Department of Energy & Climate Change

Consultation on options to reduce electricity demand - Government Response

A Government Response to 'Electricity Demand Reduction, a consultation on options to encourage permanent reductions in electricity use' November 2012

May 2013

Department of Energy and Climate Change

Consultation on options to reduce electricity demand

Government Response

Presented to Parliament
by the Secretary of State for Energy and Climate Change
by Command of Her Majesty

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Foreword

By Edward Davey, Secretary of State for Energy and Climate Change

The Coalition is determined to help cut energy bills for consumers, reduce costs for businesses and bring down our emissions. Improving energy efficiency is often the most cost effective way of achieving these goals. We already have a range of schemes in place and in the pipeline aimed at reducing wasteful energy use and tackling barriers to efficiency including the flagship Green Deal and the Green Investment Bank. With greater ambition we can go further.

In November 2012 we launched a consultation to explore what more can be done to reduce electricity demand across the UK, a key part of the Coalition's mission to realise the energy efficiency potential in the UK economy as set out in our Energy Efficiency Strategy.

The consultation sought views on a range of options including the provision of financial incentives to encourage greater efficiency in the use of electricity. This included both market wide incentives which would be open to a broad range of sectors and technologies and targeted incentives which would be focused on particular areas or sectors of the economy. We also consulted on whether voluntary and information approaches could be effective such as an energy efficiency information hub or better labelling on products.

Responses to the consultation showed that the majority of stakeholders were supportive of action to support electricity demand reduction. There was support for the idea of providing a financial incentive to encourage reductions in electricity use and voluntary and informational approaches were supported by the majority of those who responded to the consultation.

We know that there is significant potential for greater electrical efficiency in the UK - up to 32 terawatt hours or around 9% of total demand in 2030. We also know that reducing the amount of electricity we use could also deliver significant benefits. For example, a 9% reduction in overall demand could deliver, in 2030:

- savings of around £2.3 billion[1];
- cut emissions in the traded sector by 3.2 mega tonnes (equivalent to the amount produced from the electricity use of around 1.8 million households in a year); and
- save electricity equivalent to that generated by around four power stations in a year.

This paper sets out the Government's response to our consultation. If we can seize this opportunity now the prize is significant – reduced electricity consumption can help lower bills, reduce emissions and means less generation and transmission infrastructure will be required to meet demand over the longer term. We also have the opportunity to create jobs by leading the way forward on efficiency. We look forward to working with all interested parties to make these benefits a reality.

EDWARD DAVEY

[1] These are the net savings to society in 2030 expressed in 2012 terms, undiscounted.

Contents

Introduction

Consultation Background

1. The Electricity Demand Reduction Project was initiated in 2011 to fulfil the commitment made within the Electricity Market Reform White Paper (2011) to assess whether there is sufficient support and incentives available for households, businesses and organisations to use electricity more efficiently.

2. Analysis indicated that there is significant potential for using electricity more efficiently across a range of sectors in the UK and that, even after taking account of existing and planned policy, the UK is unlikely to realise all of this potential.

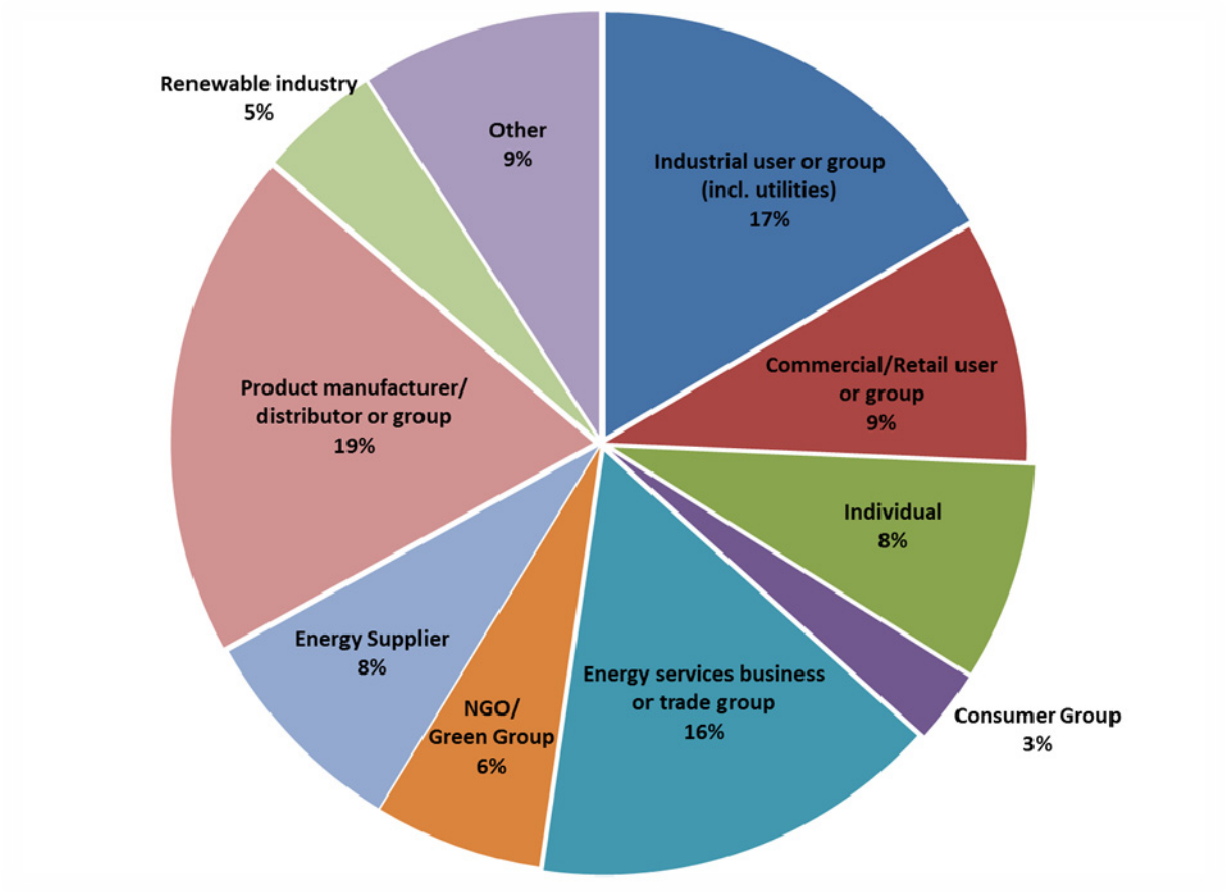
3. In November 2012 Government published a consultation document '*Electricity Demand Reduction, a consultation on options to encourage permanent reductions in electricity use*' which sought views on what more might be done to incentivise, support and encourage the efficient use of electricity. The consultation particularly asked for views and evidence on:

