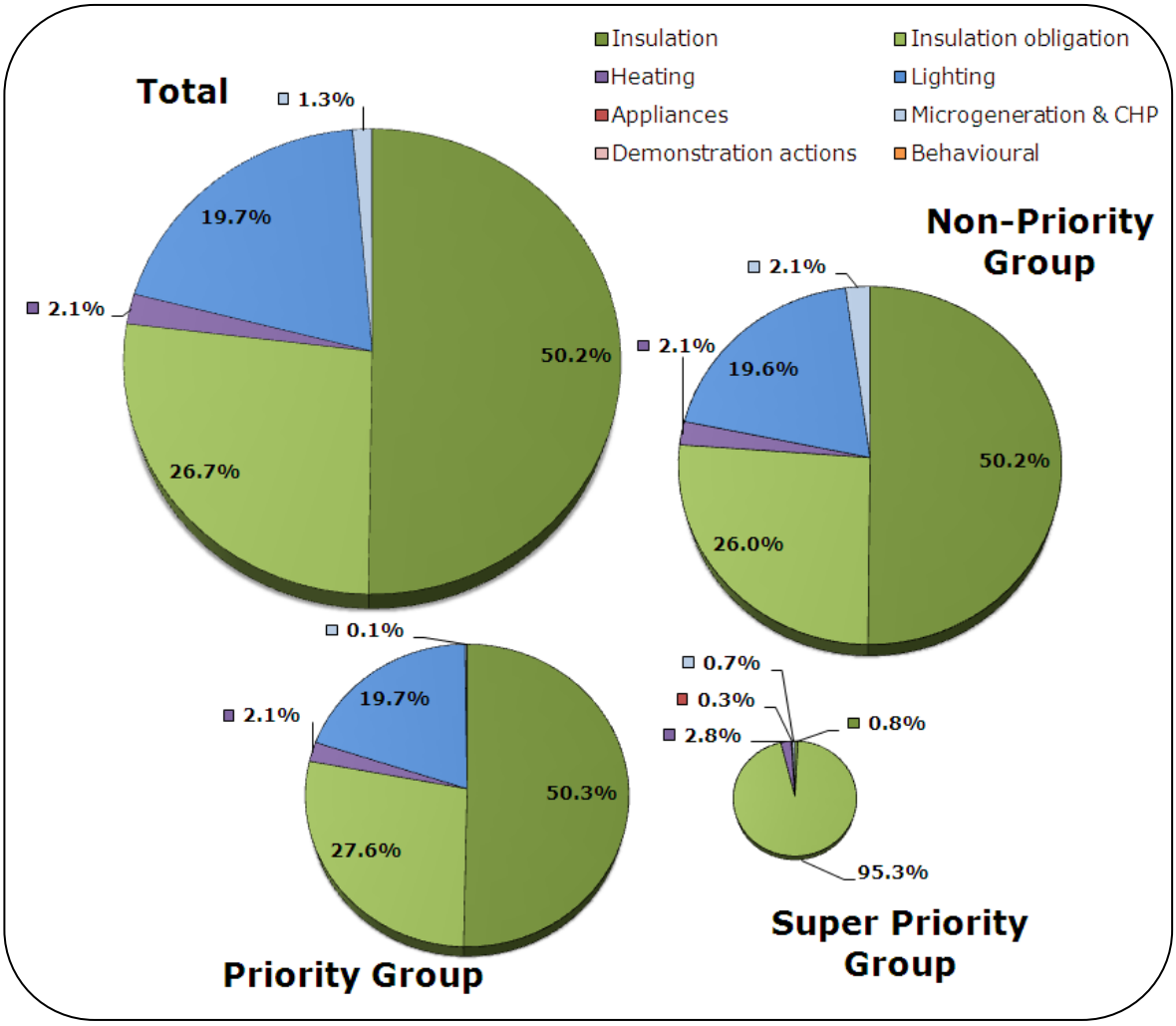


3.14. As shown in Figure 3.4, EDF Energy achieved three quarters of its overall carbon savings by promoting insulation measures and roughly 20% by promoting lighting measures. Insulation and lighting measures were promoted at similar levels across non-Priority and Priority groups. Insulation obligation measures accounted for a quarter of overall carbon savings and nearly all carbon savings in the Super Priority Group.

3.15. Heating measures accounted for 2.1% of overall carbon savings and were most prevalent in the Super Priority Group (2.8% of carbon savings). Super Priority Group delivery was dominated by the Insulation obligation.

3.16. The remaining carbon savings were achieved through the promotion of low levels of appliances, microgeneration & CHP and demonstration actions.

Figure 3.4 EDF Energy – carbon savings by measure type and consumer group



3.17. EDF Energy achieved just over 10% of its main obligations through carbon savings carried over from EEC2. Over the first four years of the programme EDF Energy achieved an average of 17.3% per year across the first four years and 19.2% of its main obligations in the final year.

Table 3.4 EDF Energy – percentage of carbon savings achieved by measure type and year

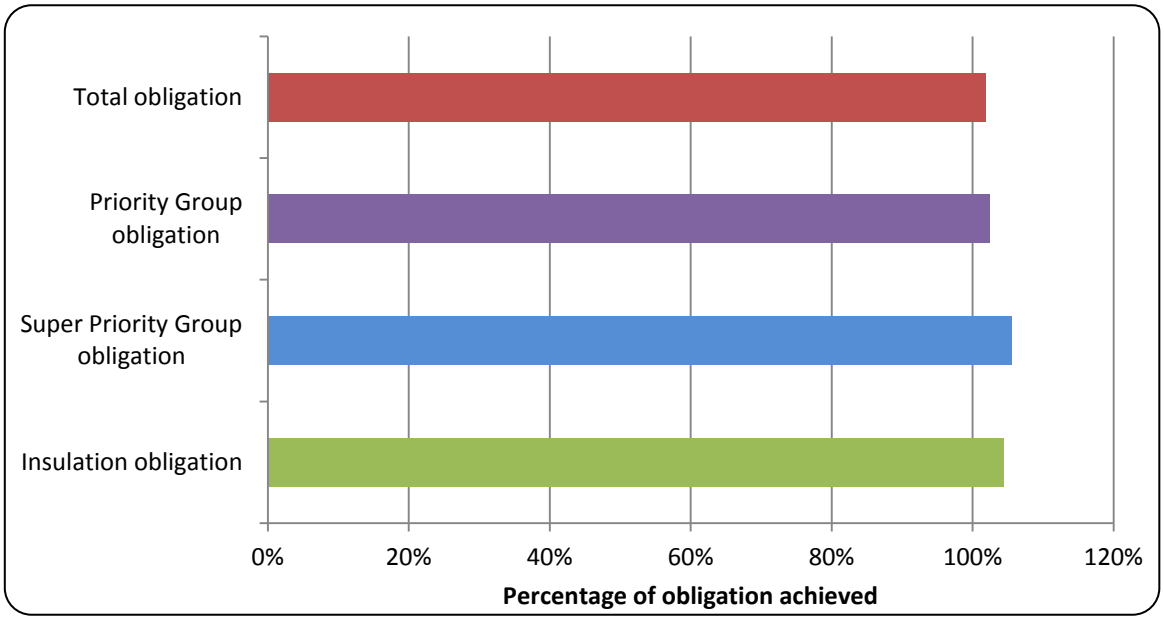
Measure	EEC2 Carryover	CERT Year 1	CERT Year 2	CERT Year 3	CERT Year 4	CERT Year 5	Total
Insulation	9.7%	13.3%	10.1%	7.3%	3.0%	6.9%	50.2%
Insulation obligation	0.0%	0.0%	0.0%	1.8%	11.4%	13.5%	26.7%
Heating	0.0%	0.0%	0.4%	0.3%	1.0%	0.4%	2.1%
Lighting	2.0%	11.3%	6.1%	1.4%	0.6%	-1.7%	19.7%
Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Microgeneration & CHP	0.0%	0.1%	0.3%	0.5%	0.2%	0.2%	1.3%
Behavioural	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Demonstration actions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	11.6%	24.7%	17.0%	11.2%	16.1%	19.2%	100.0%

3.18. During the final year, EDF Energy undertook small transfers with other energy companies. In the first year, EDF Energy received transfers of measures equivalent to 2.6% of its main obligations from another energy company.

E.ON

3.19. E.ON achieved 101.8% of its main obligations by the end of CERT. It achieved 102.5% of its Priority Group obligations, 105.6% of its Super Priority Group obligations and 104.4% of its Insulation obligations. E.ON did not submit to us any additional Super Priority Group activity identified through DWP (see para 6.19 (ii)). As E.ON achieved its main obligations and all of its sub-obligations it is compliant.

