Carbon Emissions Reduction Target (CERT)

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The Carbon Emission Reduction Target (CERT) placed a five year obligation on gas and electricity suppliers to reduce carbon emissions in the household sector through energy efficiency improvements. It ran from April 2008 - December 2012.

Overall CERT resulted in almost 4 million households receiving professionally-installed loft insulation; 2.6 million households receiving professionally-installed cavity wall insulation and an estimated 2.8 million additional households receiving 'DIY' loft insulation materials.

Early criticisms of the scheme included the large number of energy saving light bulbs supplied to households without the necessary monitoring of their installation or of savings achieved. This was addressed by removing such items from the scheme and obliging suppliers to provide much of the savings through insulation measures.

The green deal has now replaced CERT.

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1 Introduction

The primary aim of the Carbon Emissions Reduction Target (CERT) was to make a contribution to the UK's targets under the UN Kyoto Protocol (to cut greenhouse gas emissions by 12.5% below 1990 levels by 2008-2012) and the Climate Change Act 2008 (to cut emissions of green house gas emissions by 80% below 1990 levels by 2050). Since around a quarter of carbon emissions result from the energy used to heat and power homes housing was an area for significant attention.

CERT was introduced in April 2008; it was the third in a series of legal obligations on the major gas and electricity suppliers dating back to 2002.[1,2] CERT was extended on 30 July 2010, with a new higher emissions target and significant refocusing around supporting greater installation of insulation.[3]

The Green Deal which replaces CERT has taken the form of a low cost loan for energy efficiency or micro-generation measures attached to a property. The Green Deal is underpinned by a new 'energy company obligation' (ECO) aimed at reducing CO_2 emissions from homes which focuses on vulnerable households, those in fuel poverty and those living in hard-to-treat properties – for example, solid-walled properties. The related standard note on the green deal outlines concerns from the Committee on Climate Change regarding the treatment and likely uptake of loft and cavity wall insulation.

Other related Library Standard Notes include those on Energy Efficiency Schemes and the Community Energy Savings Programme, CESP.

2 CERT – what were the main aims?

CERT came into effect in April 2008 and was implemented by the *Electricity and Gas (Carbon Emissions Reduction) Order 2008* (SI No. 188). The original carbon reduction target was 154MTCO_2 but this was later increased in two stages to 293 MTCO_2; see below.[4]

In general, CERT obliged electricity and gas suppliers in Great Britain to help reduce carbon dioxide emissions from homes. Each supplier under the scheme had to demonstrate that measures that it implemented led to a certain level of carbon dioxide (CO_2) *saving* among its customers. Electricity and gas suppliers were obliged to promote things that:

- improved energy efficiency, for example, loft and wall insulation;
- increased the amount of energy generated from renewable technologies such as wind turbines, solar panels and ground source heat pumps.[5]

It was up to each supplier to determine the measures to be offered and to set eligibility criteria although Ofgem had a role in assessing these. Many suppliers offered grants or discounts on certain products. Discounts could be provided to customers in certain 'priority groups'. There was a priority group which focused on those in receipt of certain disability or

1 *Electricity and Gas (Carbon Emissions Reduction) Order* SI 2008/188
2 The two previous schemes were Energy Efficiency Commitment I and II (often referred to as EEC I and EEC II) that ran from April 2002 to March 2005 and from April 2005 to March 2008 respectively; source: Ofgem Energy Efficiency website page and HL Deb 25 October 2011 c126-7WA
3 *Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2010* SI No 2010/1958
4 *The Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2009* SI No 2009/1904
5 Energy Saving Trust website, Carbon cuts get serious with CERT [on 23 January 2012]

employment related benefits, or who were over 70, and a super priority group which also focused on certain benefits but had a slightly stricter set of qualifying conditions.[6]

CERT was first revised in March 2009.[7] Among other amendments, the overall emissions target was increased by 20% or by 31 $MTCO_2$ to 185 $MTCO_2$. There was also an inclusion of real time displays (RTDs) and home energy advice packages (HEAs), each with a score specified in the legislation as well as restrictions to the delivery of compact fluorescent lamp (CFL) schemes.

In June 2010 the Department of Energy and Climate Change (DECC) then further extended CERT to December 2012 and further amended the scheme:[8,9]

- The emissions target was increased by 108 $MTCO_2$ and a new target of 293 $MTCO_2$ was set;
- obligated suppliers were required to meet 68% of the increase in target through professionally installed insulation products cavity and solid wall insulation. With DIY insulation added, more than 80% of the scheme was focused on insulation. Previously just 60% was met through professional and DIY work (referred to as the *Insulation Obligation or IO*);
- halogens and compact fluorescent lamps (CFLs) were removed from the scheme after criticisms from the Environment, Food and Rural Affairs select committee;
- micro-generation products were restricted to the most vulnerable groups only;
- suppliers were encouraged to promote solid wall insulation in off-gas grid properties;
- suppliers were also required to focus their activity on 'priority groups' such as the vulnerable, disabled, elderly and low income families.

