

RESEARCH REPORT

Evaluation synthesis of energy supplier obligation policies

October 2011

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Summary of findings

This report presents a synthesis of findings from independent evaluations and other research and analysis¹ related to DECC's energy supplier obligation policies – the Carbon Emissions Reduction Target (CERT) and the Community Energy Saving Programme (CESP).

Both CERT and CESP place an obligation on energy companies to meet carbon emission reduction targets by delivering energy efficiency measures to households in Great Britain, but have different primary objectives and designs:

- The primary aim of CERT is to reduce household carbon emissions by overcoming barriers to uptake of cost-effective energy efficiency measures such as insulation, heating and lighting, across all households (with 40% of savings achieved in 'Priority Group' households²). CERT runs from April 2008 to December 2012 and applies to the six main energy suppliers.
- CESP was designed to be delivered through area-based schemes, with the twin objectives of significantly reducing the fuel bills of low income households and improving the energy efficiency of the existing housing stock in order to reduce CO₂ emissions. CESP runs from October 2009 to December 2012 and applies to the six main energy suppliers and the four independent energy generators.

This evaluation was undertaken to provide a comprehensive understanding of CERT and CESP up to March 2011, and inform development of a new Energy Company Obligation (ECO) under the Green Deal. Final evaluations will be undertaken for both schemes in 2013.

The evaluation addressed four key questions. The findings related to each question are presented below, along with key lessons for future policy:

- How have energy suppliers responded to the design of CERT and CESP?
- What has been delivered by CERT and CESP?
- How and why have energy efficiency measures been taken up by households?
- What are the impacts of CERT and CESP on energy use, and more widely?

How energy suppliers have responded to CERT and CESP policy design

- The design of CERT, as a market based mechanism, allows energy suppliers to meet their obligation in the most cost-effective way. Under CERT all six obligated energy suppliers have developed multiple delivery routes and established partnerships with a wide range of organisations to deliver measures, in response to the flexible design of the policy. This included schemes involving local authorities, insulation installers, managing agents, registered social landlords and retail stores e.g. for direct sales of DIY loft insulation. Energy suppliers also offered measures directly to households and partnered with various brands on electronics and white goods through 'factory gate' schemes.
- In the main, energy suppliers focused on delivery of insulation and lighting in achieving their CERT targets. Insulation, which contributed more than 60% of delivery in terms of attributed carbon savings, was typically delivered through contracts with delivery agents,

¹ See references section for details of the full evidence base underlying this synthesis report.

² Under CERT 40% of savings are required to be delivered to Priority Group households, on certain benefits and/or over 70 years old.

which were driven by energy suppliers setting a price per tonne of carbon saved, with different prices for Priority Group and non-Priority Group households. This provided a commodity which has driven the market, and encouraged new entrants and innovative means of reaching households and generating demand.

- iii. The design of CERT has successfully driven 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 has 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. This has also had knock-on effects in the supply-chain, with resultant peaks and troughs in delivery when CERT rules changed or suppliers neared their targets.
- iv. 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. This also allowed some exploitation of the scheme, most notably in the case of over-delivery of free Compact Fluorescent Lamps (CFLs) to achieve carbon scores. CFLs, which contributed over 20% of savings attributed to CERT to date, have subsequently been excluded from CERT because of the risk of non installation at the numbers delivered.
- v. CESP has been delivered through areas-based schemes, the development of which has been approached differently by the obligated energy companies. Schemes developed by energy *suppliers* have typically either been managed by local partners and overseen by the energy supplier, or directly managed by the energy supplier (e.g. with measures delivered by in-house energy services business). In contrast, most of the independent energy *generators* out-sourced all or part of their obligation, to be managed and delivered by a third-party organisation, and/or traded some or all of it with energy suppliers.
- vi. The CESP area-based approach was strongly supported by a broad suite of stakeholders, although it was felt that the levels of density (i.e. high number of properties in an area treated) achieved to date were not as high as originally envisaged. Equally the prescriptive nature of area boundaries³ was felt to have limited some schemes. The whole-house approach has meant in practice that, unlike CERT, at least two measures were installed in most properties, most commonly solid wall insulation and one other measure.
- vii. Although still in early stages of scheme completion, initial indications are that the CESP scoring system has successfully incentivised delivery of higher cost measures such as solid wall insulation (which CERT has comparatively struggled to do). Both schemes however have focused on promoting higher cost measures in social housing.
- viii. Although helping stimulate higher cost measures, the broader complexity of CESP (including its scoring arrangements) was widely considered a barrier to the development of schemes. It was felt by many delivery partners that the time-scale for CESP was too short to allow establishment of required partnerships to successfully develop schemes and deliver measures. Additionally, issues related to procurement, planning and the requirement for a supporting letter from the local authority were highlighted as barriers to the initiation of some schemes.

³ Areas eligible for CESP schemes are defined using Lower Super Output Areas (LSOAs)

Delivery of CERT and CESP

- ix. Under CERT, between April 2008 and March 2011, around two million GB households received professionally installed loft insulation, 1.6 million households received cavity wall insulation and 1.4 million households purchased subsidised DIY loft insulation. 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.
- x. The most effective delivery routes for CERT were found to be schemes involving the local authority, which was considered crucial (by delivery partners and householders) to reassure householders of a schemes credibility. Accordingly, this delivery route was found to be one of the most significant in terms of relative size.
- xi. Progress in developing CESP schemes to date has been slow. By June 2011⁴ 200 CESP scheme proposals had been submitted to Ofgem, almost all based around social housing developments. Ofgem reporting indicated one third of schemes submitted up to December 2010 included promotion of measures to both social rented and private households within the scheme areas; the remainder targeted just social rented households. Through schemes developed to this date, CESP has delivered solid wall insulation to around 6,660 households, in addition to loft insulation, double glazing and heating measures.
- xii. The main delivery partners for CESP schemes have been local authorities (often in their role as social housing providers) and housing associations. Although CESP was specifically designed to encourage partnerships with a wider range of community organisations (and deliver community benefits) these have not, in the main, manifested.

Uptake of measures under CERT and CESP

- xiii. Key drivers for uptake of measures (where householders made an active choice to have them installed) were expectations of energy bill cost savings, and a desire to make the home warmer / easier to heat. 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.
- xiv. Uptake of measures under CERT and CESP by social rented housing tenants has been high (measures were often delivered at no cost and/or as part of wider refurbishment work). Engagement with private rented tenants under both CERT and CESP has been more challenging, and it was generally considered that these schemes have not been able to overcome the landlord tenant split incentive.
- xv. Levels of satisfaction amongst householders with measures delivered under CERT and CESP were high. However, delivery stakeholders considered a need for greater consistency of standards for installation and advice, potentially led by Government, and felt this would help increase levels of awareness, trust and uptake of measures.

Impacts of CERT and CESP

- xvi. The main benefits from measures installed under CERT and CESP were reductions in household energy use, contributing to carbon emission reduction targets. Additionally, both policies have contributed to reducing fuel poverty and wider economic benefits including employment in the energy efficiency market and supply chain effects. CESP schemes have also led to considerable regeneration benefits in several communities.

⁴Ofgem annual reporting period for CESP runs to June rather than March 2011.

- xvii. The main reported benefits of CERT and CESP experienced by householders were warmer homes and/or reduced energy bills. Further evidence from the CESP evaluation available in 2012⁵ will confirm the extent of these impacts. Additionally, DECC analysis of the impacts of equivalent measures installed under the Energy Efficiency Commitment (EEC - the predecessor to CERT), demonstrated actual reductions in household energy use of around 10% for cavity wall insulation and 3% for loft insulation.⁶
- xviii. However, the actual energy savings from measures (installed under EEC) were somewhat lower than those expected (e.g. in policy Impact Assessments). Reasons for this are likely to include a number of different factors:
- Levels of 'comfort-taking' may have been higher than expected (i.e. having a warmer house as well as or instead of reducing energy use);
 - Insulation may have been inadequately installed and/or less effective than expected (e.g. because not all external walls could be completely insulated with cavity wall insulation);
 - Actual achieved savings from top-up loft insulation will have varied greatly, depending on the amount of existing loft insulation present.
- xix. The behavioural effects of installing measures under CERT and CESP were generally limited to how householders heat their homes. From the evidence, installation of measures had not prompted wider pro-environmental behaviour (e.g. travel, purchasing).
- xx. Very little information on costs of delivering CERT and CESP was available for this evaluation. However, administrative costs of CESP were considered by stakeholders to make it a comparatively more expensive scheme to deliver than CERT.
- xxi. The limitations of the evaluation make it difficult to say conclusively whether measures would have been installed in the absence of CERT and CESP, not least because similar supplier obligation policies have been in place and influenced the market since 2002. However, the evidence shows that the policies have helped address real barriers to uptake of measures including information deficiencies, uncertainty about benefits, access to capital, and skills and capacity in the market. Without these efforts it is unlikely many householders would have been able to seek out or install energy efficiency measures. Similarly, when asked directly, most energy suppliers stated they would not have delivered energy efficiency measures at all in the absence of the policies.

Lessons for future policy

- xxii. The available evidence provides a good understanding of how CERT and CESP have been delivered and impacted by their design, including the trade-offs and comparative effects of a fairly flexible mechanism with market-led delivery (CERT) vs a more prescribed approach (CESP). There are practical delivery lessons from each, in terms of partnership delivery approaches, supply chain, planning, and other constraints.
- xxiii. The following key lessons for policy design and delivery can be drawn from the evidence:
- Supplier obligations are successful at getting measures delivered at scale, starting with the successively least cost measures. However, there is a trade-off between regulating for intended outcomes and flexibility of the policy to achieve those outcomes in the most efficient way, with optimum participation from other parties involved in delivering them.

⁵ CESP evaluation 'physical monitoring' workstream, reporting in 2012.