Figure 3.5 E.ON – percentage of obligations achieved

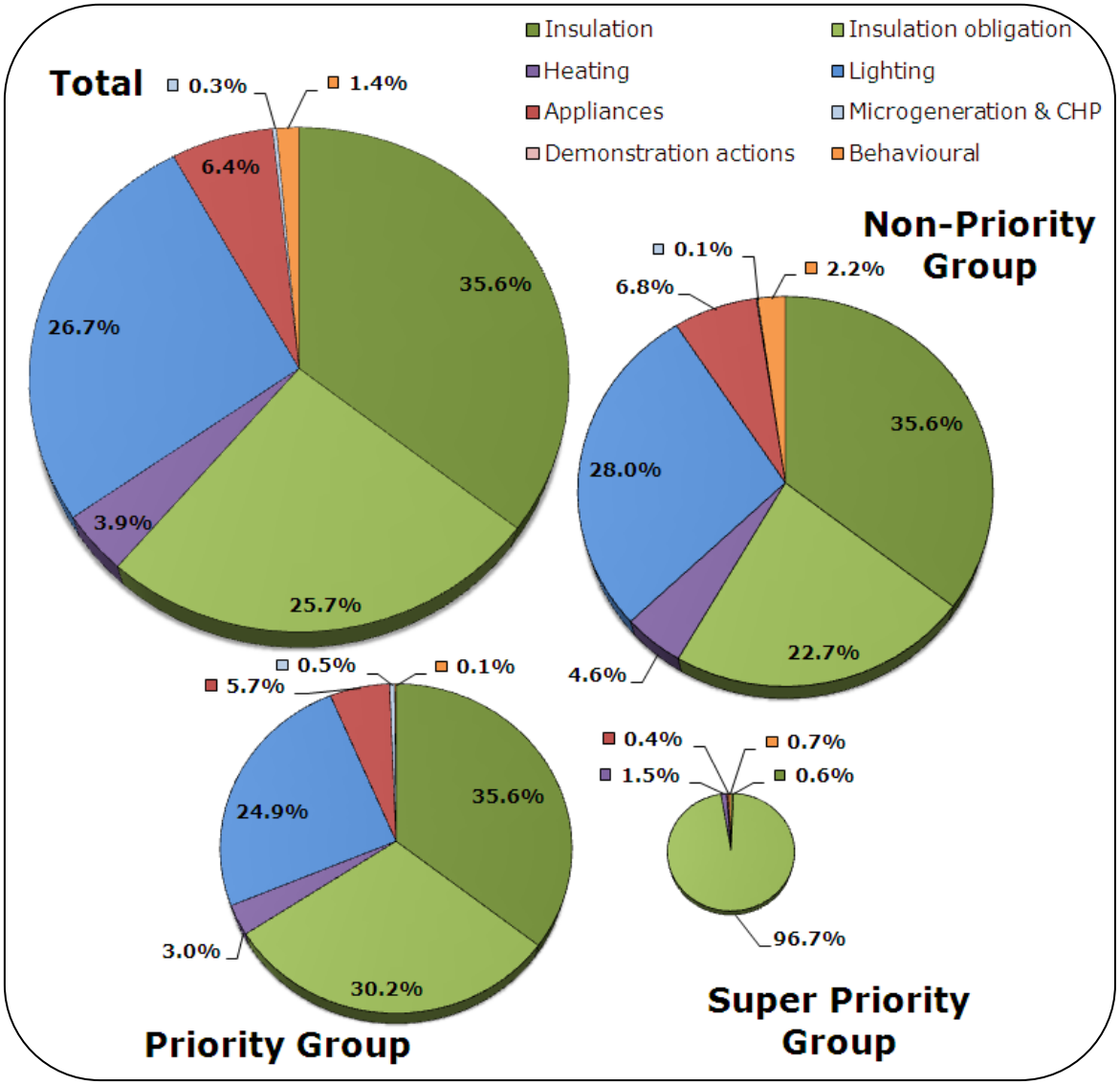


3.20. As shown in Figure 3.6, E.ON achieved roughly 60% of carbon savings by promoting insulation measures and a quarter by promoting lighting measures. Lighting measures were promoted at consistent levels across non-Priority and Priority Groups, however, insulation featured more in the Priority Group when compared to the non-Priority Group. Insulation obligation measures accounted for a quarter of overall carbon savings and almost all carbon savings in the Super Priority Group.

3.21. Appliances accounted for 6.4% of overall carbon savings. Heating measures accounted for 3.9% of overall carbon savings and were most prevalent in the non-Priority group (4.6% of carbon savings).

3.22. The remaining carbon savings were achieved through the promotion of low levels of behavioural measures and microgeneration & CHP measures.

Figure 3.6 E.ON – carbon savings by measure type and consumer group



3.23. As presented in Table 3.5, E.ON achieved nearly 10% of its main obligations through carbon savings carried over from EEC2. Carbon savings achieved in the final year of the programme accounted for 12.9% of its main obligations, compared to an average of nearly 20% per year over the first four years.

Table 3.5 E.ON – percentage of carbon savings achieved by measure type and year

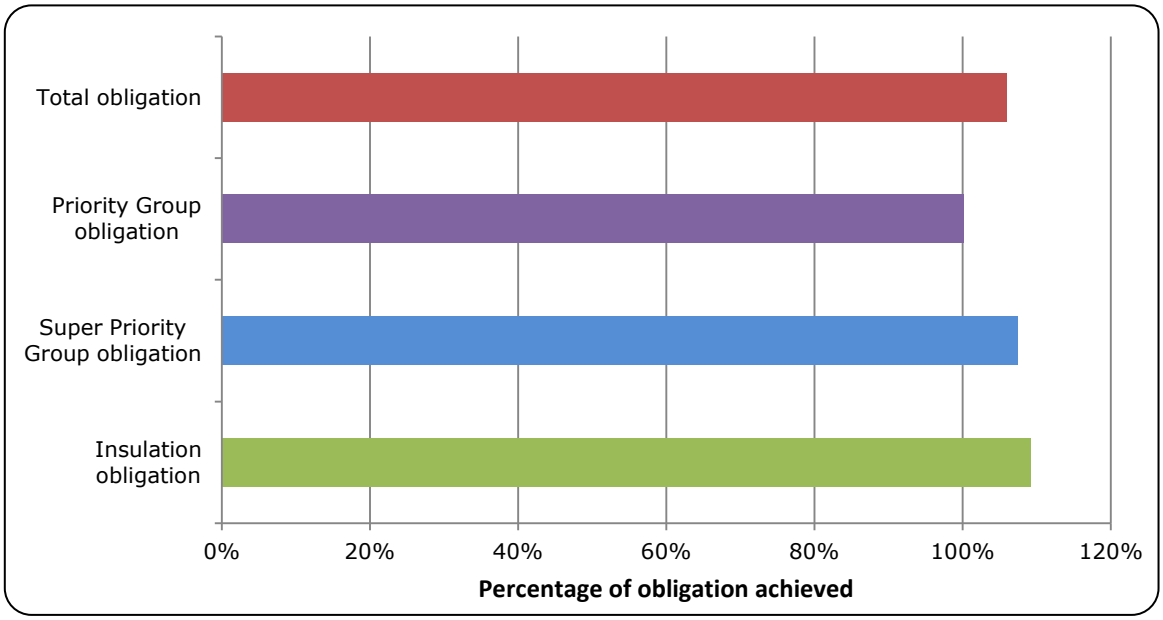
Measure	EEC2 Carryover	CERT Year 1	CERT Year 2	CERT Year 3	CERT Year 4	CERT Year 5	Total
Insulation	0.3%	12.1%	10.4%	6.9%	2.6%	3.2%	35.6%
Insulation obligation	0.0%	0.0%	0.0%	8.2%	10.8%	6.7%	25.7%
Heating	0.5%	0.1%	0.1%	1.1%	0.9%	1.1%	3.9%
Lighting	8.5%	10.5%	6.1%	2.1%	0.6%	-0.9%	26.7%
Appliances	0.0%	1.4%	0.5%	1.9%	0.5%	2.2%	6.4%
Microgeneration & CHP	0.0%	0.1%	0.1%	0.1%	-0.1%	0.1%	0.3%
Behavioural	0.0%	0.0%	0.0%	0.6%	0.3%	0.5%	1.4%
Demonstration actions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	9.3%	24.2%	17.2%	20.9%	15.6%	12.9%	100.0%

3.24. During CERT, E.ON undertook a small number of transfers with other energy companies.

npower

3.25. As shown in Figure 3.7, npower achieved 106.0% of its main obligations by the end of CERT. It achieved 100.2% of its Priority Group obligations, 107.4% of its Super Priority Group obligations and 109.2% of its Insulation obligations. The final determination on compliance by npower did not take account of revised evidence from a DWP exercise (see para 6.19 (ii)). npower obtained this evidence, but at the time the energy company was able to submit the evidence to Ofgem there was insufficient time to process that evidence. As npower achieved its main obligations and all of its sub-obligations it is compliant.