Suppliers could not claim for reductions in CO_2 under both CERT and CESP (the Community Energy Savings Programme) but they could trade their obligations under either.[10]

Energy suppliers generally contracted delivery partners to deliver professionally-installed home insulation measures by setting an explicit price per tonne of carbon saved. Other contracts were specified in terms of measures, but the price per measure was again largely driven by carbon savings.

The carbon price set by energy suppliers sometimes differed between Priority Group and Non-Priority Group recipient households. While the relative prices depended on the market and progress towards targets, the carbon price was generally higher for Priority Group households (or mixtures of households with a higher proportion of Priority Group). DECC expected that suppliers would need to invest around £2.4 billion on energy efficiency measures to meet these targets.[11]

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6 CERT eligibility criteria, British Gas, 2011
7 *Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2009* SI 2009/1904
8 DECC, *Paving the way for a Green Deal: Extending the Carbon Emissions Reduction Target supplier obligation to December 2012 - Summary of consultation responses and Government Response, 30 June 2010*, p4-5
9 *Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2010* SI No 2010/1958
10 DECC *Evaluation synthesis of energy supplier obligation policies* October 2011
11 DECC press release 10 June 2010

3 What did CERT deliver?

Ofgem was the authority responsible, under the regulations for CERT, for regulating, monitoring and reporting on the progress of CERT. The following is a summary of the final report of the carbon emissions targets and the measures installed published in May 2013.[12]

3.1 Measures installed

Ofgem figures show that 3.9 million households received professionally-installed loft insulation through CERT, while 2.6 million households received cavity wall insulation.

The Ofgem estimates show that, in each case, about 70% of these were private households receiving a direct offer (through their local authority, an installer/managing agent, an energy supplier or a retail store), about 25% were social tenants receiving measures through their Registered Social Landlord (RSL), and an estimated 5-10% received insulation in conjunction with a national Government scheme (e.g. Warm Front in England, the Energy Assistance Package in Scotland, or the Home Energy Efficiency Scheme in Wales).

The following table details the number of measures installed under CERT by type and group.

Number of measures installed under CERT

	Number installed by group (thousands)			
Measure	Priority group	*o/w super priority*	Non-priority	**Total**
Cavity wall insulation	1,260	*238*	1,309	**2,569**
Professional loft insulation	2,334	*532*	1,564	**3,897**
DIY loft insulation (m^2)	18,008	*0*	94,843	**112,851**
Solid wall insulation	44	*8*	15	**59**
Draught proofing	14	*0*	10	**24**
Window glazing (m^2)	113	*0*	34,478	**34,590**
Hot water tank jackets	87	*24*	349	**437**
Radiator panels (m^2)	6	*3*	254	**260**
Flat roof insulation	0	*0*	0	**1**
Fuel switching	52	*11*	57	**109**
Shower regulators	1,526	*42*	8,128	**9,653**
Replacement boilers	22	*7*	10	**32**
Heating controls installed	545	*1*	910	**1,454**
Communal heating	0	*0*	0	**0**
CFLs	121,489	*0*	182,463	**303,953**
Other lighting	111	*0*	903	**1,014**
LEDs	1	*0*	1	**1**
Energy Efficient cold and wet appliances	851	*0*	3,580	**4,432**
Standby savers	2,399	*57*	2,528	**4,927**
TVs	10,336	*0*	20,146	**30,483**
Ground Source heat pump	1	*0*	3	**4**
Air Source heat pump	1	*1*	2	**3**
Solar Water Heating (m^2)	0	*0*	1	**1**
Small scale CHP	0	*0*	0	**0**
Solar PV	0	*0*	0	**0**
Large scale CHP	1	*0*	0	**1**
Small biomass boiler connections	0	*0*	0	**0**
Real time displays	761	*59*	2,239	**3,000**

CFLs -total subject to review of estimated number actually installed

Source: The final report of the Carbon Emissions Reduction Target (CERT) 2008-2012, Ofgem

[12] Ofgem *The final report of the Carbon Emissions Reduction Target (CERT) 2008-2012 May 2013*

3.2 Carbon savings

By the end of December 2012 suppliers, according to Ofgem, had collectively delivered measures resulting in savings of 296.9 $MTCO_2$ (including carry over from the previous Energy Efficiency Commitment or EEC2). This was 1.3% above the target of 293 $MtCO_2$. CERT savings increased in year 5 as suppliers tried to meet their obligations before the end of the scheme. Carbon savings in this nine month period were almost 25% above those in the year 4 which was a full year. Four of the 'big six' suppliers were compliant with all their obligations under CERT –EDF Energy, E.ON, npower and Scottish Power, while two were not –SSE and British Gas.[13]

Supplier activity can be broken down into six main categories of measures: insulation, Insulation Obligation, lighting, heating, micro-generation and appliances. Of all CERT activity, insulation (including the Insulation Obligation activity) and lighting dominated, accounting for 84% (including carry over from EEC2) of the carbon savings achieved. Insulation (including Insulation Obligation activity) accounted for 66% of carbon savings achieved, therefore representing the largest share of carbon savings.