⁶ Due to a lag in data availability, the latest data available for this analysis was from 2006-07. Change in annual household gas consumption was assessed using a matched control group. See NEED report for full details <http://www.decc.gov.uk/assets/decc/11/stats/energy/energy-efficiency/2078-need-data-framework-report.pdf>

- Longer term targets work best for establishment of partnerships and providing the required level of certainty for planning and investment, for all key delivery stakeholders. Likewise, simplicity in policy design is valued and policies work best when fully understood by all stakeholders - e.g. with regards to eligibility, metrics etc.
 - There is a need for any low income equity measures that are adopted to be well designed – e.g. an area-based approach is not necessarily the most effective way of targeting vulnerable households at risk of fuel poverty.
 - Professional installation standards are valued and called for by industry and consumers. Additionally, local government involvement provides confidence and is crucial for successful consumer engagement and uptake of measures.
 - A broad suite of delivery partners and routes is a natural market response, allowing energy companies to spread risk and achieve cost-effective delivery. Through this, geographical distribution of delivery of measures has been fairly equitable without any requirements, with the exception of very remote rural areas.
 - Consumers value energy efficiency measures once installed, and they have an identifiable impact on fuel bills. However, barriers remain for some people around awareness of measures and benefits.
- xxiv. However, some questions about certain aspects of the policies could not be answered by the evaluation, including a robust understanding of behavioural change impacts on consumers, costs to suppliers or additionality against other drivers. This is because the evaluations were not built into the policies from the start (e.g. to influence what baseline and monitoring data were collected, or how the policies were rolled out), meaning necessary information was not available.
- xxv. Building evaluation into the design and delivery of CERT and CESP⁷ would have helped ensure better understanding about the impacts, including effects of different delivery routes and robust evidence of costs and impacts. The following lessons can be drawn for future policy evaluation:
- Evaluation should always be considered early, including the key questions that need to be answered about ongoing delivery and impacts, and the likely data requirements. In many cases this will include baseline data and information about a control / comparator group, in order to assess the counterfactual.
 - Building evaluation into the policy delivery also provides the opportunity for testing out different delivery routes, for example by having a phased roll-out or targeting certain groups / areas and assessing differences.
 - Monitoring and evaluation requirements should be considered jointly, to maximise potential for collecting useful data for the evaluation. Careful consideration also needs to be given to data management, as well as the content and timeliness of published outputs – including how these can be reflected back into agreed ‘live’ policy review points.
 - Existing datasets can often be utilised for evaluation, but data ownership, suitability and robustness need to be carefully considered. Linked data can provide significant opportunities for assessing impacts, including interactions between different policies but resource constraints need to be factored in.

⁷ The CESP evaluation was planned at the start of the policy, but not built into the design, e.g. to influence how schemes were rolled out or what monitoring data was collected.

Introduction

Policy Background

1. Government's approach to avoiding dangerous climate change is underpinned by the Climate Change Act 2008, which requires a reduction of green house gas emissions of at least 34% below 1990 levels by 2020, and 80% by 2050. Since households account for 27% of all energy consumed in the UK (for example through electricity and gas consumption), the household sector is an extremely important route to delivering emission reductions. Energy efficiency improvements to homes offer significant opportunity to achieve this.
2. Two of the main current DECC policies (up to Dec 2012) promoting delivery of energy efficiency improvements to homes do so by placing an obligation on energy suppliers - the Carbon Emissions Reduction Target (CERT) and the Community Energy Saving Programme (CESP)⁸:
 - The primary aim of CERT⁹ is to reduce household carbon emissions by overcoming barriers to uptake of cost-effective energy efficiency measures, across all households in Great Britain. CERT started in April 2008 and was originally due to run until March 2011, but following the CERT extension, will run to December 2012.
 - CESP¹⁰ was designed to inform future policy, with the twin objectives of significantly reducing the fuel bills of low income households across Great Britain and improving the energy efficiency of the existing housing stock in order to reduce the UK's CO₂ emissions. CESP runs from October 2009 to December 2012.
3. CERT is the current main legislative driver for improving the energy efficiency of existing households in Great Britain. Since April 2008 CERT has placed an obligation on the six major gas and electricity suppliers with over 50,000 domestic customers to meet a carbon emissions reduction target (based on their number of customers) through delivery of measures to households. For reasons of equity this requires at least 40 per cent of the carbon savings to be met in Priority Group households (on certain benefits and/or over 70 years old). The overall carbon emissions target was set at 185m tonnes of carbon dioxide (CO₂) emissions (subsequently extended to 293 Mt CO₂ under the CERT extension).
4. CESP places an obligation on the six major energy suppliers, and also the four independent electricity generators (collectively termed 'energy companies'). CESP was designed to promote a 'whole house' and 'intensive area' approach, to be delivered through community-based partnerships in areas of low income in Great Britain (identified as Lower Super Output Areas (LSOAs) in the lowest 10% according to the Index of Multiple Deprivation (IMD) in England, the lowest 15% in Wales and the lowest 15% Data Zones in Scotland).¹¹ Up to 400 area-based schemes are now expected, covering around 90,000 homes.

⁸ Home energy efficiency improvements are also currently promoted through government schemes which provide direct grants to low income households against the cost of certain heating and insulation measures: Warm Front in England, the Nest programme in Wales and the Energy Assistance Package Scheme in Scotland. These schemes are not considered in this evaluation, except where they have been delivered in conjunction with CERT / CESP.

⁹ For further information about CERT see www.decc.gov.uk/en/content/cms/funding/funding_ops/cert/cert.aspx

¹⁰ For further information about CESP see www.decc.gov.uk/en/content/cms/funding/funding_ops/cesp/cesp.aspx

¹¹ See <http://www.communities.gov.uk/publications/corporate/statistics/indices2010>

Research approach and evidence base

5. This report presents a synthesis of the evaluation evidence related to CERT and CESP, to provide a comprehensive understanding of the policies up to March 2011 and inform development of a new Energy Company Obligation (ECO) under the Green Deal. Further final evaluations will be undertaken at the end of both schemes in 2013.
6. The report draws on a range of evidence, including independent evaluations of CERT and CESP and other analysis, to present an understanding of how the policies have worked in practice to deliver energy efficiency measures to households. Additionally, the impacts of energy efficiency measures on actual energy consumption are considered. Due to a lag in data availability this relates to measures installed under the Energy Efficiency Commitment (EEC), the predecessor to CERT, and therefore represents a proxy for the impacts of similar measures installed under CERT and CESP.
7. This evaluation synthesis draws on the sources listed below, and findings are presented with consideration of the relative strengths and limitations of the available evidence. Full details are included in the references section:
 - Evaluation of CERT - research examining how CERT has been delivered and taken up (with a particular focus on insulation and heating measures).
 - Evaluation of CESP - research examining how CESP has been delivered and householder experiences of schemes.
 - DECC analysis of the impact of energy efficiency measures delivered under EEC on household energy consumption.
 - CERT and CESP Impact Assessments.
 - Ofgem and Energy Saving Trust (EST) reporting of CERT and CESP delivery.

Key research questions

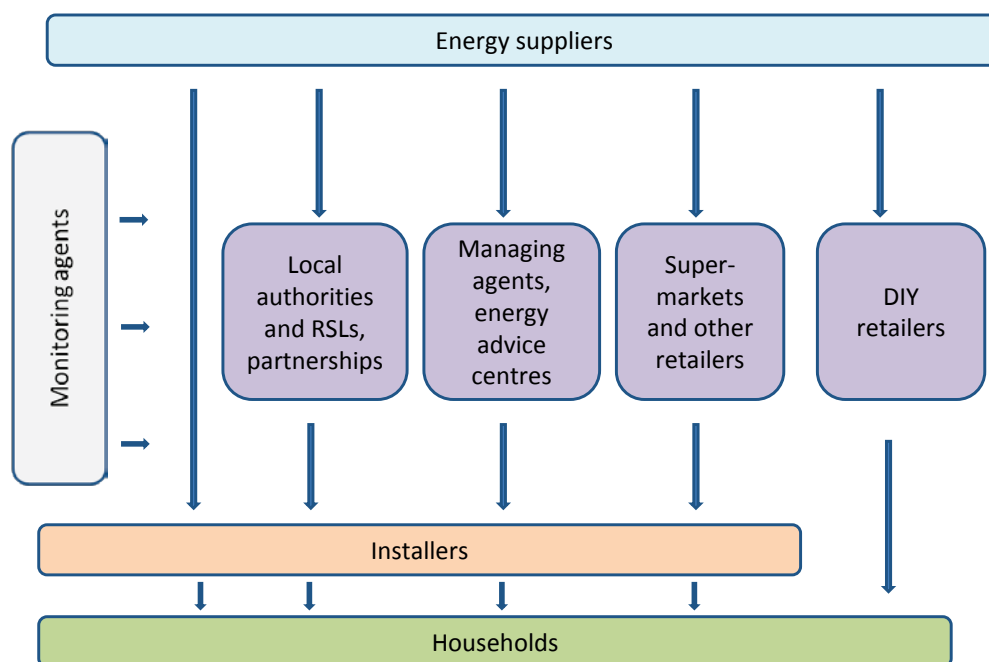
8. The evaluation of energy company obligation policies addressed the following key research questions:
 - How have energy suppliers responded to the design of CERT and CESP?
 - What has been delivered by CERT and CESP?
 - How and why have energy efficiency measures been taken up by households?
 - What are the impacts of CERT and CESP on energy use and more widely?
9. These research questions are addressed in turn in the key findings section. The report also highlights key lessons for future policy, limitations and gaps in the evidence, and future work planned to address evidence gaps.

Key findings

1. Energy supplier response to design of CERT and CESP

1.1 CERT and CESP delivery partnerships

10. The design of CERT assumed suppliers would meet their obligations in the most cost effective way: suppliers were free to choose any mix of measures (subject to prior approval from Ofgem); offer measures to any home (not just their own energy customers); and develop partnerships with other parties to deliver measures.
11. The research confirmed that all six major energy suppliers established partnerships with a wide range of organisations to deliver CERT heating and insulation measures through multiple delivery routes – as shown in figure 1. This included schemes involving local authorities, installers and managing agents; registered social landlords; and retail stores for direct sales of DIY loft insulation. Some of the energy suppliers only worked with preferred installers, while others worked with a wide range of installers and managing agents. In addition, one energy supplier delivered insulation measures directly to households through its insulation and heating business. There was some indication that the range of partnerships and delivery routes established was more extensive than originally anticipated by DECC and Ofgem.
12. Energy suppliers generally contracted delivery partners on the basis of the price per tonne of carbon saved (CERT measures have pre-defined carbon values, based on lifetime savings), with different prices for Priority Group / non-Priority Group households. This provided a commodity which has driven the market, and encouraged new entrants and innovative means of reaching households. Energy suppliers also felt that CERT had allowed development of the most commercially advantageous delivery approaches, aligned to individual corporate strategies. For example, using delivery of insulation measures under CERT to support promotion of the company's environmental credentials.
13. However, the design of CERT as a market based mechanism also meant that energy suppliers and delivery partners have been reluctant to share (commercially sensitive) information, including costs. A number of stakeholders, particularly local authority and social housing providers, felt that this created a lack of transparency in CERT partnerships and their negotiations with energy suppliers and other partners.