Figure 3.7 npower – percentage of obligations achieved

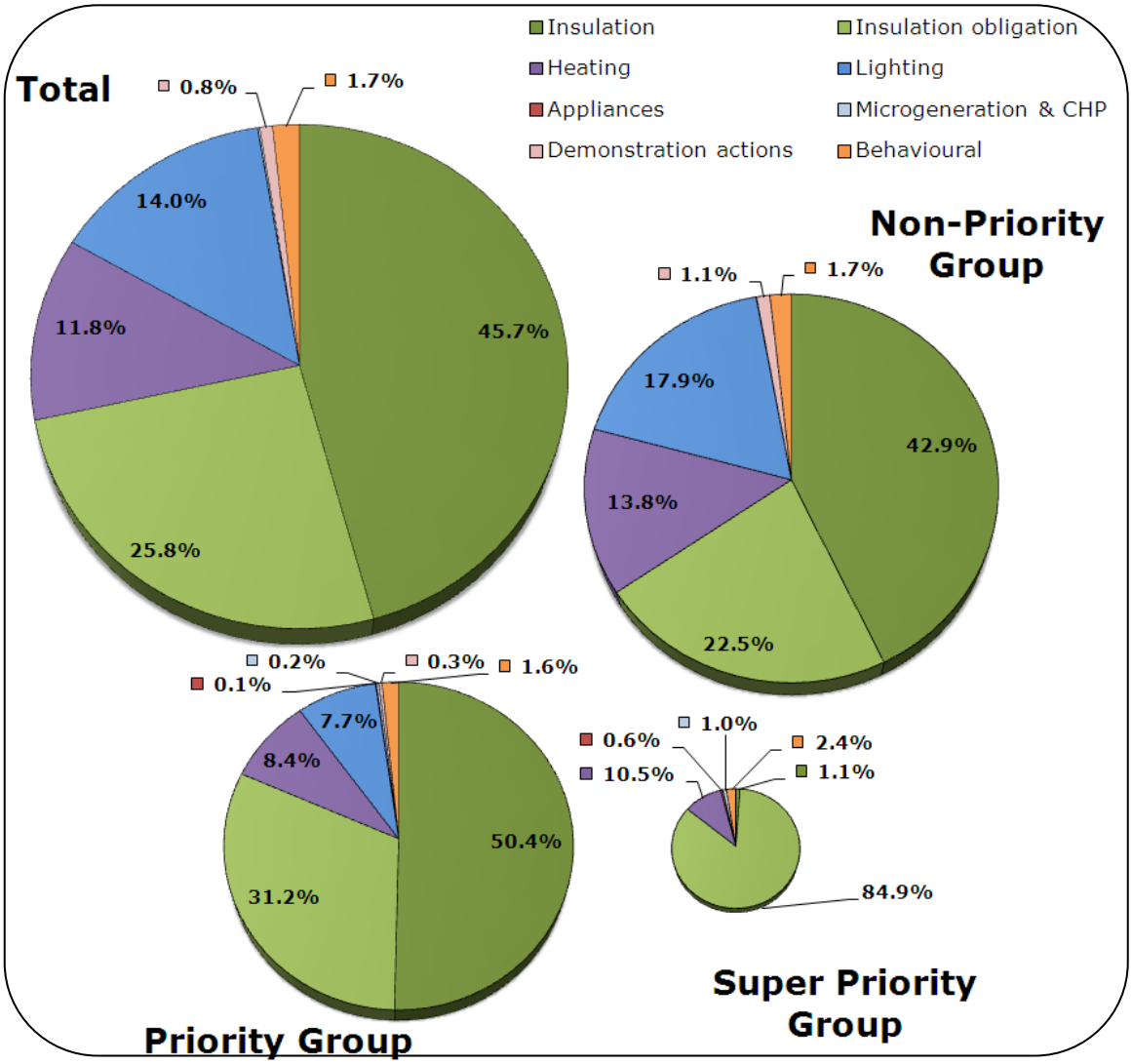


3.26. As shown in Figure 3.8, npower achieved just over 70% of carbon savings by promoting insulation measures and nearly 15% by promoting lighting measures. Insulation was promoted more strongly to the Priority Group and lighting measures were promoted more strongly to the non-Priority Group. Insulation obligation measures accounted for a quarter of overall carbon savings and 85% of carbon savings in the Super Priority Group.

3.27. Heating measures accounted for 11.8% of overall carbon savings and were most prevalent in the non-Priority group (13.8% of carbon savings). Super Priority Group delivery was dominated by the Insulation obligation.

3.28. The remaining carbon savings were achieved through the promotion of low levels of behavioural measures and demonstration actions.

Figure 3.8 npower – carbon savings by measure type and consumer group



3.29. As presented in Table 3.6, npower achieved just over 5% of its main obligations through carbon savings carried over from EEC2. Carbon savings achieved in the final year accounted for 19.8% of its main obligations, compared to an average of 18.7% per year across the first four years of the programme.

Table 3.6 npower – percentage of carbon savings achieved by measure type and year

Measure	EEC2 Carryover	CERT Year 1	CERT Year 2	CERT Year 3	CERT Year 4	CERT Year 5	Total
Insulation	4.0%	11.7%	19.2%	8.6%	0.7%	1.6%	45.7%
Insulation obligation	0.0%	0.0%	0.0%	3.7%	9.9%	12.2%	25.8%
Heating	1.5%	0.2%	3.0%	1.4%	2.5%	3.2%	11.8%
Lighting	0.0%	1.6%	5.8%	5.3%	0.2%	1.2%	14.0%
Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Microgeneration & CHP	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%
Behavioural	0.0%	0.0%	0.0%	1.1%	0.0%	0.7%	1.7%
Demonstration actions	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.8%
Total	5.4%	13.5%	28.1%	20.1%	13.1%	19.8%	100.0%

3.30. During the final year, npower received a transfer of measures equivalent to 1.3% of its main obligations from another energy company.

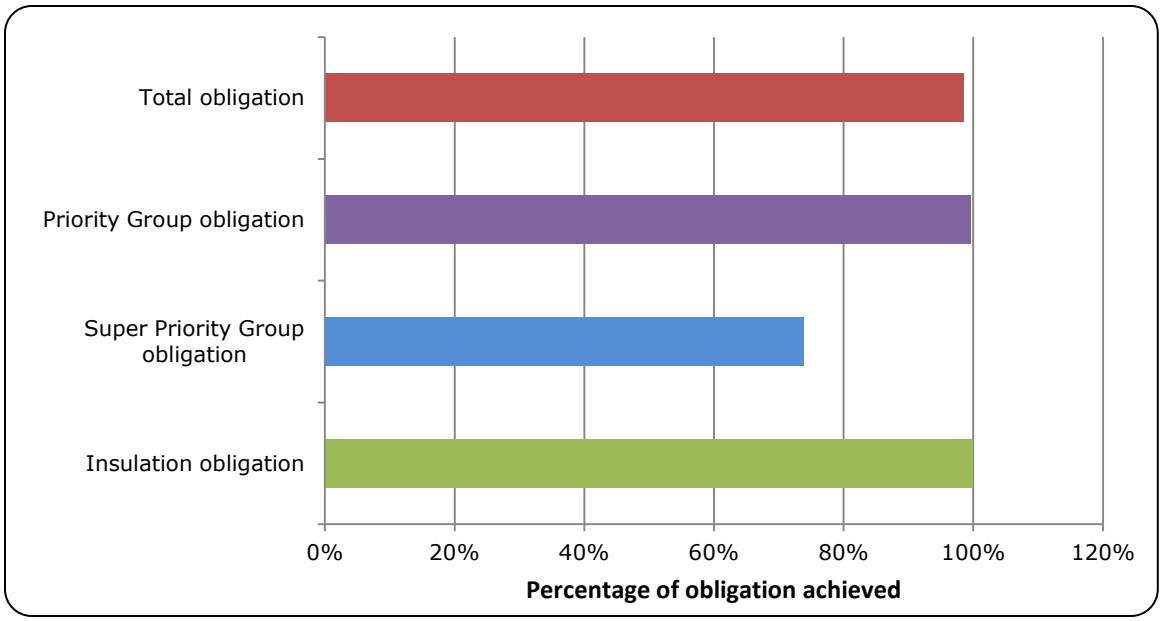
SSE

3.31. SSE achieved carbon savings equivalent to 100.4% of its main obligations by the end of CERT. However, because SSE did not achieve a number of the sub-obligations its final position against its main obligation was 98.6% (as shown in Figure 3.9).

3.32. SSE achieved 99.7% of its Priority Group obligations and 73.8% of its Super Priority Group obligations. SSE achieved carbon savings equivalent to 101.0% of its Insulation obligations. However, it underachieved on one licence (overachieving on the other) therefore its final Insulation obligation position was 99.9%.

3.33. The final determination on compliance by SSE did not take account of revised evidence from a DWP exercise (see para 6.19 (ii)). SSE obtained this evidence, but at the time the energy company was able to submit the evidence to Ofgem there was insufficient time to process that evidence. As SSE did not achieve three of its sub-obligations across its supply licences it is non-compliant.

Figure 3.9 SSE – percentage of obligations achieved

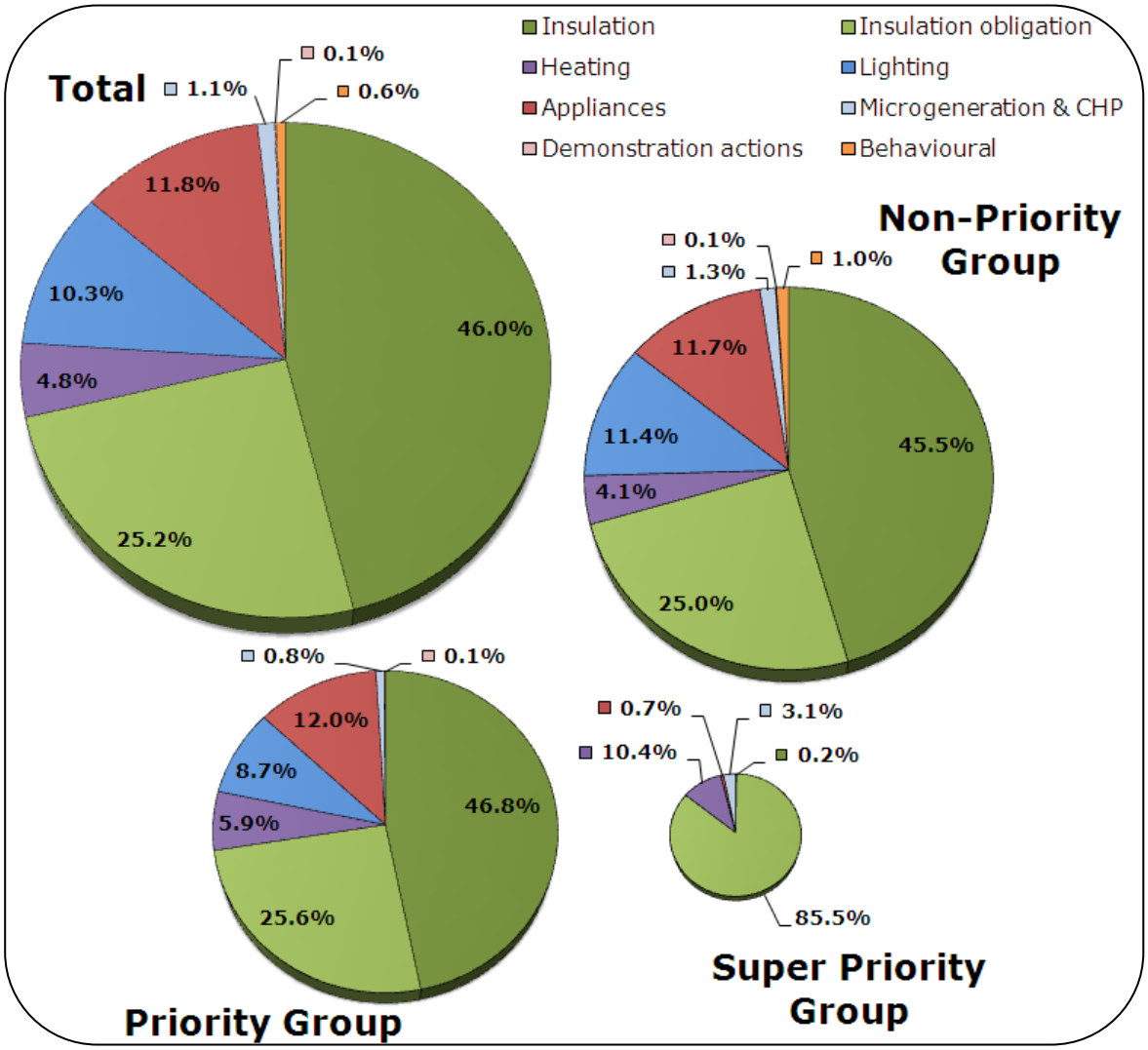


3.34. As shown in Figure 3.10, SSE achieved just over 70% of carbon savings by promoting insulation measures and 10% by promoting lighting measures. Insulation was promoted more strongly to the Priority Group and lighting measures were promoted more strongly to the non-Priority Group. Insulation obligation measures accounted for a quarter of overall carbon savings and roughly 85% of carbon savings in the Super Priority Group.