Savings achieved from insulation fell in Year 3, but increased markedly in year 5. Carbon savings from heating increased up to year 4. Appliance savings fell in year 3 but increased again in year 5.

The decrease in carbon savings from lighting activity is likely to be linked to the exclusion of direct CFLs or energy efficient light bulbs activity through the CERT Amendment Order 2009.

Carbon savings by measure type and year

percentage of total carbon savings achieved

Measure	Carryover	CERT year 1	CERT year 2	CERT year 3	CERT year 4	CERT year 5	**Total**
Insulation	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%**
Appliance	0.0%	0.6%	1.2%	1.3%	0.6%	2.2%	**5.9%**
Microgen	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%**

Source: The final report of the Carbon Emissions Reduction Target (CERT) 2008-2012, Ofgem

Of the total carbon savings achieved, 41% resulted from measures installed in, or provided to, Priority Group households. This equates to around 123 $MTCO_2$. This is just above the minimum 40% required by the legislation; overall, suppliers met their overall Priority Group Obligation.

[13] According to Ofgem late information supplied by SSE could affect this assessment.

Carbon savings by measure type and recipient group

percentage of total carbon savings achieved

Measure	Priority group	*Of which super priority*	Non-priority group
Carryover	4.2%	*0.0%*	8.5%
Insulation	26.6%	*5.3%*	30.9%
Heating	1.8%	*0.2%*	4.9%
Lighting	5.8%	*0.0%*	8.9%
Appliance	2.2%	*0.0%*	3.7%
Microgen	0.2%	*0.0%*	0.6%
Demonstration actions	0.0%	*0.0%*	0.1%
Behavioural	0.4%	*0.0%*	1.1%
Total	**41.3%**	***5.6%***	**58.7%**

Source: The final report of the Carbon Emissions Reduction Target (CERT) 2008-2012, Ofge

3.3 Homes treated

The Energy Saving Trust (EST) maintains a database of energy efficiency measures carried out on the UK housing stock since 1995. The CERT information in this database largely consists of professionally installed measures loft and cavity wall insulation. These data are provided voluntarily by the energy suppliers to EST; they do not include all installations and are not used for compliance.[14] The latest regional summary of this information is set out below. This recorded 6.0 million professional loft or cavity wall insulations in 5.1 million dwellings, although EST estimates that data are missing for around 7% of cases that ought to be included. By the end of CERT the programme had funded professional loft or cavity wall insulations in around one in four dwellings in the North East and North West, but only one in ten in London.

CERT professional loft and cavity wall insulations by region to 31 December 2012

	Measures (thousands)			Dwellings treated[a]	
	Cavity wall	Loft	**Total**	Thousands	%
North East	126	206	**332**	277	23.5%
North West	433	525	**959**	789	25.2%
Yorkshire and The Humber	223	372	**595**	499	21.5%
East Midlands	154	294	**448**	382	19.4%
West Midlands	229	344	**574**	480	20.2%
East of England	205	314	**519**	434	17.1%
London	135	223	**359**	328	10.3%
South East	332	407	**738**	610	16.7%
South West	217	307	**524**	433	18.3%
Scotland	218	411	**629**	545	21.8%
Wales	127	224	**352**	297	21.7%
Total	**2,401**	**3,627**	**6,028**	**5,073**	**19.1%**

(a) Dwelling recorded as receving either one or both types of insulation under CERT

Note: EST estimates that data on around 7% of these installations has not yet been received

Source: CERT summary report (Q19) by English regions, Scotland and Wales

[14] Energy Savings Trust *Guidance notes on CERT reports from HEED*,

Other geographical breakdowns, including by local authority and constituency can be found on the EST's HEED publications page.