Figure 1 Delivery of CERT through partnership arrangements

Source: Ipsos MORI, CAG and BRE 2011: *Evaluation of the delivery and uptake of CERT*

14. In contrast to CERT, CESP was designed specifically to be delivered through community-based partnerships between local authorities, community groups and energy companies. The research found that although CESP partnerships were initially envisaged to include a broad collection of local organisations, in practice local authorities (often in their roles as social housing providers) and housing associations have been the main partners for energy companies. Key barriers to development of more holistic partnerships with social enterprises, community groups and local strategic partnerships mentioned by stakeholders was the relatively short timescale of CESP and its complex scheme design. It was felt that the lack of wider groups' involvement has meant schemes have missed opportunities to create the full added value that was anticipated (e.g. health advice, community action).
15. Nevertheless, research with delivery partners identified many examples of CESP partnerships creating added value, such as local authorities and housing associations identifying eligible householders, lending credibility to schemes, leveraging in match-funding and bringing wider community benefits. One of the key mechanisms to promote community partnerships under CESP was the requirement for energy companies to obtain a supporting letter from the local authority for each CESP scheme, to encourage local authority involvement in identifying synergies with other local initiatives and priorities. However, most stakeholders interviewed could not identify any specific benefits brought about by the local authority letter.

1.2 Effects of CERT and CESP policy design

CERT scoring and Priority Group targets

16. All obligated energy suppliers agreed that CERT has successfully driven delivery of the most cost-effective measures, using the most cost-effective delivery routes. This has led to wide-spread installation of loft and cavity wall insulation at low cost, mainly in 'easy to treat' homes and more accessible areas. The flip-side to this is that measures have been

delivered at lower levels in certain areas (e.g. inner cities and some remote rural areas) and houses, where delivery or installation costs were greater.

17. However, the design of CERT scoring which incentivised least-cost delivery of measures to achieve carbon scores also allowed some exploitation of the scheme and its objectives. Most notably in the case of over-delivery of free Compact Fluorescent Lamps (CFLs), some of which may not have actually been installed. Consequently, CFLs were excluded from the CERT extension phase of the policy.
18. The only CERT schemes which delivered more costly measures (e.g. solid wall insulation) were driven by partners with additional funding who had wider objectives, such as Registered Social Landlords (RSLs) and local authorities (e.g. addressing fuel poverty). Delivery stakeholders felt that CERT funding from energy suppliers, determined by attributed carbon scores, was not sufficient to adequately subsidise solid wall insulation (SWI) without such funding. However, this does highlight the effectiveness of such partnerships (and matched funding) in delivering higher cost measures.
19. Research with delivery stakeholders suggested that CERT scoring provided little incentive for professionally installed loft top-up insulation: it was felt that this had a relatively low carbon score compared to that installed in 'virgin' lofts (with <60mm insulation), and that energy suppliers paid installers less for these 'jobs', although installation costs were similar. Consequently, installers said they did not offer professionally installed loft top-up, or did so at a higher cost to households. This may have contributed to the overall lower levels of professionally installed loft insulation than expected (see section 2.2). However, there was evidence to suggest that in response to this 'gap' caused by the scoring, DIY loft insulation was often used for top-up insulation.
20. The research identified a view amongst delivery stakeholders that many were reliant on both the supplier obligation generally, and energy supplier's responses to CERT reporting targets and Priority Group ratios. This was considered to have shaped the insulation market, with consequential effects on other stakeholders in the supply chain - there was consensus about the 'stop-start' nature of demand, driven by energy supplier targets (although other factors such as seasonality were acknowledged to play a role). For example, it was reported by installers and managing agents that if an energy supplier had met their Priority Group target and stopped contracting these jobs, installers had to stop marketing efforts, as this could generate both Priority Group and non-Priority Group leads.
21. Similarly, delivery stakeholders mentioned that 'leads' for potential customers were often traded by managing agents, with price depending on energy suppliers' demand and need to meet overall and Priority Group targets. However, it was also suggested that in some cases installers and managing agents led this process and generated potential jobs before selling on the associated carbon savings to energy suppliers.

CESP intensive area approach

22. CESP was specifically designed to encourage intensive area approaches, whereby all households in targeted areas (defined by Lower Super Output Areas) would be engaged. Most stakeholders interviewed supported the principle of promoting area-based approaches, and agreed this had achieved cost-effectiveness benefits, through economies of scale and efficiency of delivery, and generated wider benefits for the area.

23. However, many stakeholders also felt CESP schemes had not achieved the levels of density of householder engagement and take-up (i.e. high proportion of households taking up measures within areas) that had been envisaged by DECC. Key issues mentioned by these stakeholders included the following:
- Low levels of engagement with, and take-up by, private householders.
 - CESP area boundaries which did not naturally align with those of communities or in some cases social housing estates;
 - A perception amongst some stakeholders that the area density uplift to scoring (additional 25%) did not provide a strong enough incentive to achieve maximum density in an area;
 - Difficulties in engaging with multiple landlords in areas where social housing is owned by several housing associations.

CESP whole-house approach

24. CESP was designed to encourage a whole-house approach to delivery and focus on hard-to-treat properties. In practice, the whole-house approach meant most houses received at least two measures under CESP, based on Ofgem data and stakeholder interviews. Energy companies interviewed suggested the scoring system encouraged them to favour just a small number of the available measures under CESP, generally combining solid wall insulation with a second measure. Delivery partners interviewed felt that in most cases measures had been selected based on what was needed in the properties.
25. A perceived challenge to achieving a whole house approach was difficulty in finding housing with a need for more than one type of measure, particularly in properties where landlords had already installed such measures (e.g. through CERT). This was felt by some stakeholders to have created a 'bad landlord paradox', whereby landlords who had not previously carried out energy efficiency works on their properties were more likely to be attractive propositions as partners to energy companies. However, this does suggest successful targeting of untreated harder to treat properties through CESP.

CESP scoring

26. There were mixed views amongst stakeholders on the CESP scoring system. Most stakeholders thought it had been successful in promoting a whole house approach and incentivising key measures such as SWI. The overall message from the research, however, was that the scoring system was too complex, creating a barrier to engagement with CESP. Delivery stakeholders felt that the restrictiveness and complexity of the scoring system had been a barrier to delivery and to getting schemes off the ground in the first place. Energy companies felt it had taken them a long time to understand how CESP works, which had delayed or prevented them from making offers to local authorities and housing authorities.

2. Delivery of CERT and CESP

2.1 How has CERT been delivered?

27. As outlined in section 1.1, CERT was delivered through a range of routes and partners. Key delivery routes for **professionally installed insulation** were as follows:

- About 70% of professionally installed insulation measures were **delivered directly to private households** (Priority and non-Priority Group) in the following ways:
 - Offers in conjunction with the local authority and other partners (including quite complex schemes such as Warm Zones and the Scottish Universal Home Insulation Scheme, which sometimes had matched funding and focused on particular geographic areas and benefit recipient Priority Group households). In all cases these schemes were primarily promoted via local-authority endorsed mail-outs and/or door-knocking.
 - Offers from installers and managing agents without direct involvement of local authorities, promoted primarily via advice centres, but also through advertising (by larger installers), employee schemes and targeted door knocking in localised areas.
 - Offers directly from energy suppliers; five of the major energy suppliers promoted national offers direct to households, at least one of which also offered preferential deals for their own customers. The other energy supplier made a targeted offer to their own customers only. These offers were publicised via energy bills, websites, national advertising campaigns and advice centres.
 - Offers through supermarkets and DIY stores, who often also promoted energy supply and/or DIY loft insulation materials.
 - About 25% of measures were **delivered to social housing tenants by Registered Social Landlords** (including local authorities in their role as landlords), primarily to benefit recipient Priority Group households. Requirements to meet 'Decent Homes' or equivalent standards for social housing meant installation of CERT measures via this route was often driven by wider renovation programmes. Consequently, energy suppliers considered it a cost-effective approach to delivering CERT measures, owing to economies of scale and the availability of matched funding from other sources (e.g. housing renovation funds).
 - About 5-10% of measures were **delivered in conjunction with a national Government scheme** (e.g. Warm Front in England, Energy Assistance Package in Scotland, or Home Energy Efficiency Scheme in Wales). These schemes were only open to some Priority Group households (both private and social rented tenure), with referrals made by local authorities, RSLs and advice centres.
28. **DIY loft insulation** was delivered almost entirely through direct sales by DIY stores, reflecting partnerships between these companies and the energy suppliers.
29. Ofgem reporting indicated that three of the six obligated energy suppliers had traded a small proportion of CERT targets over the three years 2008-11 of between 1 and 5% of carbon savings.

Most effective delivery models for CERT

30. The most effective delivery routes for CERT were widely considered to be schemes involving the local authority - either as the main source of communication, or at least endorsing an offer. This was considered crucial by most householders interviewed to reassure them of a schemes credibility and therefore drive uptake. Accordingly, this delivery route was found to be one of the most significant in terms of relative size.
31. More generally, energy suppliers and delivery partners felt that partnership approaches added value and resulted in higher rates of CERT delivery. In particular, by facilitating delivery to vulnerable (Priority Group) households (e.g. through cross-referrals), drawing in other funding sources (to cover more costly measures, associated costs of installations and/or subsidising delivery to households just outside the Priority Group) and, with regards to area-based schemes, offering opportunities for economies of scale and addressing barriers related to mixed tenure buildings.
32. In terms of how offers were most effectively communicated, visible and proactive promotion (e.g. door knocking) was considered key by both installers and householders in driving uptake, by actively increasing awareness and engagement with CERT measures. There was also considered to be a knock-on community effect of intensive localised offers, where the frequent sight of installers' vans and neighbours having measures installed created something of a 'social norm' leading to further local uptake.
33. Intensive schemes involving localised approaches obviously have a higher associated cost per household reached than advertising / mail-shots. However, the available evidence suggests they had a much higher uptake rate than other approaches (reported by managing agents as up to 60-70%, compared to 20-25% for advice centre website referrals), which may mean they were more or equally cost-effective overall.
34. In contrast, national advertising campaigns and offers promoted directly by energy suppliers (e.g. with energy bills) were considered less effective. These offers were considered too generic (with some disbelief by householders that the typical energy savings quoted would apply to them), and also required more active participation than an offer made on the door-step / telephone, which could be taken up there and then. Some householders also mentioned they doubted offers from energy suppliers because did not understand why suppliers would want to help consumers reduce energy use.

2.2 What has been delivered by CERT?

35. CERT was estimated to have delivered the following insulation and heating measures, based on evidence from Ofgem reporting of measures¹², as shown in table 1.