3.35. Appliances accounted for 11.8% of overall carbon savings. Heating measures accounted for 4.8% of overall carbon savings and were most prevalent in the Super Priority Group (10.4% of carbon savings). Super Priority Group delivery was dominated by the Insulation obligation.

3.36. The remaining carbon savings were achieved through the promotion of low levels of behavioural measures, demonstration actions and microgeneration & CHP measures.

Figure 3.10 SSE – carbon savings by measure type and consumer group



3.37. As presented in Table 3.7, SSE achieved 15% of its main obligations through carbon savings carried over from EEC2. Carbon savings achieved in the final year accounted for 22.3% of its main obligations, compared to an average of just over 15% per year across the first four years of the programme.

Table 3.7 SSE – percentage of carbon savings achieved by measure type and year

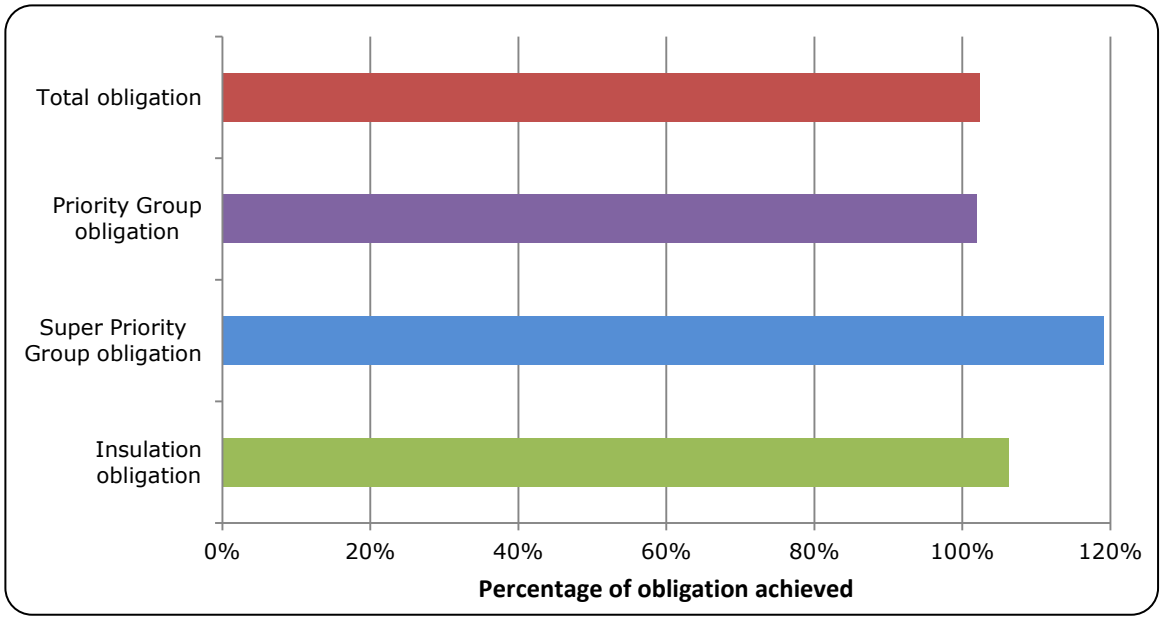
Measure	EEC2 Carryover	CERT Year 1	CERT Year 2	CERT Year 3	CERT Year 4	CERT Year 5	Total
Insulation	12.1%	8.9%	14.5%	8.1%	-1.5%	4.0%	46.0%
Insulation obligation	0.0%	0.0%	0.0%	3.1%	8.9%	13.2%	25.2%
Heating	1.2%	0.6%	0.4%	0.7%	1.2%	0.6%	4.8%
Lighting	1.5%	4.6%	0.9%	1.2%	2.0%	0.0%	10.3%
Appliances	0.1%	0.6%	3.1%	0.9%	3.2%	4.0%	11.8%
Microgeneration & CHP	0.0%	0.0%	0.0%	0.6%	0.0%	0.4%	1.1%
Behavioural	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.6%
Demonstration actions	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Total	15.0%	14.7%	18.9%	15.3%	13.9%	22.3%	100.0%

3.38. In the final year, SSE transferred a small amount of carbon savings to another energy company. In the fourth year of CERT, SSE received transfers of measures equivalent to 1.5% of its main obligations from another energy company.

Scottish Power

3.39. As shown in Figure 3.10, Scottish Power achieved 102.4% of its main obligations by the end of CERT. It achieved 102.0% of its Priority Group obligations, 119.2% of its Super Priority Group obligations and 106.2% of its Insulation obligations. The results of a DWP exercise (see para 6.19 (ii)) were taken into account in assessing compliance by Scottish Power. As Scottish Power achieved its main obligations and all of its sub-obligations it is compliant.

Figure 3.10 Scottish Power – percentage of obligations achieved

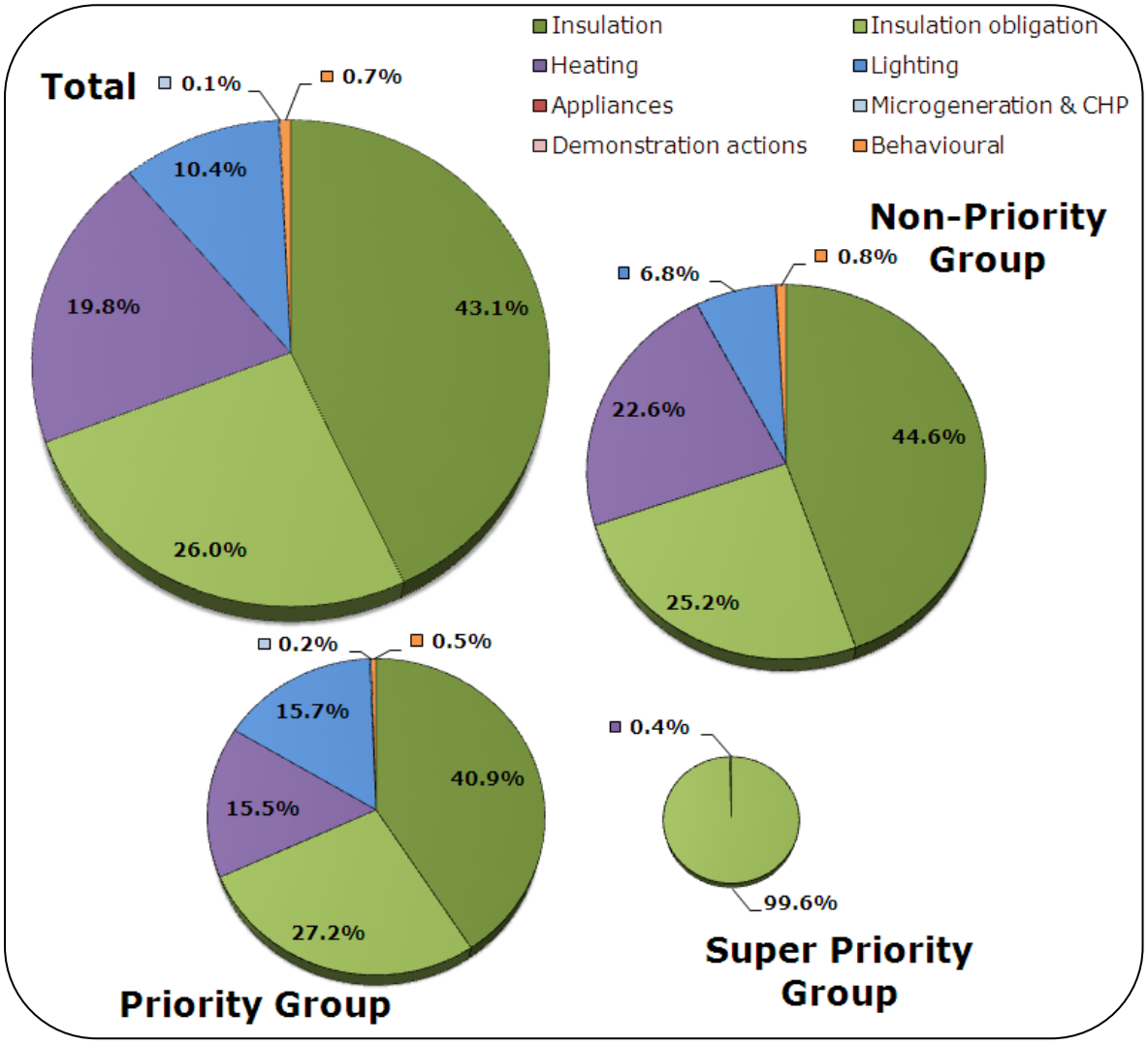


3.40. As shown in Figure 3.11, Scottish Power achieved nearly 70% of carbon savings by promoting insulation measures and 10% by promoting lighting measures. Insulation and lighting were promoted consistently across the Priority and non-Priority Groups. Insulation obligation measures accounted for a quarter of overall carbon savings and nearly all carbon savings in the Super Priority Group.