4 Evaluating CERT

A research project to evaluate CERT and CESP has been tendered by DECC and the project runs to November 2013.[15]

DECC commissioned Ipsos MORI, CAG Consultants and the Building Research Establishment (BRE) to conduct a retrospective evaluation of CERT in October 2011.[16]

The main findings were as follows:

- Energy suppliers focused on delivery of insulation and lighting in achieving their CERT targets. Insulation contributed more than 60% of delivery in terms of attributed carbon savings and were typically delivered through contracts with delivery agents.
- The design of CERT successfully drove cost-effective delivery of measures (especially loft and cavity wall insulation) and led to increased capacity in the supply chain. However, in doing so CERT created a market somewhat reliant on subsidy, and driven by energy suppliers' demand for installations to meet their binding targets, rather than a true demand for insulation from consumers.
- The CERT scoring system incentivised least-cost delivery of measures, which has overall meant delivery of lower cost measures in the easier to treat properties and more accessible areas.
- The CERT scoring system also allowed some exploitation of the scheme, most notably in the case of over-delivery of free CFLs to achieve carbon scores. They were excluded from CERT because of the risk of non installation at the numbers delivered.
- Take-up of measures under CERT was spread across all income groups, with greatest relative take-up amongst home owners and social rented households in urban and suburban areas.
- Key barriers to uptake of measures included perceptions of high up-front costs, often due to lack of awareness about offers and/or energy efficiency measures generally.
- Household behaviour was affected with respondents reporting that they were able to have their heating on for a shorter amount of time; a few respondents reported that they were able to turn their thermostats down.
- The limitations of the evaluation make it difficult to say conclusively whether measures would have been installed in the absence of CERT, but without these efforts it is unlikely many householders would have been able to seek out or install energy efficiency measures.

[15] "Low Carbon Funding Landscape Navigator", Knowledge transfer network

[16] Consultants report Evaluation of the delivery and uptake of the Carbon Emissions Reduction Target October 2011

National Energy Action in its evidence to the March 2010 Select Committee on Energy and Climate Change (ECC) enquiry into Fuel Poverty were critical of the funding mechanism used to recover the costs of CERT;[17]

> The cost of these initiatives [...] is recovered through charges on customer bills. This means that the funding programmes are inequitable and regressive in that those who can least afford to contribute pay the same towards the cost of the range of initiatives as the most affluent households.

While acknowledging the criticisms from National Energy Action about sources of funding, the Select Committee on Environment, Food and Rural Affairs report on Energy Efficiency and Fuel Poverty in June 2009 accepted that the energy efficiency programmes provided by the energy companies should continue to be available to all:

> CERT is intended to be a carbon emissions reduction programme rather than a vehicle for tackling fuel poverty. Although CERT targets must be delivered in part through a low income "priority group", fuel poor households account for a small proportion of this group. Although we believe the Government should fund programmes to tackle fuel poverty, fuel poor customers must also be able to benefit as much as better off customers from climate change mitigation programmes such as CERT. Programmes to tackle fuel poverty should be additional to, not substitutes for, climate change mitigation programmes. Energy supply companies must continue to make their schemes available to all customers. [18]

The Committee on Climate Change in its Third Report to Parliament in June 2011 acknowledged changes in responses to criticisms, but remained concerned about slow progress on insulation measures in 2010 and implications for 2012 onwards.[19]

The ECC Committee report on Fuel Poverty in March 2010 noted criticisms of government energy efficiency programmes, including CERT; in particular that the schemes were fragmented, relying as they did on individual households making individual applications:[20]

> National Energy Action [...] said that "the current structure of domestic energy efficiency programmes makes them unfit for purpose in terms of eradicating fuel poverty.
>
> A fragmented approach in which individual households make individual applications for assistance followed by individual assessment and installation work represents grossly sub-optimal use of resources". The Fuel Poverty Advisory Group agreed, telling us "there is no doubt that the schemes we currently have, bearing in mind the task that we face, are unfit for purpose and, therefore we do need to have a radical rethink".

To some extent these criticisms were addressed in the Community Energy Savings Programme (CESP), which was a community-based approach concentrating on providing energy saving measures to households in income-deprived areas. For more information, see the CESP Commons Library Standard Note. The energy company obligation which underlies the green deal also has a community element.

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17 National Energy Action Evidence to Select Committee on Energy and Climate Change enquiry on Fuel Poverty 24 March 2010 HC424ii

18 Select Committee on Environment, Food and Rural Affairs report on *Energy Efficiency and Fuel Poverty* 10 June 2009 HC37 para 64
Committee on Climate Change *Meeting Carbon Budgets – 3rd Progress Report to Parliament* - 30 June 2011 Section 3

20 Select Committee on Energy and Climate Change *Fuel Poverty* 30 March 2010 HC 424i

4.1 Cost to Households

CERT ended in December 2012. DECC has estimated that for 2012, the cost was £16 out of a typical £660 annual gas bill, £17 out of a £600 annual electricity bill and a total of £38 out of a combined £1,260 average duel fuel bill per household. This is the cost after average efficiency savings arising from schemes are taken into account. DECC estimated that the cost of the programme to October 2011 was about £3.9 billion (in 2010-11 prices) or about £140 per household.[21]

[21] HL Deb 25 October 2011 c126-7WA