Table 1 Measures delivered by CERT

Measure	Number of measures delivered (April 2008-March 2011)
loft insulation (professionally installed)	2,021,600
cavity wall insulation	1,582,600
DIY loft insulation ¹³	1,426,000
solid wall insulation	39,670
Fuel Switching ¹⁴	70,040
CFLs	301 million

Source: Ofgem - CERT Update Aug 2011

36. A representative survey of GB households conducted in January 2011 confirmed measures had been taken up by households at similar relative levels between April 2008 and Jan 2011, based on respondent recall:¹⁵

- 21% of households reported receiving free or subsidised professionally-installed loft insulation; the majority (67%) were priority group households.
- 16% of households reported receiving cavity wall insulation, 58% of which were priority group households.
- 14% of households reported installing DIY loft insulation, just over half (55%) were non-priority group households.
- 2% of households received solid wall insulation, all in the Priority Group.

37. Ofgem reporting also indicated that measures delivered between April 2008 and March 2011 were equivalent to overall emissions reductions of 160 Mt CO₂ (197 Mt CO₂ including carryover from EEC), against the original target for this period of 185 Mt CO₂.

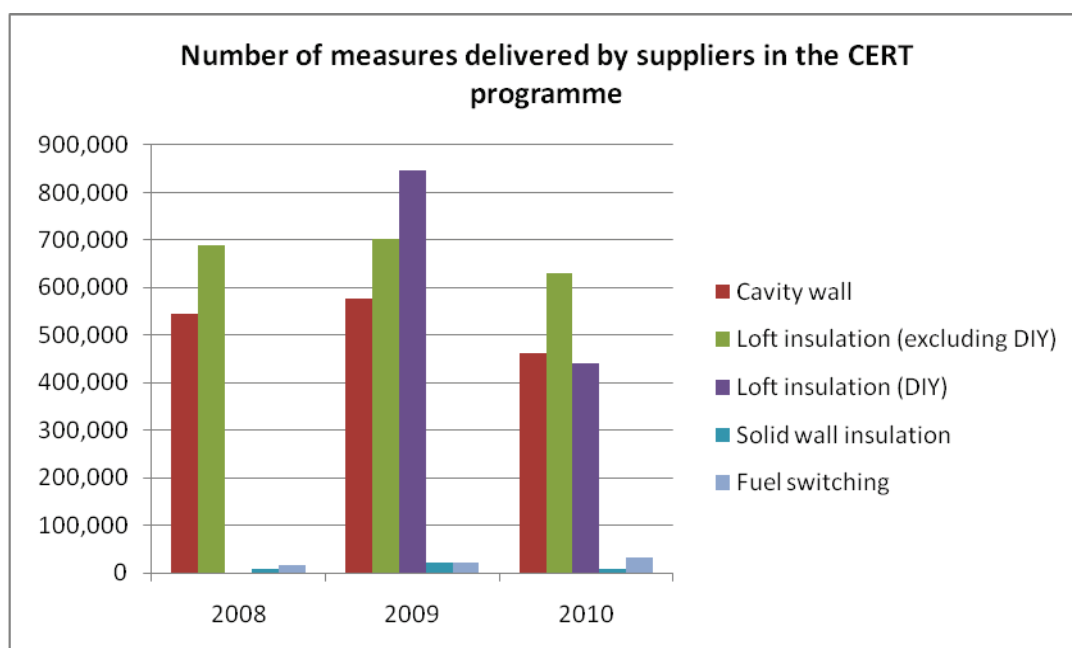
38. Delivery of measures over the CERT period has been fairly balanced, although there was greatest delivery in 2009-10, as shown in figure 2.

¹² See <http://www.ofgem.gov.uk/Sustainability/Environment/EnergyEff/CU/Pages/CU.aspx>

¹³ Estimated number of DIY-insulated lofts is calculated using estimated amount of DIY loft insulation sold (71.4 m² of material) and DECC's estimate of material required to insulate an average loft (50m² per household).

¹⁴ Fuel switching is defined as delivery of a central heating system (primarily mains gas) to a household which previously had no central heating system.

¹⁵ N.B. Although this survey was likely to have included a degree of over-claim (e.g. incorrect recall of measures not subsidised by CERT), relative distribution of take-up was found to be valid.

Figure 2 Delivery of CERT measures in each year of the programme

Source: OfGem - CERT quarterly reports 1-12

39. The CERT Impact Assessment considered an illustrative mix of measures, which examined how energy suppliers might meet an overall target of 185 Mt CO₂ by March 2011. The illustrative mix included the following forecast, as shown in table 2. The illustrative mix *excluding* carryover from EEC allows direct comparison to measures actually delivered. N.B. progress against CERT targets and assumed costs and benefits for CERT is based on measures delivered *including* carryover from EEC (also shown).¹⁶

Table 2 Illustrative mix of measures delivered by CERT

Measure	Measures carried over from EEC2 (2005-08)	Illustrative mix of measures for CERT (2008-2011), <u>excluding</u> carry-over from EEC	Measures delivered by CERT (2008-2011)
loft insulation (prof. installed)	737,470	2,112,500	2,021,600
cavity wall insulation	300,770	1,999,200	1,582,600
DIY loft insulation	686,000	1,024,000	1,426,000
solid wall insulation	33,270	44,700	39,670
Fuel Switching	76,610	43,300	70,040
CFLs	50.8 million	189.2 million	297 million

Source: DECC - CERT Impact Assessment 2009

¹⁶See impact assessment - http://www.decc.gov.uk/en/content/cms/funding/funding_ops/cert/cert/cert.aspx

40. Comparing what has been delivered to date with the illustrative mix forecast should be done with caution, since CERT has since been extended to run until December 2012 with a revised target of 293 Mt CO₂. However, it can be noted that numbers of all insulation and heating measures delivered are lower than projected, with the exception of loft insulation and fuel switching.
41. One of the main explanations for this is that delivery of CFLs was significantly higher than projected (297 million delivered vs 189 million projected in the illustrative mix), and therefore represented a much greater contribution to meeting the target. Additionally, there was some indication that insulation measures were not delivered in all potential cases - installers mentioned that carbon scores, and hence available CERT subsidies, were not generally high enough to cover their costs for loft top-up insulation or solid wall insulation.
42. There was also some evidence to suggest delivery of CWI had been lower than expected due to higher numbers of properties being 'hard to treat' and/or more costly to treat than expected (e.g. requiring additional work). These jobs had therefore been passed over in favour of more cost-effective properties and measures.

2.3 How has CESP been delivered?

43. Energy suppliers reported their approach to delivering CESP has been to use it as a learning opportunity for future energy efficiency policies and build on existing relationships with local authorities and housing associations. Energy suppliers with energy services businesses have sought to direct CESP activity through these where possible. Suppliers without energy services businesses have sought to deliver at least some schemes in-house to maximise learning opportunities and have generally taken a more 'partner-led' approach to delivery.
44. In contrast, the independent generators' approach has been to outsource their obligation by either contracting or trading it out. Findings from the research suggest their experience of CESP has not been positive. They believed their inclusion in the scheme was inappropriate and anti-competitive; their lack of in-house expertise on energy efficiency programmes or interface with household consumers were considered major challenges to delivering. Three of the four independent generators contracted out or traded all or part of their obligation.¹⁷
45. The research found energy companies have taken a number of approaches to developing CESP schemes to deliver measures. In terms of management, these can be split into three broad types:
 - Energy company-managed: typically, schemes are funded, project managed and delivered by the energy company, often using their own installation arms.
 - Client-managed: direct funding relationships, whereby the schemes are managed by either the local authority or the housing authority, with the energy company overseeing the carbon accounting, quality assurance and monitoring.
 - Third party-managed: schemes managed and delivered on behalf of the client and the obligated party by a third party organisation, typically a managing agent.
46. The process for developing schemes was found to vary; schemes had been initiated by a wide range of parties, including energy companies, local authorities, housing associations, managing agents and other third parties. In all cases it was felt that scoping out a scheme's

¹⁷ Ofgem reporting to December 2010 indicated that in total, trades amounted to 4.26 MtCO₂, with the net effect of transferring obligations for 3.17 MtCO₂ saving from generators to suppliers.

potential could be resource-intensive and in many cases did not lead to a scheme being agreed and delivered. Stakeholders reported that even when schemes are successfully agreed, the process can take up to a year from initial discussion to scheme start.

47. Specific issues identified by stakeholders as having held up or prevented schemes going ahead included the following:
- Lack of understanding about CESP and scoring system amongst delivery partners;
 - Poor or non-existent housing stock condition data held by local authorities and housing associations (required to assess viability of potential schemes);
 - Planning consent requirements for SWI (the planning process had caused delays in two of the nine schemes examined in the research);
 - Requirement for a supporting letter from the local authority;
 - Procurement issues, including tensions around use of energy company vs local authority / housing association supply chains.
48. It was also felt by a number of stakeholders that communication about CESP had been insufficient (e.g. from DECC and Ofgem), in particular timely guidance and support for delivery partners regarding expectations and funding arrangements.

2.4 What has been delivered by CESP to date?

49. Progress in developing CESP schemes to deliver measures has been slow. By June 2011¹⁸ 200 CESP scheme proposals had been submitted to Ofgem (equating to around 50% of the overall CESP target), with a substantial number of these planned for delivery in 2011-12. Ofgem estimates suggest that up to 400 schemes may be needed in total to meet the overall CESP target.
50. Through the schemes developed to date, CESP was estimated to have delivered insulation, heating and other measures as shown in table 3, based on evidence from Ofgem reporting of measures delivered between October 2009 and June 2011.

Table 3 Measures delivered by CESP

Measure	Number of measures delivered (Oct 2009-June 2011)
Solid wall insulation	6,660
Loft insulation (professionally installed)	2,190
Cavity wall insulation	450
Glazing	3,090
Fuel Switching	1,590
Boiler replacement	4,680

Source: Ofgem - CESP Update Sept 2011

¹⁸Ofgem annual reporting period for CESP runs to June rather than March 2011.

51. Most CESP schemes to date have focused predominantly on social rented housing, although it was originally envisaged CESP would target all households in an area regardless of tenure. Ofgem reporting indicated that one third of schemes submitted to December 2010 included delivering measures to private households (e.g. privately owned homes within social housing developments), while the remainder proposed to target only social rented households.
52. Social rented housing was considered by energy companies to provide more certainty in terms of take-up (the vast majority of households participate) and therefore achieved carbon scores, whereas take-up rates amongst private households was considered less certain. It was also mentioned that social housing focused-schemes tend to bring matched funding from social landlords, whereas schemes involving private households have tended to require contributions from individual householders, making funding and uptake more challenging.
53. Solid Wall Insulation (SWI) has been the most prevalent measure installed under CESP. The focus on SWI was thought by stakeholders both to have provided a useful learning opportunity and to have stimulated the SWI market.