3.41. Heating measures accounted for nearly 20% of overall carbon savings and were most prevalent in the non-Priority Group.

3.42. The remaining carbon savings were achieved through the promotion of low levels of behavioural measures and microgeneration & CHP measures.

Figure 3.11 Scottish Power – carbon savings by measure type and consumer group



3.43. As presented in Table 3.8, Scottish Power achieved 13.8% of its main obligations through carbon savings carried over from EEC2. Carbon savings achieved in the final year accounted for just over 20% of its obligations, compared to an average of 16.3% per year over the first four years.

Table 3.8 Scottish Power – percentage of carbon savings achieved by measure type and year

Measure	EEC2 Carryover	CERT Year 1	CERT Year 2	CERT Year 3	CERT Year 4	CERT Year 5	Total
Insulation	9.5%	15.2%	13.9%	2.0%	1.8%	0.8%	43.1%
Insulation obligation	0.0%	0.0%	0.0%	0.0%	9.7%	16.3%	26.0%
Heating	0.7%	0.8%	2.8%	4.8%	7.4%	3.2%	19.8%
Lighting	3.6%	3.4%	2.3%	3.1%	-2.1%	0.0%	10.4%
Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Microgeneration & CHP	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
Behavioural	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%
Demonstration actions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	13.8%	19.4%	19.0%	10.0%	16.8%	21.0%	100.0%

3.44. In the third year of CERT, Scottish Power transferred a small amount of carbon savings to another energy company. In the same year, Scottish Power received a transfer of measures equivalent to 3.2% of its main obligations from another energy company.

4. Measure delivered during CERT

Chapter summary

This chapter provides information on measure types, volumes and delivery routes energy companies have used in the delivery of CERT.

Measures

Overall delivery mechanisms

4.1. Energy companies used a range of mechanisms to deliver their obligations. Principal delivery routes included:

- offering measures direct to consumers; and
- partnering with social housing providers.

4.2. Other delivery routes included:

- partnering with retailers, manufacturers and third sector organisations;
- in conjunction with government programmes such as Warm Front.

Overall number of measures

4.3. Table 4.1 shows the number of measures installed over the five years of CERT (excluding EEC2 carryover) for the majority of measure types.

Table 4.1 The number of measures installed

Measure	Number of measures installed			
	Total non-Priority Group and Priority Group (inclusive of Super Priority Group)	**Non-Priority Group**	**Priority Group (inclusive of Super Priority Group)**	**Super Priority Group**
Cavity wall insulation	2,568,870	1,309,218	1,259,652	237,692
Professional loft insulation	3,897,324	1,563,525	2,333,799	531,932
DIY loft insulation (m^2)	112,850,996	94,842,717	18,008,279	0
Solid wall insulation	58,916	15,386	43,530	8,229
Draught proofing	23,986	9,650	14,336	0
Window glazing (m^2)	34,590,263	34,477,568	112,695	0
Hot water tank jackets	436,958	349,459	87,499	23,744
Radiator panels (m^2)	259,851	253,569	6,282	2,575
Flat roof insulation	701	311	390	107
Fuel switching	108,516	56,541	51,975	11,121
Shower regulators	9,653,441	8,127,692	1,525,749	41,661
Replacement boilers	31,986	9,619	22,367	6,506
Heating controls	1,454,336	909,671	544,665	816
Communal heating	92	28	64	0
Compact fluorescent lamps (CFLs)	303,952,610	182,463,142	121,489,468	0
Light emitting diode (LED) lighting	1,409	765	644	0
Other lighting	1,014,248	902,843	111,405	0
Energy efficient cold and wet appliances	4,431,930	3,580,444	851,486	0
Standby savers	4,926,715	2,527,519	2,399,196	57,308
Energy efficient TVs	30,482,662	20,146,328	10,336,334	0
Ground source heat pumps	4,128	3,059	1,069	378
Air source heat pumps	3,331	2,184	1,147	585
Solar water heating (m^2)	1,099	1,096	3	0
Small scale CHP	53	16	37	0
Solar PV	108	108	0	0
Large scale CHP	809	221	588	28
Small biomass boilers[5]	395	99	296	0
Real time displays	2,999,981	2,239,080	760,901	59,181
Home energy advice packages	0	0	0	0

[5] These numbers represent the number of connections to a communal biomass heating system, not the number of individual boilers installed.

Insulation

4.4. Insulation measures dominated energy company activity throughout the programme and accounted for just under two thirds of the total carbon savings achieved. Insulation activity was incentivised by the introduction of the Insulation obligation in April 2011. Energy companies achieved a total of 196.7 Mt CO_2, through insulation measures (including measures counting towards the Insulation obligation and carryover from EEC2).

4.5. Loft insulation was the most prevalent insulation measure installed, with nearly 3.9 million households benefiting from professional installations. DIY loft insulation was the second most prevalent insulation measure. Nearly 112.9 million square metres of subsidised DIY loft insulation was promoted (with approximately 2.8 million homes benefiting). Cavity wall insulation was the third most prevalent measure with over 2.5 million households benefitting. Solid wall insulation (mainly external wall insulation) was installed in nearly 60,000 households.

4.6. Other insulation measures promoted include flat roof insulation, draught-proofing, window glazing and hot water tank jackets. There were no reported installations of under floor insulation.

4.7. Table 4.2 shows the carbon savings achieved through insulation, split by consumer group.

Table 4.2 The contribution to total carbon savings from installed insulation measures (professional and DIY) at the end of CERT

non-Priority Group	Priority Group (including Super Priority Group)	Super Priority Group
37.4%	28.9%	5.3%

Delivery routes for insulation

4.8. The majority of insulation measures were delivered by direct promotion to private households and through partnerships with social housing providers (SHPs). Other delivery routes included retail promotions, working with the government's Warm Front programme and partnering with manufacturers.

4.9. Activity carried out in partnership with SHPs was popular with the energy companies. It allowed them to target large numbers of Priority Group and Super Priority Group householders, because they could lever additional funding from the SHPs to help towards the cost of the measures.

4.10. In many instances energy companies offered insulation to private households in the Priority Group free of charge and some energy companies offered vouchers or cash incentives to attract those in the Super Priority Group.

Lighting

Number of measures

4.11. At the end of CERT, energy companies achieved a total of 51.2 Mt CO_2 through lighting measures, accounting for just under 20% of total carbon savings achieved. Energy companies delivered just under 305 million lighting measures by the end of CERT.

4.12. The 2010 Amendment Order prevented direct lighting activity from being promoted from 1 January 2010 and retail lighting activity (excluding LEDs) from 1 April 2011. As a result of this there was very little lighting activity during the final two years, with only one scheme for LED lighting approved in the fourth year and no new lighting schemes delivered in the final year of CERT.

4.13. Nearly all lighting measures distributed were CFLs; only a small number of energy-efficient halogens, luminaires and LEDs were promoted during CERT.

Table 4.3 The contribution to total carbon savings from lighting measures at the end of CERT

non-Priority Group	Priority Group (including Super Priority Group)	Super Priority Group
10.3%	6.9%	0.0%

Delivery routes for lighting

4.14. Two delivery routes were available to energy companies during the first two years: direct and retail.

4.15. Direct schemes involved promoting lighting directly to householders through free giveaways, either to the energy companies' own customers, in partnership with SHPs, or through promotions with commercial partners such as newspapers. Retail schemes included reduced-price lighting sold through retail outlets such as supermarkets or via mail-order promotions.

4.16. A CFL monitoring exercise was conducted on the number of CFLs sold between 1 January and 31 March 2011 to ascertain the volume that had been or were likely to be installed before the end of CERT. We determined that 89.0% of all CFLs (and associated carbon savings) promoted during this period were to be counted under CERT. We wrote to energy companies advising them of the findings. Energy companies adjusted their figures in Year 5 and the revised totals are included in this report.

4.17. All types of lighting delivered were limited to those products accredited under the 'Energy Saving Trust Recommended' programme. Energy companies

were also required to ensure approved schemes offered a range of different types of CFLs to ensure consumers had sufficient choice to meet the lighting needs in their homes.

Heating

Number of measures

4.18. Energy companies achieved a total of 24.3 Mt CO_2 through heating measures by the end of CERT.

4.19. Heating measures contributed just under 10% of total carbon savings achieved. In the first two years of CERT, fuel switching (eg, replacing an electric heating system with a gas fired heating system) was the most popular heating measure energy companies promoted. Fuel switching was promoted to 108,516 households. Thereafter, the majority of heating carbon savings were delivered by shower regulators which limit how quickly water can flow through a shower head, reducing hot water consumption.

4.20. Across all energy companies nearly 10 million shower regulators were promoted. This was under the 11 million limit in our CERT Supplier Guidance, which was based on market data on the number of suitable showers in the country. We monitored progress against this activity and worked with energy companies to ensure the limit was not exceeded.

Table 4.4 The contribution to total carbon savings from installed heating measures at the end of CERT

non-Priority Group	Priority Group (including Super Priority Group)	Super Priority Group
5.5%	2.7%	0.2%

Delivery routes for heating

4.21. Shower regulators were mainly offered for free if consumers requested them, with a small number also distributed via retail channels. The remainder of the heating schemes were largely delivered in partnership with social housing providers or through direct promotion to private households.

Appliances

Number of measures

4.22. At the end of CERT, energy companies achieved a total of 17.6 Mt CO_2 through the promotion of appliances.

4.23. Appliances accounted for 5.9% of total achieved carbon savings. The carbon savings generated by appliance schemes were comparatively low due to the relatively small carbon saving that is achieved per measure. This low carbon saving is due to the transformation of the appliance market through improvements under the EEC2 programme and minimum standards under EU legislation. Energy companies were only awarded carbon savings where they were additional to those mandated in the EU legislation (specifically the Energy Using Products directive).

4.24. Appliances that were eligible under CERT included cold appliances rated A+ or A++ (excluding chest freezers, for which A-rated appliances are permitted), energy efficient TVs, standby savers and energy efficient kettles. Some energy companies also promoted innovative consumer electronics and information and communications technology measures such as standby devices.