2.5 Monitoring and quality assurance of CERT and CESP delivery

54. CERT imposes minimum requirements for independent technical monitoring and customer satisfaction (professionally installed measures) and utilisation monitoring (DIY loft insulation) in 1-5% installations. Additionally, some area-based schemes such as HIS and Warm Zones had more onerous monitoring requirements.
55. Ofgem monitors technical monitoring fail rates for key measures, by requiring energy suppliers to report on a regular basis. Overall technical monitoring 'failure' rates for CERT were reported by Ofgem to be around 15%. However, this included very minor issues as well as more serious technical failures. In cases where fail rates have been greater than 10%, Ofgem stated they ensure energy suppliers rectify all major failures (safety, legal or with a significant impact on carbon savings), and work closely with the suppliers in question to improve their ratio of pass and fail rates.
56. All energy suppliers reported having codes of practice for contractors under CERT and CESP, with varying contractual relationships. Product guarantee schemes for cavity wall insulation were generally considered successful by stakeholders in ensuring these installations were of good quality, although it was felt there was sometimes duplication between technical monitoring and other inspections. Installation of loft insulation was considered less closely monitored in this respect, with varying levels of expertise amongst installers leading to poor quality installations in some instances.
57. Consequently, many stakeholders felt there was a need for a common code of practice for installers, and a single robust and independent accreditation system to ensure greater consistency and standards. Similarly, there was considered to be a need for consistent industry-recognised standards for SWI.
58. Customer satisfaction levels (recorded by managing agents and installers) amongst those households who had taken up CERT measures were generally reported to be very high, and this was matched by findings from the household survey. However, examples of poor quality advice and referrals (with related poor take-up rates) were highlighted by some installers, with a suggested link to lack of consistent standards for energy assessors, advisors or door-step marketers.

3. Uptake of measures under CERT and CESP

3.1 Where have measures been delivered under CERT?

Households taking up CERT measures

59. Findings from the household survey suggested around 39% of GB households have taken up insulation and/or heating measures during the CERT delivery period (although this likely included a degree of over-claim, e.g. similar measures not covered by CERT). The survey indicated that take-up was spread across all income groups, and overall approximately 43% of measures were taken up by Priority Group households.
60. There was found to be greater relative take-up of CERT measures amongst owner-occupiers and social renters; people living in urban / suburban areas; and older, post-family households. This pattern of uptake reflects the following factors affecting delivery, identified in research with stakeholders and householders:
- the relative ease of encouraging uptake of measures in suburban areas;
 - higher costs associated with delivery of measures in metropolitan and remote rural areas;
 - reported challenges to delivering measures to the private rented sector; and
 - the drive to deliver measures in social housing and to householders aged 70+, to meet Priority Group targets.

Geographical distribution of CERT delivery

61. The available data on CERT delivery for April 2008-March 2011 reveals that insulation measures have been delivered in every region of Great Britain, but uptake has been higher in some regions than others, as shown in table 4.¹⁹

Table 4 Geographical distribution of CERT delivery

Area	Percentage of households that received loft and/or cavity wall insulation April 2008-March 2011
GB Total	10.0%
England	9.9%
Scotland	9.2%
Wales	13.1%
English Regions	
North East	12.9%

¹⁹ N.B. Data from the EST Household Energy Efficiency Database (HEED) which represents 86% of professional insulation installations reported to Ofgem, as presented in section 2.2 What has been delivered by CERT. See <http://www.energysavingtrust.org.uk/business/Business/Information/Homes-Energy-Efficiency-Database-HEED/CERT-reports-from-HEED>

Area	Percentage of households that received loft and/or cavity wall insulation April 2008-March 2011
North West	13.0%
Yorkshire and the Humber	12.5%
East Midlands	10.3%
West Midlands	11.0%
East of England	9.0%
London	4.2%
South East	8.5%
South West	10.6%

Source: EST - HEED report 2011

62. This data shows some variation between England (9.9%), Wales (13.1%) and Scotland (9.2%). The variation within the English regions was even greater, with 13.0% of homes in the North West but only 4.2% of homes in London receiving measures under CERT. However, within each region there is significant variation in delivery rates between local authorities, suggesting that the region a home is in is not the fundamental factor influencing delivery. The evidence from stakeholders confirms measures were most likely to have been delivered where costs of delivery lowest and demand and opportunities were greatest, e.g. where suppliers had customers and supply chains established.

Differences in uptake of CERT between property types

63. As noted previously, the majority of CERT measures delivered to date have been loft and cavity wall insulation - so solid walled homes are less likely to have received solid wall insulation than cavity-walled homes are to have received cavity wall insulation under CERT.²⁰
64. The household survey findings showed greatest uptake of measures was in semi-detached homes. There was also some evidence to show that flats were less likely to have received measures. This was in part due to the structure of properties; flats in blocks are without lofts and slightly more likely to be to be solid wall construction, and also more likely to have built more recently to higher energy efficiency standards.

3.2 Where have CESP schemes been developed?

65. CESP schemes have been delivered across Great Britain. However, in terms of regional coverage, Ofgem data shows that Scotland and London had disproportionately low numbers of scheme proposals compared to numbers of eligible areas, whereas in the East Midlands and the North East of England, the opposite is true.

²⁰ It is not possible to say whether solid walled homes were any less likely to have received loft insulation than those with cavity walls, but there is no reason to suspect this.

66. Energy companies interviewed said that there were few CESP schemes in rural areas, due to the low number of eligible areas in rural locations (51 out of the 4,500 areas eligible for CESP), and because of their preference for social housing, which tends to be more concentrated in urban areas.
67. No information is collected on the income of CESP recipients, making it difficult to judge how effective it has been in reaching low income households. However, analysis of English Housing Survey data suggests just over 20% of CESP-eligible households in England (located in areas in the bottom 10% of the IMD) are in fuel poverty, compared to a national average of 15%. In other words, households in these areas are only slightly more likely to be in fuel poverty than the national household population, suggesting that the bottom 10% of the IMD is not a particularly good proxy for identifying households in fuel poverty.

3.3 Drivers and barriers for uptake of energy efficiency measures under CERT

68. Key drivers for uptake of measures identified in the research were primarily expected cost savings, and secondly making the home warmer / easier to heat. A desire for helping the environment/ being greener was only considered a key driver for a minority of households, most commonly more affluent homeowners. However, this was considered a 'nice to have' by many other householders, who felt that being more energy efficient was the 'right thing to do', in addition to achieving cost savings. This is supported by the finding that householders who had installed CERT measures did not differ in terms of energy use behaviour or attitudes from surveyed householders who had not taken up measures. This suggests that CERT measures were not just being installed by early adopter / pro-environmental consumers.
69. Key barriers to uptake included perceptions of high up-front costs, often due to lack of awareness about offers, costs of measures, and/or eligibility for free or subsidised measures. In contrast, householders who had installed measures said that once they were aware of the low or subsidised cost (and predicted fuel cost savings), they felt they had little to lose in taking up measures. Lack of awareness about energy efficiency measures generally, and what would be appropriate for a particular household, was also identified as a barrier.
70. Other barriers to uptake of measures included concerns about aesthetics of measures - particularly raised by those living in properties which would require solid wall insulation, and 'hassle-factor' - particularly in relation to clearing and sorting items stored in the loft before insulation could be installed. Interviews with stakeholders and householders suggested that loft clearance services (offered with some CERT schemes) could partially address this barrier for some (but not all) householders.

3.4 Drivers and barriers for uptake of measures under CESP

71. Research with delivery stakeholders revealed that take-up of CESP in social rented housing had been near-universal, often because householders felt compelled to take part. Findings from a survey of households in six CESP scheme areas²¹ indicated 97% had received measures. However, the offer of free measures and the opportunity to save money on fuel bills were also considered important. Barriers to take-up of CESP amongst a minority of social rented households included concerns about the distress and disruption works might cause and a desire by some residents to keep their existing heating system.

²¹ Face to face survey with 342 households across six CESP schemes, conducted as part of the CESP evaluation.

72. In contrast, engaging private householders was considered a particular challenge by CESP delivery stakeholders. Key barriers identified included perceived costs and lack of affordability, in part thought to be due to poor communication about the cost of measures to residents. The key factor in schemes that had successfully engaged private households was that the measures had been offered for free. Other drivers for take-up included demonstration of benefits in completed properties / from their social tenant neighbours, and low interest loans for low-income householders.
73. Research with CESP delivery partners identified a number of issues and subsequent lessons about engaging householders in schemes; they reported that the more householders were effectively consulted at the scheme's outset, the higher that levels of take-up and satisfaction would be, and emphasised the importance of non-technical communication about works. Some also felt that giving householders some choice over the measures (e.g. colour of external wall insulation) increased their buy-in and interest.

3.5 Extent to which CERT addresses barriers to uptake

74. CERT was designed and introduced to help overcome a number of market failures and barriers which prevent take-up of energy efficiency measures. The extent to which CERT has achieved this in practice, as identified from research with householders and delivery stakeholders, is considered in the following table.

Table 5 Extent to which CERT has addressed barriers to uptake of measures

Barriers to uptake identified in CERT impact assessment	Extent to which CERT has addressed barriers
<p>Information deficiencies: Householders, will often not know that they could save money by taking measures to improve energy efficiency.</p>	<p>CERT has led directly to extensive information provision about energy efficiency measures including national advertising by energy suppliers; direct marketing by installers; and energy advice centres. There was also some evidence to suggest CERT had generated indirect provision of information such as word of mouth referrals and area effects.</p> <p>Provision of information was found to have led to take-up of measures, particularly intensive / pro-active approaches. However, lack of knowledge about measures was identified as a reason why some people had not taken up measures, suggesting CERT has not completely addressed this barrier.</p>
<p>Limited access to capital: Upfront costs of energy efficiency measures will prevent some households, especially the most vulnerable, from making cost-effective investments.</p>	<p>Perceived high upfront cost of measures was identified as a key reason for not taking up measures, confirming this barrier exists in practice.</p> <p>CERT was found to have delivered measures to able-to pay and Priority Group households across all income levels, which led to recognised benefits of bill savings and/or comfort taking.</p>
<p>Skills shortfalls: Households wanting to take up cost-effective energy efficiency measures would be unable to, at least in the short term, because there are not enough experts and</p>	<p>CERT has led to significant expansion of providers in the energy efficiency market, with a strong bias towards the measures incentivised by CERT scoring (loft and cavity wall insulation). However, there was some evidence to suggest levels of skills and expertise varied, with a need for more consistent standards and codes of practice.</p>