Table 4.5 The contribution to total carbon savings from installed appliance measures at the end of CERT

non-Priority Group	Priority Group (including Super Priority Group)	Super Priority Group
3.7%	2.2%	0.0%

Delivery routes for appliances

4.25. Cold appliances were promoted in two ways: incentive schemes (an energy company promoted more efficient appliances to consumers who were already intending to purchase an appliance) and trade-in schemes (where consumers replaced appliances with a more efficient equivalent).

4.26. The majority of other schemes delivering appliances were carried out in partnership with manufacturers. Energy companies typically funded promotional activity for energy efficient models, contributed to research and development into product efficiency or subsidised the cost of the product itself. Promotions in retail were also a popular delivery method. There was relatively little activity in this area during the last two years of CERT.

Microgeneration & CHP

Number of measures

4.27. Energy companies achieved a total of 2.4 Mt CO_2 through microgeneration & CHP measures by the end of CERT, which equated to less than 1% of total activity.

4.28. The most common measures were ground source and air source heat pumps (installed in 7,459 households) and solar water heating (installed in 1,099 households).

Table 4.6 The contribution to total carbon savings from installed microgeneration & CHP measures at the end of CERT

non-Priority Group	Priority Group (including Super Priority Group)	Super Priority Group
0.6%	0.2%	0.0%

Delivery routes for microgeneration & CHP

4.29. Microgeneration & CHP schemes were delivered in promotion to private householders and in partnership with manufacturers.

Behavioural measures

Number of measures

4.30. The provision of Real-Time Displays (RTDs) and Home Energy Advice Packages (HEAPs) was limited to 2% of each energy company's total obligation. Energy companies achieved a total of 4.3 Mt CO_2 through these behavioural measures by the end of CERT which accounted for 1.5% of total carbon savings achieved (75% of the limit).

4.31. All carbon savings were achieved through RTDs. No HEAPs were reported under CERT. Almost 3 million RTDs were promoted in CERT, almost all of which were claimed as market transformation actions.

Table 4.7 The contribution to total carbon savings from behavioural measures to the end of CERT

non-Priority Group	Priority Group (including Super Priority Group)	Super Priority Group
1.1%	0.4%	0.0%

Delivery routes for behavioural measures

4.32. RTDs were delivered through a variety of routes including retail promotions, partnerships with social housing providers and free provision to consumers on request.

4.33. The Order set out that RTDs and HEAPs were only eligible measures when requested by a domestic energy user. Energy companies had to confirm in writing that all RTDs were requested and that they were not provided without request.

Demonstration action

4.34. Demonstration actions were trials for measures to which a quantified carbon saving could not be attributed. In order to qualify, the measure must have been reasonably expected to achieve a reduction in carbon emissions.

4.35. Demonstration actions were done at the expense of the manufacturer and/or energy company. Under a demonstration action, energy companies were accredited with a carbon reduction that was based on their financial investment in the trial, irrespective of whether the trial produced quantifiable carbon savings. DECC introduced this delivery route to encourage innovation and energy companies chose this route for a number of different technology types.

4.36. The results had to be published upon completion of a demonstration action and, where appropriate, a carbon saving and lifetime carbon score was awarded. Energy companies could then promote the product as a standard or market transformation action. Reports on the findings of these trials are published on the Ofgem website[6].

4.37. Sixteen demonstration action proposals were submitted, seven of which were completed and approved. The nine which were not completed were withdrawn by energy companies. The total cost of completed demonstration actions was approximately £7m. The total awarded carbon savings for completed demonstration actions was 0.4 Mt CO_2, 0.1% of the overall CERT target.

4.38. The seven demonstration actions that were completed are detailed below.

- EDF Energy evaluated a new innovative LED retrofit light bulb called the Lemnis Pharox III LED retrofit light bulb. During the trial consumer reaction to the bulb was measured as well as the bulb's carbon saving performance. This demonstration action showed there is a carbon saving when using the Lemnis Pharox III LED compared to typical household lamps.

- SSE worked with Vphase to determine the carbon savings that could be attributed to VX1 Domestic Voltage Optimisation Devices. The results found there was a carbon saving that could be attributed to the use of the Vphase VX1 device.

- SSE worked with Alba to evaluate the possible carbon savings achievable by insulating Park Homes. It was demonstrated that the addition of insulation to the external walls, the roofs and under the floors of existing Park Homes would deliver a meaningful reduction in carbon emissions.

[6] Available at: http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=234&refer=Sustainability/Environment/EnergyEff

- SSE looked to prove the energy saving potential of fitting doors to 'walk-throughs' between terraced houses. Doors were installed at both ends of passageways, thus reducing the rate of heat loss from the walls and roof of the passageway. The demonstration action concluded that significant carbon savings are achieved from installing passageway doors in walk-throughs.

- The Visible Energy Trial was conducted by British Gas. This was a 12-month study that analysed the impact of three different types of In Home Display on the energy consumption of 273 homes across East Anglia. The trial produced some important findings, particularly with regard to understanding how households react to and interact with, advanced real-time energy display equipment.

- npower worked with Open Energi to assess the carbon savings associated with Open Dynamic Demand. This technology turns fridges into smart appliances, able to provide power frequency response services to the UK electricity grid which are normally provided by conventional power stations. This resulted in reduced carbon emissions.

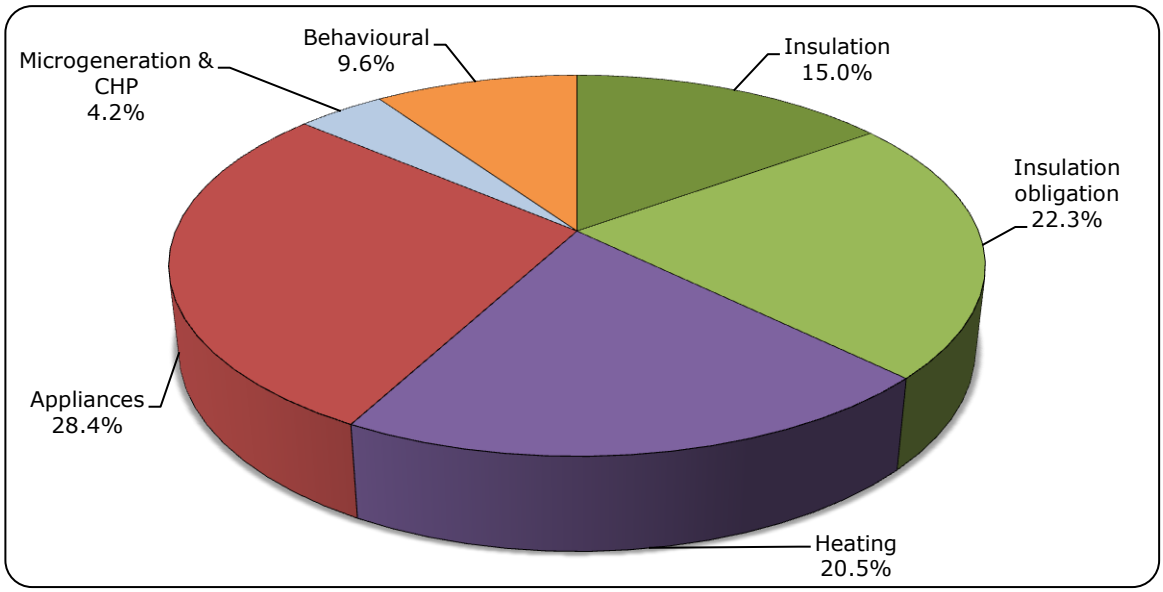
- The Smart Products Trial was conducted by npower. The aim of this demonstration action was to evaluate the carbon savings associated with three different products (Time of Day Tariff Product (Timeout), Enhanced Web Service Product (Bounty) and Monthly Billed Product (Buttons)) which were offered in conjunction with Smart Meters and Customer Display Units. The final results showed that carbon savings were achieved in all of the product groups.

Market transformation action

4.39. Carbon savings from market transformation actions were capped at 10% of an energy company's obligation (in combination with demonstration action savings). If at least 2% of an energy company's obligations were achieved through market transformation microgeneration measures, the limit increased to 12%.

4.40. Energy companies did not report market transformation eligible microgeneration measures that exceeded 2% of their total obligation. The limit on market transformation (in combination with demonstration action savings) therefore remained as 10% for each energy company.

Figure 4.1 Total market transformation actions by measure type



4.41. Carbon savings from market transformation actions, excluding uplift, accounted for 9.6% of the overall CERT target, almost all of the allowed limit. A broad range of measures were claimed as market transformation measures throughout the programme.

4.42. Energy companies claimed market transformation action across all measures apart from lighting. LEDs were eligible for market transformation as none were claimed in EEC2, however, no claims were made for market transformation activity for these measures in CERT.

Priority Group flexibility mechanism

4.43. This mechanism allowed energy companies flexibility in reaching their target for carbon savings in the Priority Group, by providing higher carbon savings for measures that met certain criteria. Carbon savings from this mechanism were capped at 12.5% of an energy company's Priority Group obligations (5% of its main obligations).

4.44. Five schemes were approved under the Priority Group flexibility mechanism. Total carbon savings were approximately 353,000 tCO_2 (0.1% of the overall target, and 0.3% of the Priority Group target).

4.45. The measures permitted in this mechanism were solid wall insulation and, up until 1 April 2011, ground source heat pumps. These measures were provided uplifts to incentivise take up, as outlined in Table 4.8.

Table 4.8 Priority Group flexibility uplifts

Measures	% increase in carbon savings	Number of Measures	Carbon savings inc. uplifts (tCO_2)
Ground Source heat pumps	245%	8	3,912
Internal solid wall insulation	95%	32	4,697
External solid wall insulation	175%	1,677	344,554

4.46. The mechanism was aimed at hard-to-reach properties that were not connected to a gas supply. Carbon savings for solid wall insulation were based on fuel type. This meant that installations at properties without a gas supply received higher carbon savings. Ground source heat pumps could only be installed at properties without a mains gas supply.