Barriers to uptake identified in CERT impact assessment	Extent to which CERT has addressed barriers
organisations with the skills and knowledge to advise on and implement measures.	
<p>Uncertainty: Energy efficiency measures may be subject to relatively long time lags between the upfront costs and long-term benefits (payback on investment). If there is uncertainty about the realisation of benefits householders will hesitate to make commitments</p>	<p>Research with householders identified some level of scepticism about the benefits of energy efficiency measures (prior to uptake). Where there was promotion of CERT measures through trusted sources (e.g. local authorities), this was found to have successfully overcome this uncertainty.</p> <p>Pro-active and/or tailored approaches (e.g. door-step marketing) were also considered more successful in convincing householders about specific benefits of energy efficiency measures they would experience.</p> <p>However, there was also some evidence to suggest lack of engagement with energy bills made it difficult for some householders to recognise energy saving benefits of measures. CERT has predominantly driven uptake of lower cost measures with fairly short payback periods, so it is not possible to say whether the same approaches hold true for measures with longer payback periods.</p>
<p>Incorrect price signals: Household decisions on energy consumption fail to take into account the environmental costs associated with (carbon intensive) energy use. The full costs to society of energy use are not adequately reflected in price, which creates lower than optimal incentive for households to consider the efficient use of energy.</p>	<p>There was some evidence from the research confirming this barrier - very few householders reported taking up measures for environmental reasons, and others said they had not taken up measures because they could easily afford the cost of energy. CERT has internalised some of the upfront cost of improving energy efficiency - i.e. the costs of CERT subsidies are passed on to all consumers via higher energy bills during the CERT period. However, CERT was designed to minimise costs to bill-payers, with the expectation that increases would be at least equalised by energy savings.</p> <p>It is recognised that CERT is just one of a number of policies which aim to reduce energy consumption.</p>
<p>Contractual problems: This particularly concerns landlords and tenants. Energy efficiency is often poor in tenanted households. Both tenant and landlord have little incentive to undertake energy efficiency improvements.</p>	<p>It is recognised that some barriers, such as the landlord-tenant split incentive for a rental property and access to capital, are not addressed by CERT and additional policy may be needed to overcome these barriers.</p> <p>This was confirmed by the research, which showed low levels of take-up of measures in private rented households.</p>

4. Impacts of CERT and CESP on energy use and more widely

4.1 Perceived benefits of CERT

75. The main realised benefits of insulation measures delivered through CERT were a warmer home (mentioned spontaneously by over 50% of survey respondents who had installed measures) and reduced energy bills (mentioned spontaneously by 48% of respondents who had installed measures). However, there was some evidence to suggest householders were less certain about the extent of bill savings. This may reflect lack of engagement with energy bills and awareness about energy consumption, which made it difficult for householders to discern energy bill savings from CERT measures. This may also suggest a level of comfort taking (leading to lower bill savings), and probably also reflects the context of rising fuel prices and a harsh winter when the research was conducted (Jan 2011).
76. The behavioural effects of installing CERT measures were found to be direct and generally limited to how householders heat their homes - e.g. having heating on for a shorter period of time and/or turning down heating thermostat (both of which would suggest an associated energy bill saving). Additionally, none of the householders involved in the research said they had increased use of heating in response to measures being installed. However, the evidence suggests some householders may not have (consciously) made any changes. Installation of measures was not considered to have prompted any further changes to energy use, or wider pro-environmental behaviour. Similarly, when asked directly, householders who had taken up CERT measures did not believe their attitudes towards the environment had changed as a result of having an energy efficiency measure installed.

4.2 Perceived benefits of CESP

77. As might be expected, the main perceived benefits of measures installed under CERT and CESP were similar. Evidence from research with householders suggested the majority had experienced warmer homes since the CESP measures have been installed and around half of respondents said they had reduced use of heating since installation of measures (e.g. using heating for fewer hours each day). There was some suggestion from the research that householders who received energy saving advice and understood how to use their heating systems experienced benefits to a greater extent (e.g. reducing use of heating, with resultant fuel bill savings).
78. Evidence from research with householders suggested that CESP measures have helped reduce the fuel bills of a sizeable minority of households. The household survey with CESP scheme participants²² found that although most respondents had not seen a change in heating expenses, a sizable minority said they had spent less on heating in the previous 12 months (2010-11), in a period when energy prices increased, on average.
79. The research also found that more than twice as many surveyed households who had received CESP measures reported a decrease in their heating expenses (25%) than an increase (11%) in the past year (the remainder were unsure), and most attributed the reduction to the scheme measures. In support of this finding, prior to installation, almost half of surveyed households said they found it too expensive to heat their homes adequately. However, since receiving measures all of these households reported they were now able to do so.

²² All respondents in the face-to-face survey who had received a CESP-funded measure (331), conducted as part of the CESP evaluation.

80. CESP's area-based approach was expected to lead to wider benefits for the areas targeted, including benefit entitlement checks, greater community engagement, environmental activity and householder behaviour change. The research found evidence of some, but not all, of these wider benefits in the schemes examined, including the following:

- Significant aesthetic improvements to the area;
- Perceived increase in community pride (mentioned mainly by delivery partners);
- Local employment creation;
- Benefits for local shops and businesses; and
- Perceived health benefits as a result of warmer homes.

4.3 Impacts of energy efficiency measures on energy use

81. From the available evidence it was not possible to assess the actual impacts of measures installed under CERT and CESP on household energy use, although this will be informed by further evidence from the CESP evaluation available in 2012.²³

82. However, the impacts of measures installed under the Energy Efficiency Commitment (EEC - the predecessor to CERT) on actual energy use were examined, representing a proxy for the impacts of measures installed under CERT and CESP. The National Energy Efficiency Data-framework (NEED) was used to analyse the change in energy (gas) consumption of households before and after the installation of energy efficiency measures, compared to a matched control group of households where no measures were installed. Due to a time-lag in availability of energy consumption data, this analysis examined the impacts of measures delivered to households in England in 2006. Additionally, due to difficulties in matching data, the analysis does not include flats.

83. Installation of both loft and cavity wall insulation was found to result in measurable reductions in household energy consumption, as shown in table 6.

Table 6 Impacts of energy efficiency measures on household energy consumption

Measure installed (during 2006)	Change in average annual gas consumption before and after measures (2005 & 2007) (kWh)	Change in average annual gas consumption (%)	Impact of measure (change for measure - change for control group)
Cavity Wall insulation (n= 15,750)	-3,384	-16%	-2,111
Loft insulation (n= 11,170)	-1,896	-10%	-624
CWI and Loft (n= 9,380)	-3,765	-18%	-2,493
Control group (no measures) (n= 910,910)	-1,273	-6%	NA

Source: DECC - NEED report 2011

²³ CESP evaluation 'physical monitoring' is assessing impacts of CESP measures on energy use, thermal comfort and energy bills, reporting in 2012.

84. This analysis suggests that on average, installation of cavity wall insulation resulted in average energy savings of 2,111 kWh per year (a 10% decrease), while loft insulation resulted in average savings of 624 kWh per year (a 3% decrease), once other factors had been controlled for (using a matched control group of households). Installing both measures resulted in a decrease of 2,493 kWh per year (12% decrease). For both measures, greater decreases were found for detached properties compared to semi-detached or terraced houses.
85. The actual energy savings achieved by installing cavity wall insulation under EEC can be very tentatively compared to the expected savings for measures installed under CERT, but there are important caveats:
- It was not possible to identify the proportion of loft insulation that was top-up (with a corresponding lower expected energy and carbon saving) vs 'virgin'. Therefore the average actual savings from loft insulation represents a wide range.
 - It is also important to note that NEED only identifies professionally installed measures, meaning the control group will have included households who installed DIY loft insulation. Additionally, NEED only captures about half of new boilers installed, meaning some households in the control group will be experiencing energy savings from installation of more efficient boilers. Therefore, the average savings achieved from cavity wall and loft insulation compared to the control group are likely to be underestimated. DECC analysis suggests this may be by around 170 kWh.²⁴
86. The expected savings for a typical 3-bedroom semi-detached house used in the CERT and CESP Impact Assessments were as follows, allowing for a degree of comfort taking (15% for most households; 40% for the most vulnerable) - i.e. having a warmer house as well as or instead of reducing energy use in response to energy efficiency measures:
- Cavity wall insulation: 3,554 kWh
 - Loft insulation (from <60mm): 1,996 kWh
 - Loft top-up insulation: 588 kWh
87. This suggests that actual savings of measures (installed under EEC) were somewhat lower than expected. From the available evidence it is possible to deduce this conclusively for CWI, but not loft insulation.
88. There are several possible reasons for savings being lower than expected, but it is not possible to say from the available evidence to what extent each of these were responsible:
- Levels of comfort-taking may have been higher than expected;
 - Loft insulation may have been poorly installed in some cases;
 - Cavity wall insulation may have been less effective than expected in some cases because not all walls could be completely insulated (e.g. due to garages / conservatories on external walls);
 - Achievable savings from loft insulation may have varied greatly, depending on the amount of existing loft insulation present.

²⁴ See page 34 of NEED report - <http://www.decc.gov.uk/assets/decc/11/stats/energy/energy-efficiency/2078-need-data-framework-report.pdf>

89. DECC is currently undertaking further work to explore these issues and better understand the effects of measures and other drivers of household energy consumption, including longer term effects.

4.4 Effects of CERT and CESP on the energy efficiency market

90. There was evidence to suggest that the insulation market has responded to the drivers and demand for certain measures, meaning capacity has developed significantly to deliver loft and cavity wall insulation, but much less so for solid wall insulation. Available evidence suggested there were 10,000 insulation installer jobs in 2010 (up from 5,000 in 2005)²⁵, with the majority of these being loft and cavity wall insulation. However, interviews with industry representatives revealed a view that this highly-subsidised market excluded smaller installers and builders merchants who may have difficulty accessing CERT funding and/or developing partnerships with energy suppliers.
91. However, it was widely felt that the overall shape of the insulation market was driven by the energy suppliers' responses to CERT, with consequential effects on other stakeholders in the supply chain - there was consensus about the 'stop-start' nature of demand, driven by energy supplier targets (although other factors such as seasonality were acknowledged to play a role).
92. There was also some evidence from research with stakeholders to suggest that costs of loft and cavity wall insulation had decreased markedly since the introduction of CERT, reflecting lower industry costs, economies of scale and the highly competitive market.
93. There was little evidence to allow comprehensive assessment of the impact of CESP on the energy efficiency market, although there was some indication that it had helped drive demand for solid wall insulation. It was also reported that CESP schemes had led to localised employment benefits.
94. Additionally, some energy suppliers thought that delivery of CERT had led to additional business benefits such as development of in-house insulation delivery and using CERT partnerships with retail stores to also market energy supply services. Some energy suppliers also believed such an approach might become increasingly important as a potential future model, with energy suppliers offering a broader range of energy services.