4.47. Householders eligible for these measures had to be in the benefits subset of the Priority Group (those who were in receipt of the Priority Group benefits or tax credits with income below a certain threshold). The mechanism did not apply to social housing properties.

5. Technical monitoring and audits

Chapter summary

This chapter presents technical monitoring results and provides information on energy company audits.

Technical Monitoring

5.1. Technical monitoring was a key control in CERT which required energy companies to contract a suitably qualified independent agent to monitor 5% of all professionally installed measures under CERT.

5.2. Properties were inspected using standard technical monitoring questions developed by Ofgem and industry to ensure compliance with CERT legislation and guidance. To ensure consistency these questions were also used for the Community Energy Saving Programme (CESP). The questions covered a range of topics for each measure type and failures could relate to customer satisfaction, health and safety, legal/building regulations, as well as carbon savings achieved.

5.3. The questions were divided between major fails and minor fails based upon the severity of non compliance. While we expected energy companies to address minor fails to minimise their occurrence, an installation was deemed as failing inspection if a major question was not satisfied.

5.4. Ofgem worked with energy companies, via the analysis of energy companies' quarterly technical monitoring submissions, to reduce failure rates and ensure compliance under the CERT Order.

5.5. While quarterly monitoring was completed on a sample of all professional installations, the most significant results were for loft and cavity wall insulation measures. Table 4.9 shows a summary of the failure rates for individual questions for these measures during the quarters monitored. The highest five failure rates for each quarter have been highlighted in red.

Table 4.9- Quarterly technical monitoring results

		Q15	Q16	Q17	Q18
Cavity Wall Insulation	Is the work guaranteed by a CIGA warranty?	10.1%	5.1%	6.6%	7.5%
	If not, has another form of guarantee for 25 years been provided?	1.0%	1.6%	3.7%	6.1%
	Does the drilling pattern used ensure that the insulation material is distributed as evenly as possible throughout the cavity?	2.0%	1.8%	2.3%	2.6%
	Have the injection holes been made good?	3.4%	3.0%	3.2%	3.5%
	Are all the air bricks and eaves vents clear of insulation material?	2.7%	2.4%	3.5%	2.9%
	Have the air bricks been sleeved to prevent material moving in the cavity and blocking the vent at a later date?	2.5%	2.6%	2.9%	3.5%
	Are all air vents particularly those for combustion appliances clear of insulation material?	0.2%	0.3%	2.7%	1.0%
Loft Insulation	Was the insulation marked for 'DIY use only' or dyed a specific colour?	0.0%	0.0%	0.1%	0.1%
	Does the material comply with BS 5803 Part 1: 1985	0.0%	0.0%	0.0%	0.0%
	Thickness of original insulation (mm)	0.0%	0.0%	0.0%	0.3%
	Total thickness of insulation (mm)	1.6%	1.5%	0.0%	2.1%
	Has two thirds of the total loft area been insulated? - If not, approximately what proportion has been insulated?	0.7%	0.4%	0.7%	0.7%
	Has insulation been applied to all appropriate areas including (i) beneath boarded areas and (ii) if the water storage tank is on the joists, around but not beneath the tanks; or if the tank is elevated, around and beneath the tank.	2.9%	2.3%	2.0%	5.0%
	Has the loft hatch been fitted with effective draught seals?	4.3%	3.9%	3.3%	4.8%
	Has the loft hatch been insulated?	2.9%	2.5%	2.0%	3.3%
	Is the roof space adequately ventilated?	1.2%	1.3%	0.7%	1.1%
	Have additional vents been fitted if required?	0.4%	0.5%	0.5%	0.9%
	Have the pipes and tanks been insulated to an adequate standard?	7.3%	4.4%	5.4%	8.4%

Final technical monitoring results

5.6. In addition to quarterly submissions, energy companies also submitted summaries of their technical monitoring results at the end of the programme. These showed aggregated monitoring rates of:

- 6.7% for insulation measures,
- 6.9% for heating measures and
- 5.6% for microgeneration measures.

5.7. The aggregated failure rate across energy companies was 10.9% for insulation measures, 5.3% for heating measures and 1.5% for microgeneration measures.

5.8. All of the measures identified as failing technical monitoring were required to have remedial action completed.

Audits

5.9. Auditing was a very important aspect of CERT administration to ensure that the programme was delivered effectively and in accordance with the Order.

5.10. Throughout CERT, Ofgem commissioned independent auditors to carry out audits on all energy companies. The audit programme consisted of both technical and desk-based audits and was based on a risk-based approach.

5.11. Key findings from the audits include:

- some energy companies had missing or incomplete supporting documentation at the time of audit;
- classification of Priority Group status was largely undertaken by third parties. There were instances identified during audit where installers or surveyors had incorrectly reported measures as Priority Group or Super Priority Group;
- some discrepancies were found between installer records and entries on energy companies' systems;
- energy companies had a mixture of manual and automatic processes for storing and reporting CERT data. At the time of audit, there were instances of a lack of formal processes and documents;
- energy companies had de-duplication processes in place for CERT, though there were some instances of backlogs;
- internal audits of processes were undertaken by energy companies.

A number of improvements were also recommended to energy companies' internal processes.

5.12. Following each audit, findings were shared with the energy companies to ensure action plans were put in place and the recommendations raised were implemented effectively.

5.13. The results of our audit programme along with energy companies' responses provided assurance that:

- measures were as claimed and installed to the required standard;
- energy companies had adequate processes in place for reporting to Ofgem;

- energy companies had adequate processes in place for managing third party contractors;
- energy companies had adequate processes in place for de-duplication of measures between CERT and other energy efficiency schemes.

6. Analysis

Chapter summary

This chapter highlights the key issues and trends that have arisen during CERT.

Progress to the end of CERT

6.1. By the end of CERT energy companies had achieved carbon savings of 296.9 Mt CO_2, 101.3% of the overall target. Four energy companies were compliant in meeting their main obligations, two energy companies were non-compliant in their Insulation obligations and one energy company was non-compliant in its Priority Group and Super Priority Group obligations.

6.2. Energy companies achieved more in the final year (54.9 Mt CO_2) than they averaged in the first four years (51.0 Mt CO_2 per year). This is, in part, because market transformation uplifts for all measures were only applied at the end of the obligation period, as required in the Order.

6.3. Priority Group carbon savings made up 41.3% of overall carbon savings and all but one of the energy companies met their respective Priority Group obligations, set at 40% of their main obligations.

6.4. Energy companies achieved 75.1 Mt CO_2 of carbon savings by promoting measures eligible under the Insulation target, representing 102.3% of the 73.4 Mt CO_2 target. Energy companies significantly increased Insulation obligation activity in the final year of the programme: by the end of the fourth year, energy companies had only achieved 54.1% of the target.

6.5. By the end of CERT, energy companies had achieved 16.6 Mt CO_2 by delivering measures to the Super Priority Group, which is the equivalent to 102.6% of the 16.2 Mt CO_2 target.

6.6. During the final year, we undertook a number of activities designed to aid and encourage delivery by energy companies. These included:

- requiring energy companies to report progress on a monthly basis from January 2012 onwards, including forecasts of final position;
- holding monthly meetings with energy companies to resolve issues and highlight problems promptly; and
- issuing open letters from September 2012 indicating our approach to enforcement for energy companies who do not meet their obligations.

Measures the energy companies have used

6.7. Insulation measures dominated the carbon savings (66.2%) achieved under CERT. Insulation measures featured particularly strongly in the final two years as they were driven by the Insulation obligation.

6.8. The main insulation measures were cavity wall insulation, professionally installed loft insulation and DIY loft insulation. Cavity wall insulation activity was delivered at similar levels to Priority Group and non-Priority Group consumers. Professionally installed loft insulation activity was more focussed on Priority Group consumers, with around twice as many Priority Group households being treated. DIY loft insulation has been more popular with non-Priority Group consumers.

6.9. Market transformation uplift prompted the increased usage of bead cavity wall insulation products which had improved thermal properties and, when injected via a high pressure system, enabled an improved distribution of material to be achieved.

6.10. From 1 April 2011 CFLs were ineligible to be approved as a qualifying action. Due to this, carbon savings from lighting measures contributed only 0.2% of the overall CERT target since this date, compared to 14.4% before this date.

6.11. The promotion of CFLs has transformed the market, with incandescent light bulbs largely being displaced. The level of subsidy for CFLs would appear to have been a key factor in achieving this transformation.

6.12. All energy companies used market transformation products within their measure mix. Insulation, heating, appliances and behavioural measures featured prominently, with 9.6% of the overall target met through market transformation activity. Innovative activity was a key component of many energy companies' activity, with consumer electronics at the fore. In addition, shower regulators were a prevalent measure, with 9.7 million distributed.

6.13. Of the two main behavioural measures, real time displays were distributed in CERT. No home energy advice packages were promoted.

6.14. Several demonstration actions were published and, in the case of developing an insulation solution for Park Homes, enabled the treatment of properties previously outside of the scope of CERT.

Targeting the Priority Group and Super Priority Group

6.15. Energy companies utilised a variety of delivery routes for delivering measures, including working in partnership with local authorities/social housing providers, direct marketing to the owner-occupier sector and integrating with other government programmes such as Warm Front.

6.16. The Order contained a list of prescribed measures which could be promoted to the Super Priority Group. If a prescribed measure was installed, other measures promoted to the same household could also be installed and

counted towards the Super Priority Group obligation, called secondary measures.

6.17. All energy companies utilised secondary measures in addition to prescribed measures. The most prevalent secondary measures were hot water tank jackets, standby savers and shower regulators.

6.18. Energy companies used a number of methods to identify Super Priority Group households, including:

- cash or voucher based incentives to Super Priority Group households or those referring eligible households;
- a mail out facilitated by DWP to eligible Super Priority Group customers; and
- use of Warm Home Discount "core group" data (which has similar eligibility to the Super Priority Group).

6.19. Energy companies have indicated that identifying Super Priority Group households proved challenging, even with targeted mailings and incentives as identified above. Two methodologies were developed by energy companies to identify Super Priority Group households:

i. Social housing: rather than collect information on a per-household basis, energy companies provided empirical evidence that showed 32% of social housing properties contained domestic energy users who met Super Priority Group eligibility requirements. We were satisfied with this proposal and subsequently permitted the methodology to be used across all energy companies.

ii. Private housing: a number of obligated energy companies worked independently with the Department for Work and Pensions (DWP) to cross check certain addresses against the Super Priority Group eligibility criteria. This exercise produced evidence of delivery of measures to members of the Super Priority Group

Transition to ECO

6.20. CERT is succeeded by The Gas and Electricity (Energy Companies Obligation) Order 2012 (the ECO). Certain qualifying actions promoted under CERT can be carried into ECO, where they are excess to that energy company's CERT obligations. Section 21 of the ECO Order provides the eligibility criteria for the carryover of such measures.

Appendices

Index

Appendix 1 – Energy company licenses

The energy companies obligated under CERT are listed below, together with their final compliance position. This has been assessed taking into account any transfers of completed actions.

Energy Company	Licence	Fuel	Compliant with obligation
British Gas	British Gas Trading Ltd	Electricity	Non-compliant
British Gas	British Gas Trading Ltd	Gas	Non-compliant
EDF Energy	EDF Energy Customers Plc	Electricity	Compliant
EDF Energy	Seeboard Energy Limited	Electricity	Compliant
EDF Energy	EDF Energy Customers Plc	Gas	Compliant
EDF Energy	Seeboard Energy Limited	Gas	Compliant
E.ON Energy	E.ON Energy Limited	Electricity	Compliant
E.ON Energy	E.ON Energy Limited	Gas	Compliant
npower plc	npower Direct Limited	Electricity	Compliant
npower plc	npower Limited	Electricity	Compliant
npower plc	npower Northern Limited	Electricity	Compliant
npower plc	npower Northern Supply Limited	Electricity	Compliant
npower plc	npower Yorkshire Supply Limited	Electricity	Compliant
npower plc	Electricity Plus Supply Limited	Electricity	Compliant
npower plc	npower Direct Limited	Gas	Compliant
npower plc	npower Gas Limited	Gas	Compliant
npower plc	npower Commercial Gas	Gas	Compliant
npower plc	npower Northern Limited	Gas	Compliant
npower plc	YE Gas Limited	Gas	Compliant
npower plc	Gas Plus Supply Limited	Gas	Compliant
npower plc	npower Yorkshire Limited	Gas	Compliant
SSE	SSE Energy Supply Limited	Electricity	Non-compliant
SSE	Southern Electric Gas Limited	Gas	Non-compliant
Scottish Power Retail	Scottish Power Energy Retail	Electricity	Compliant
Scottish Power Retail	Scottish Power Energy Retail	Gas	Compliant

Appendix 2 – The Authority's powers and duties

1.1 Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ("the Authority"), the regulator of the gas and electricity industries in Great Britain. This appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2 The Authority's powers and duties are largely provided for in statute (such as the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002, the Energy Acts of 2004, 2008 and 2010 and the Energy Bill 2012) as well as arising from directly effective European Community legislation.

1.3 References to the Gas Act and the Electricity Act in this appendix are to Part 1 of those Acts.[7] Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This appendix must be read accordingly.[8]

1.4 The Authority's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them.

1.5 The Authority is generally required to carry out its functions in the manner it considers is best calculated to further the principal objective, wherever appropriate by promoting effective competition between persons engaged in, or commercial activities connected with,

- the shipping, transportation or supply of gas conveyed through pipes;
- the generation, transmission, distribution or supply of electricity;
- the provision or use of electricity interconnectors.

1.6 Before deciding to carry out its functions in a particular manner with a view to promoting competition, the Authority will have to consider the extent to which the interests of consumers would be protected by that manner of carrying out

[7] Entitled "Gas Supply" and "Electricity Supply" respectively.
[8] However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

those functions and whether there is any other manner (whether or not it would promote competition) in which the Authority could carry out those functions which would better protect those interests.

1.7 In performing these duties, the Authority must have regard to:

- the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- the need to secure that all reasonable demands for electricity are met;
- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them[9]; and
- the need to contribute to the achievement of sustainable development.

1.8 In performing these duties, the Authority must have regard to the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[10]

1.9 Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

- promote efficiency and economy on the part of those licensed[11] under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
- secure a diverse and viable long-term energy supply,

and shall, in carrying out those functions, have regard to the effect on the environment.

1.10 In carrying out these functions the Authority must also have regard to:

- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and

[9] Under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Acts in the case of Electricity Act functions.
[10] The Authority may have regard to other descriptions of consumers.
[11] Or persons authorised by exemptions to carry on any activity.

- certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.11 The Authority may, in carrying out a function under the Gas Act and the Electricity Act, have regard to any interests of consumers in relation to communications services and electronic communications apparatus or to water or sewerage services (within the meaning of the Water Industry Act 1991), which are affected by the carrying out of that function.

1.12 The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation[12] and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

[12] Council Regulation (EC) 1/2003.

Appendix 3 – Glossary

A

Achieved carbon savings

Achieved carbon savings were calculated based on the CERT carbon saving score and lifetime of the measure. Achieved carbon savings were used to meet energy companies' obligations

B

Behavioural measures

Real-time displays and Home Energy Advice Packages were the only behavioural measures included in the scope of CERT. They were introduced into CERT as eligible measures with the Amendment Order 2009

C

CERT

Carbon Emissions Reduction Target (CERT) 2008 – 2012

CESP

Community Energy Savings Programme (CESP) 2009 – 2012

CFLs

Compact Fluorescent Lamps (energy efficient light bulbs)

CHP

Combined heat and power

Completion

Submission of final scheme reports by energy companies for determination of carbon savings by Ofgem

D

DECC

Department of Energy and Climate Change

De-duplication

A process carried out by energy companies to ensure that each measure that was professionally installed was only counted once

Demonstration action

Demonstration actions were trials performed under the Order, for measures to which a firm quantified carbon saving could not be attributed. In order to qualify, the measures must have been reasonably expected to achieve a reduction in carbon emissions

DIY

Do-it-yourself

DWP

Department for Work and Pensions

E

ECO

The Energy Companies Obligation (January 2013 – March 2015), requires gas and electricity suppliers to achieve 20.9 Mt CO_2 of carbon savings towards a Carbon Emissions Reduction Obligation, 6.8 Mt CO_2 of carbon savings towards a Carbon Saving Community Obligation, and £4.2 billion of cost savings towards a Home Heating Cost Reduction Obligation

EEC2

Energy Efficiency Commitment, 2005 - 2008 (EEC2) required gas and electricity suppliers to achieve an energy saving target of 130 TWh in domestic households in Great Britain, between 1 April 2005 and 31 March 2008. At least 50 per cent of the target had to be met in relation to Priority Group consumers

EEC2 carryover

Energy companies were able to apply to Ofgem for the equivalent carbon emissions reduction from any excess carbon savings achieved surplus to their EEC2 target to be credited towards their obligation under CERT

Energy company activity

Energy efficiency work undertaken by energy companies to meet the Carbon Emissions Reduction Target

EST

Energy Saving Trust

Excess Actions

Measures delivered under CERT with carbon savings that may be considered excess to an obligation. These may be carried forward into ECO if certain requirements are met

F

Fuel switching

Fuel switching relates to the switching of carbon intensive primary heating fuel to a fuel with lower carbon content

I

IDTV

Integrated digital television

Insulation obligation

The amount of an energy company's carbon emissions reduction obligation which was to be achieved by the promotion of professionally installed insulation measures in accordance with article 9 (1A) of the Order

M

Market transformation

This was an uplift that applied to innovative measures such as microgeneration and solid wall insulation. The uplift was also applied to measures that passed a 'significantly greater than' test (in terms of carbon savings) or a 'significantly different to' test (in terms of function) in comparison to measures delivered under EEC1 or, for measures delivered on or after 1 April 2011, EEC2

Microgeneration

Under the terms of CERT, these measures include small scale biomass boilers, wind turbines, heat pumps, solar photovoltaic, small hydro, solar water heating, large and small scale Combined Heat and Power and other microgeneration

Mt CO_2

Million tonnes of carbon dioxide

T

The Order

The Electricity and Gas (Carbon Emissions Reduction) Order 2008, The Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2009, The Electricity and Gas

(Carbon Emissions Reduction) (Amendment) Order 2010 and The Electricity and Gas (Carbon Emissions and Community Energy Saving) (Amendment) Order 2011 (together referred to as 'the Order')

P

Priority Group

Defined in the CERT Order as the group of domestic energy users where each member fulfils one of the following criteria:

(a) is in receipt of at least one of the following benefits: council tax benefit, housing benefit, income support, an income-based jobseeker's allowance, an income-related employment and support allowance, an attendance allowance, a disability living allowance, a war disablement pension which includes either mobility supplement constant attendance allowance, a disablement pension which includes constant attendance allowance, or a state pension credit, or

(b) is in receipt of at least one of the following credits: child tax credit or working tax credit and has a relevant income of less than £16,040, or

(c) is at least 70 years old

Priority Group flexibility mechanism

This mechanism allowed energy companies some flexibility in reaching their target for carbon savings in the Priority Group. Eligible measures were ground source heat pumps and solid wall insulation. The mechanism was aimed at those off the gas grid and in hard to treat homes. Householders must have been in the benefits subset of the Priority Group

S

SHP

Social Housing Provider

Super Priority Group

The group of domestic energy users in the Priority Group where each member is in receipt of

a) child tax credit and has a relevant income under a certain threshold

or

b) state pension credit

or

c) income-related employment and support allowance and has responsibility for a child under the age of five who ordinarily resides with that member or is in receipt of a qualifying component

d) income based job seeker's allowance and has responsibility for a child under the age of five who ordinarily resides with that member or is in receipt of a qualifying component

e) income support and has responsibility for a child under the age of five who ordinarily resides with that member or is in receipt of a qualifying component