4.5 Would energy efficiency measures have been delivered without CERT and CESP?

95. When asked directly, most of the major energy suppliers stated they would not have delivered energy efficiency measures at all without CERT. Others felt they might have done so on a smaller scale. The limitations of the evaluation design make it difficult to say whether householders would have taken up measures in the absence of CERT.
96. Research with delivery stakeholders indicated a consensus that the CERT subsidy from energy suppliers was highly significant in driving the market for loft and cavity wall insulation, with an expectation amongst many consumers for free or cheap measures, rather than true demand for insulation. Consequently, there was an associated concern amongst delivery stakeholders that demand for these measures would decrease drastically in response to a change or stopping the policy.
97. However, the evidence shows CERT has helped address real barriers to uptake of measures including information deficiencies, uncertainty about benefits, access to capital,

²⁵ An assessment of the size of the UK energy efficiency market, Energy Efficiency Partnership for Homes (2008)

and skills and capacity in the market. Without these efforts it is unlikely many householders would have been able to seek out or install energy efficiency measures. Awareness of measures and their benefits appears to be a remaining barrier to uptake for some people.

98. Although CERT has delivered only a limited amount of solid wall insulation, there was some feeling amongst stakeholders that this might not have been truly additional. It was felt that social housing providers involved in these schemes would often have been required to improve the energy efficiency of housing to meet other existing requirements, and CERT merely provided top-up support. CESP was considered to have had a greater impact in this respect. Additionally, there was nonetheless a feeling that CERT and CESP had helped kick-start the market for solid wall insulation.

4.6 Costs of delivering CERT and CESP

99. All energy suppliers that delivered CERT agreed that it had effectively delivered cost-effective energy efficiency measures on a large scale, using the most cost-effective delivery routes. However, it was consistently reported by stakeholders that CERT mainly delivered low-cost measures which have been relatively easy to deliver - 'the low hanging fruit'. It was felt that many of the remaining insulation jobs will be more complex, and the costs of identifying potential customers and delivering measures were expected to increase over time.
100. Very little evidence on the actual costs of delivering CERT was available. Therefore, it is not possible to assess how these compared to the expected costs and benefits estimated in the Impact assessment²⁶, or how these costs were passed on to householders.
101. However, it has been possible to re-examine the expected costs and benefits of CERT, considering the *actual* numbers of measures installed under CERT (April 2008-March 2011) as reported to Ofgem, and the *estimated costs and benefits* as used in the CERT extension Impact Assessment (the most recent estimates available).²⁷
102. Based on this analysis, overall CERT appears to have been cost beneficial to society, with revised estimated benefits of £21.8bn outweighing revised estimated costs of £5.3bn (including measures carried over from EEC), as shown in table 7.

Table 7 Estimated overall costs and benefits for CERT (April 2008-March 2011)

Estimated costs and benefits (2010 prices) <i>(based on estimated costs and benefits and actual delivery of measures)</i>	CERT delivery <u>excluding</u> carryover from EEC (Apr 2008-Mar 2011)	CERT delivery <u>including</u> carryover from EEC (Apr 2008-Mar 2011)	Illustrative mix delivery <u>including</u> carryover from EEC (CERT Impact Assessment 2009)
Total costs £bn, PV	4.5	5.3	5.4
Total benefits £bn, PV	18.5	21.8	25.1

Source: DECC analysis, based on CERT Impact Assessments

²⁶ http://www.legislation.gov.uk/uksi/2009/1904/pdfs/uksiem_20091904_en.pdf

²⁷ <http://www.decc.gov.uk/assets/decc/consultations/certextension/121-iacertextension.pdf>

103. Similarly, the overall costs of CESP are unlikely to be published by energy companies due to commercial sensitivities. However, two out of three energy companies who responded to the question thought that the total costs of CESP would be higher than those estimated in the CESP Impact Assessment.²⁸
104. There was little consensus on the overall cost-effectiveness of CESP, but some stakeholders believed that the area-based approach had led to economies of scale and efficiencies in delivery. There was less agreement, however, on the cost-effectiveness of the whole-house approach.
105. In terms of the proportion of CESP costs met by delivery partners, it was assumed by government that the energy companies would meet most of the direct costs of the measures (the CESP Impact Assessment assumed energy companies would meet 82% of total CESP costs). Evidence from interviews with stakeholders suggests, however, that the financial contribution from the energy companies has been far lower than anticipated, varying between 10% and 100%. One reason for this is likely to be smaller than expected scheme sizes – generally energy companies reported they set £/CO2 targets and pitched offers for schemes to delivery partners on the basis of these. Therefore smaller individual schemes, and related estimated carbon scores, led to reduced levels of funding.
106. There was evidence to suggest some CESP schemes resulted in unanticipated additional costs, such as additional and consequential works (beyond the costs of actual measures). Local authorities and housing associations interviewed in the research reported that they had normally met these additional costs, thus further increasing the proportion of overall scheme costs they funded. In some cases expectations from local authorities and housing associations that CESP schemes would be fully-funded by energy companies, had presented challenges to development of schemes.
107. The size of the financial contributions might also be a reflection of the competitive nature of CESP, which encourages energy companies to meet their obligation in the most cost-effective way possible. On this basis it would be in their interests to find partners willing to contribute to the direct costs of the measures in order to minimise their own. Many stakeholders interviewed predicted that energy company offers would become more generous as CESP progressed and the pressure to find enough schemes to meet their obligations increased.
108. CESP was generally regarded as more expensive than CERT, principally because the measures involved are more costly. Energy companies also felt that the overall administrative costs of CESP had been higher than for CERT (despite it being a smaller scheme overall), due to the complexity of the scheme and scale at which it is delivered.

²⁸ http://www.decc.gov.uk/assets/decc/consultations/cesp/1_20090710121840_e_@@_cespia.pdf

5. Extent to which CERT and CESP have achieved objectives

5.1 Extent to which CERT has achieved expected impacts

109. The following table considers the extent to which CERT has delivered against expected impacts, based on the available evidence.

Table 8 Extent to which CERT has achieved expected impacts

Expected impacts of CERT	Achieved impacts of CERT
<p>Environmental benefits by reducing carbon dioxide emissions by 185 MtCO₂ (overall lifetime savings) at the end of the programme (since superseded by the CERT extension of 293 MtCO₂ by Dec 2012).</p>	<p>Based on number of measures delivered (Ofgem reporting), and expected carbon savings per measure (CERT Impact Assessment), CERT appears to have achieved the expected level of carbon savings to March 2011.</p> <p>However, other evidence demonstrates that although installation of measures led to energy savings, this was slightly lower than the expected savings for measures, on average, likely to be due to a range of factors.</p>
<p>Social benefits through reducing fuel bills and improving comfort, thus also contributing to the alleviation of fuel poverty and the risk of ill health caused by cold homes, particularly for children and the elderly.</p> <p>CERT provides particular help to those on low-incomes or with disabilities, and elderly householders, by requiring 40% of energy savings to be focused on a priority group households in receipt of certain benefits, and/or with a member aged 70 or over, which, together, make up about 42.8% of all households.</p>	<p>The evidence suggests CERT has resulted in delivery of energy efficiency measures to households across most areas of GB, and to Priority Group and able-to-pay households in approximately the expected proportions.</p> <p>Benefits of warmer / easier to heat homes following installation of measures were widely reported by householders across all income groups and housing types.</p> <p>From the available evidence it is not possible to say whether this led to longer term impacts such as wider health benefits.</p>
<p>Lower energy bills and/or increased comfort, from savings of about £35 per household per year for the lifetime of the measures on average, continuing for many years beyond the CERT period.</p>	<p>CERT appears to have led to greater comfort and lower energy bills, based on retrospective householder perceptions. This is supported by evidence demonstrating that installation of energy efficiency measures under EEC led to reductions in energy consumption (which would have had associated bill savings).</p> <p>However, from the available evidence it is not currently possible to quantify the extent of this impact for CERT.</p>
<p>Additional economic benefits in promoting innovation by creating market opportunities for new or more efficient technologies and by providing certain incentives for demonstration and market</p>	<p>The available evidence shows that CERT has contributed to growth in the energy efficiency market, including significant increases in capacity to deliver insulation measures and energy efficiency jobs.</p>

Expected impacts of CERT	Achieved impacts of CERT
transformation (including green jobs).	However, there was also some evidence to suggest that the energy efficiency market is largely dependent on the CERT subsidy, and would not be maintained without it.
Contribute to improving security of energy supply by reducing demand in the domestic sector.	<p>The evidence showing the extent of measures delivered under CERT, and demonstration of reductions in energy consumption following installation of similar measures under EEC, suggests there will have been an impact on overall energy demand.</p> <p>However, from the available evidence it is not possible to quantify the extent of this impact, including rebound behaviour.</p>

5.2 Extent to which CESP has achieved objectives

110. Similarly, the following table considers the extent to which CESP has delivered against its objectives to date, based on the available evidence.

Table 9 Extent to which CESP has achieved objectives

CESP objectives	Extent to which CESP has achieved objectives
Reducing the fuel bills of low income households	<p>Since no monitoring has taken place under CESP of the income of actual recipients of measures, it is difficult to say with confidence how many CESP recipients are on low incomes. The evidence does suggest, however, that CESP measures have reduced the fuel bills of recipient households, across a range of income levels.</p> <p>Ongoing work on physical monitoring in households where CESP measures have been installed will provide data on the actual energy savings and associated bill savings.</p>
Improving the energy efficiency of the existing stock	<p>Many delivery partners perceived that CESP had a very beneficial effect on recipient homes, and the measures, particularly SWI, are known to provide substantial energy efficiency benefits.</p> <p>Ongoing work on physical monitoring will provide data on the actual energy efficiency benefits of installing CESP measures.</p> <p>In addition, local authorities and housing associations have been encouraged to improve the housing stock condition data they hold, which aids development and targeting of schemes.</p>
Partnership working with a wide range of organisations to drive delivery of measures	<p>In practice, local authorities and housing associations were found to be the main partners, but wider types of organisations were not generally involved. Nonetheless, important partnerships have been built, which were expected to continue into the future. The key driver for energy companies working with them has been their role</p>

CESP objectives	Extent to which CESP has achieved objectives
	<p>as social landlords: they have easily-accessible housing stock, match-funding and credibility with their tenants.</p> <p>Wider community benefits have been achieved though schemes, although these have not been as far-reaching as expected.</p>
<p>Informing longer term strategy on energy efficiency by providing evidence on use of intensive area and whole house approaches, particularly in reaching hard to treat homes.</p>	<p>There was strong support for area-based action in low income areas and the whole-house approach was considered right in principle, but learning from initial schemes suggested a number of improvements including:</p> <ul style="list-style-type: none"> - a need for increased flexibility and freedom to put together tailored packages of measures; - a focus on incentivising <i>completed</i> properties (recognising pro-active owners may have already installed some measures); - a more flexible means of defining area boundaries, and possibly separate identification of eligible rural areas to encourage rural action; - continued focus on low income areas, with improved means of targeting low income / fuel poor households; - greater incentives to ensure that low-income private households benefit as well as social rented households. <p>Additionally, CESP was considered to have been a good learning opportunity for testing large-scale solid wall installation, and focusing on hard to treat properties, and has helped to kick-start the SWI market.</p>

6. Limitations of the evidence and lessons for future policy evaluation

6.1 Limitations of the evidence and evaluation design

111. The available evidence provides a good understanding of how CERT and CESP have been delivered and impacted by their design, including the trade-offs and comparative effects of a fairly flexible mechanism with market-led delivery (CERT) vs a more prescribed approach (CESP). However, there are remaining gaps in the evidence which prevent in-depth learning about certain aspects of the policies.
112. Monitoring and review were built into CERT and CESP delivery, ensuring a fairly good understanding about outputs of the policy - namely estimated number of energy efficiency measures delivered and energy supplier progress towards carbon targets. This allowed ongoing review of delivery, and led to a number of amendments to the policy – including expansion of the scheme and exclusion of CFLs. However, comprehensive evaluation was not systematically designed into the policies from the start. This has limited the ability to assess all of the outcomes and impacts, and robustly attribute these to the policies.
113. Planning the evaluation from the outset would have helped ensure that all the key questions about the policies could be answered - in particular what would have happened in their absence. From an assessment planned retrospectively it is not possible to say conclusively whether householders would have installed energy efficiency measures or not without CERT, or whether energy suppliers and other players would have acted to provide them. This would have required collection of baseline data, for a control group as well as those affected by the policy.
114. Similarly, the available evidence suggests CERT and CESP resulted in some changes in energy-use behaviour (e.g. use of heating), particularly if measures were delivered in conjunction with energy-saving advice. However, it is not possible to say conclusively that this is a result of the policy, or understand whether changes were sustained over time, or had wider effects (e.g. use of household appliances, travel / purchasing behaviour etc). Again, this would have required before and after assessment of behaviour and intentions.
115. Considering the key evaluation questions and information needs at the outset would also have helped ensure monitoring data requirements were closely aligned with evaluation data needs for CERT and CESP:
- For example, information about actual number of measures delivered through different CERT delivery routes was not available, because reporting requirements only specified provision of estimated carbon savings and total number of measures delivered.
 - Additionally, there was no legal requirement for energy companies to provide any information about costs of delivering or levels of subsidies for CERT or CESP, and they were reluctant to divulge any such commercially sensitive information in retrospective research. This limited the evaluation from assessing exactly how cost-effective CERT and CESP are, and how costs are passed on through the supply chain or to consumers.²⁹
116. Lastly, it was not possible to accurately compare the outcomes and relative strengths and weaknesses of different delivery routes and models, e.g. because it was not possible to track uptake of measures through a certain delivery route or wider effects. Building an evaluation into the policy roll-out could have helped ensure this.

²⁹ N.B. since CERT was designed as a market-based mechanism which relied upon energy suppliers' commercial interests and interactions, there would likely have been limitations to what cost information could be collected, even if planned in from the start.

117. However, it has been possible to demonstrate other key impacts from the available evidence, namely the actual effects of supplier obligation policies on household energy consumption. NEED provides a powerful tool for DECC to assess the effects of policies on household energy consumption, by assembling and matching existing datasets. Further work in this area will provide greater understanding, including how effects vary amongst the population and over time, and interactions between different policies. Additionally, further planned work to assess costs of delivery will provide an indicative understanding about actual costs and benefits of CERT and CESP.

6.2 Further work planned to address evidence gaps

118. In addition, work is ongoing which will help address some remaining evidence gaps. Specifically, the following analysis is currently being undertaken or planned:

- Ongoing collection and reporting of numbers of measures delivered;
- Further distributional analysis of measures delivered under CERT;
- Delivery of selective appliances and consumer electronics under CERT and their comparative market penetration;
- Collection and analysis of insulation installation failure rates under CERT and CESP;
- Further work to determine actual costs of delivering CERT and CESP;
- The impact for consumers and the market of regulating for an Insulation Obligation and Super Priority Group in the CERT extension;
- Monitoring change in household energy consumption following installation of CESP measures.

6.3 Lessons for future policy

119. Having acknowledged the limitations of the evidence and what can be drawn from it, the following table presents the lessons which can be drawn from the findings for future policy development:

Table 10 Lessons for future policy design and delivery

Lessons for future policy design	Lessons for future policy delivery
<ul style="list-style-type: none"> • Supplier obligations are successful at getting measures delivered at scale, starting with the least cost measures and successively lowest hanging fruit. • There is a trade-off between regulating for intended outcomes and flexibility of the policy to achieve those outcomes in the most efficient way, with optimum participation from parties involved in delivering them. • Longer term targets work best for establishment of partnerships and providing required certainty for planning and investment, for all key delivery stakeholders. 	<ul style="list-style-type: none"> • Professional installation standards are valued and called for by industry and consumers. • Distribution of delivery of measures has been fairly equitable without any requirements, with the exception of very remote rural areas. • Local government involvement provides confidence and is crucial for successful consumer engagement and uptake of measures. • A broad suite of delivery partners and routes is a natural market response, allowing energy companies to spread risk and achieve cost-effective delivery. • It is important to have broad reporting channels

Lessons for future policy design	Lessons for future policy delivery
<ul style="list-style-type: none"> • Simplicity in policy design is valued and policies work best when fully understood by all stakeholders - e.g. with regards to eligibility, metrics etc. • There is a need for any low income equity measures that are adopted to be well designed – e.g. an area-based approach is not necessarily the most effective way of targeting vulnerable households at risk of fuel poverty. • There will always be a trade off between environmental and social (energy bill) impacts of energy efficiency policies; policy objectives need to acknowledge this. 	<p>and regular communication between government, the regulator and local partners, to ensure maximum buy-in to and delivery of schemes and measures.</p> <ul style="list-style-type: none"> • There will always be some risk that policies are not delivered as intended, and the design needs to allow for regular review and swift response to underperformance and/or unintended outcomes. • Consumers value energy efficiency measures once installed, and they have an identifiable impact on fuel bills. However, barriers remain for some people around awareness of measures and benefits.

120. In addition, the following lessons can be drawn for future policy evaluation:

- Evaluation should always be considered early and built into policy delivery, including the key questions that need to be answered about ongoing delivery and impacts, and the likely data requirements. In many cases this will include baseline data and information about a control / comparator group, in order to assess the counterfactual.
- Building evaluation into the policy delivery also provides the opportunity for testing out different delivery routes, for example by having a phased roll-out or targeting certain groups / areas and assessing differences.
- Monitoring and evaluation requirements should be considered jointly, to maximise potential for collecting useful data for the evaluation.
- Existing datasets can often be utilised for evaluation, but suitability and robustness need to be carefully considered. Linked data can provide significant opportunities for assessing impacts, including interactions between different policies.

7. CERT and CESP scheme case studies

121. The following case studies from the CERT and CESP evaluation research provide examples of how schemes have been delivered in practice. Further details are provided in the main reports.³⁰

CERT delivery case study: intensive area-based scheme

CERT insulation and heating measures have been delivered in a number of areas through intensive area-based schemes. One such scheme in the North East of England was developed and delivered by the local authority in partnership with local organisations including a Registered Social Landlord (RSL), the Primary Care Trust (PCT), Jobcentre Plus, Energy Saving Trust (EST) and the Fire Service, with CERT funding from a single energy supplier.

The main measures offered were cavity wall and loft insulation. CERT provided free measures for Priority Group households and local authority funding was used to extend eligibility to any householders aged over 60, or with dependent children aged under six.

Measures were promoted directly to every household in the area via a letter from the local authority and subsequent doorstep approach and assessment. Other promotional activity included outreach events, displays in supermarkets and shopping centres, press advertising and promotion through schools. The EST also made referrals to the scheme from its advice centre, and promoted the scheme with local employers.

The scheme was established in 2008 and by December 2010 had achieved the following:

- 1,760 of the 2,700 targeted households received an assessment (including self-assessments);
- 275 households received cavity wall insulation;
- 318 households received loft insulation;
- Additionally, referrals to the parallel Health through Warmth scheme resulted in 105 Boiler replacements, 49 Central heating systems, 19 Boiler repairs, 14 Warm Front voucher applications, and 575 Benefits checks.

The following success factors were found to be important:

- **Partnership working and cross-referrals** by the agencies involved enabled more effective targeting of vulnerable households, and **additional funding** from the local authority and health scheme meant more of these households could benefit.
- **Simplified customer journey** – the person doing the initial door knocking also conducted an eligibility check, and a second visit to complete the technical assessment was undertaken as soon as possible. This lessened the chance of households dropping out due to delays or lack of availability.
- **Clearly branded scheme** – there was found to be widespread awareness of the scheme's branding and the installer firm, which instilled familiarity and confidence.
- **Close involvement of the local authority** provided additional reassurance that offers were genuine.
- **Intensive area-based activity** and the **broadened eligibility criteria** for free measures helped 'normalise' take-up of free / low-cost measures.

³⁰ Ipsos MORI, CAG consultants and BRE, 2011; CAG consultants, Ipsos MORI and BRE, 2011.

CESP delivery case study

One of the larger CESP schemes was delivered in an ex-local authority housing estate in a major city, now managed by a housing association, but with a number of owner-occupied properties.

The CESP scheme was led by an energy supplier in partnership with the housing association, with the work carried out by a number of different sub-contractors, including some contracted by the supplier. The local authority also played an important role, actively supporting the initiation and development of the scheme.

All delivery partners were positive about how the partnership had operated, and all agreed that the area-based and whole house approach was more efficient and effective than individual actions in delivering energy upgrades.

Two key challenges to development of the scheme were identified:

- Encouraging owner-occupiers in mixed tenancy blocks to sign up to the scheme, and thereby allow work on the whole block to take place. Although it was felt that private households had been engaged and generally saw the benefits of measures, it was reported that many of these households found it difficult to raise the capital required to pay for the measures.
- Area boundaries set for CESP schemes (LSOA) which did not map exactly with the estate managed by the housing association, meaning that some tenants had not been offered measures under CESP. This caused understandable dissatisfaction among those householders excluded and also a dilemma for the housing association, which is committed to treating all tenants equally.

Key benefits of the scheme included the following:

- expected reductions to household energy bills of around 40% as a result of CESP measures, for low-income households.
- The CESP-funded work was undertaken in conjunction with general upgrades of properties, giving the whole area a significant facelift.
- Wider community benefits included use of local labour by contractors and a commitment by the energy supplier to upgrade a community hall. In addition, a community café was set up to cater for the 150 staff working on the scheme raising money for a community trust to be reinvested in other projects.

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