    - the opportunities for more efficient electricity use across a range of sectors;
    - the barriers that prevent this potential from being realised;
    - whether financial incentives could deliver cost effective reductions that are beneficial to society as a whole; and
    - whether voluntary and information approaches could also be effective.

4. The consultation closed on 31 January 2013. During the consultation period a total of 21 separate meetings or events were held with stakeholders to discuss and explore views towards the options consulted on including workshops held in London and Edinburgh.

5. A total of 109 written responses were submitted to the consultation from a wide range of stakeholders (see chart 1 below). Sectors represented included industry, commerce, energy services businesses, green groups, energy suppliers, product manufacturers, the renewables industry and individuals among others. A full list of those who responded to the consultation is provided in annex A (see pages 26-27).

Chart 1: Overview of those who responded to the EDR consultation broken down by sector



Options consulted on

6. The consultation sought views on whether financial incentives could help to reduce electricity demand as well as whether non-financial options could be effective.

7. Two broad categories of financial incentives were consulted on:

- **Market wide financial incentives** – which would be open to a large number of participants, across all sectors, and a variety of technology or process efficiency improvements providing verifiable reductions in electricity demand could be delivered; and

- **Targeted financial incentives** which would be focused on a specific pocket of potential (e.g. a particular technology) or part of the market e.g. as in a scrappage scheme.

8. Three alternative ways of delivering a market wide financial incentive were outlined in the consultation:

- **A Premium payment** – which would provide a payment per kilowatt of electricity saved, similar to a feed in tariff approach. This would involve auctions for electricity demand reduction measures based around a desired volume of energy savings;

- **EDR participating in the Capacity Market** – reductions in electricity demand would be able to bid against those supplying capacity in the Capacity Market and would receive a payment for each kilowatt of demand reduction delivered; and

- **A Supplier Obligation for electricity demand reduction** – where suppliers would be obliged to deliver a volume of savings in the non-domestic sector (as the domestic sector is already covered through ECO) either directly through their customer base or potentially through a traded certificate scheme.

9. Two different types of targeted financial incentives were consulted on:

- **A scrappage scheme** – where payments would be made to reduce the cost of replacing an existing piece of equipment with a new more electricity efficient version e.g. as happened in the boiler scrappage scheme; and

- **Capital grant scheme** – where a payment would be made to reduce the cost of purchasing a more electricity efficient piece of equipment when this decision is made (replacement of existing equipment would not be required).

10. The non-financial options outlined in the consultation document included:

- **A Buyer's Commitment** which would recognise organisations that commit to only buy appliances or electronics with a high level of efficiency;

- **Additional labelling** for non-domestic appliances and products. For example, the inclusion of information about lifetime electricity running costs to help inform decisions at the point of purchase;

- **An Industrial Processes Information Hub** which would provide a web-based resource which would seek to bring together the best available expertise in industrial energy efficiency, such as recent research, energy efficiency solutions and tools, best practice training material etc; and

- Support for **disaggregated metering** to help organisations install additional meters to give a more detailed understanding of their electricity use and so overcome information barriers.

11. A total of 30 consultation questions were included in the consultation document. This document summarises responses to the questions posed, key themes that emerged from the consultation and sets out the Government response.

Government response

12. Reducing the amount of electricity we use can help people lower their bills, reduces emissions and means less generation and transmission infrastructure will be required to meet demand over the longer term.

13. Government believes there could be a strong case for a financial incentive for permanent reductions in electricity demand, and that a market-wide incentive is the best approach. Even after the costs of EDR measures are factored in, estimates suggest EDR could deliver net benefits to society of around £0.7bn[2]. Therefore Government proposes to amend the Energy Bill such that a market wide financial incentive to encourage permanent reductions in electricity demand could be delivered via the Capacity Market. There are however some uncertainties so we are considering whether to pilot the proposed approach prior to implementation.

14. Government believes that non-financial options could also play a role in reducing electricity demand and potentially help augment the impact of a financial incentive. We will consider non-financial options further and report on these in the 2013 update to the Energy Efficiency Strategy.

15. Further detail on key themes that emerged from the consultation and reasons underpinning the Government's chosen route to deliver Electricity Demand Reduction are provided below.

Key themes and Government's response

16. There is significant potential for greater electrical efficiency in the UK - up to 32 terawatt hours or around 9% of total demand in 2030. Reducing the amount of electricity we use could also deliver significant benefits.

17. For example, a 9% reduction in overall demand could deliver, in 2030:

- savings of around £2.3 billion[3];
- cut emissions in the traded sector by 3.2 mega tonnes (equivalent to the amount produced from the electricity use of around 1.8 million households in a year); and
- save electricity equivalent to that generated by around four power stations in a year.

[2] NPV over the period 2017-2034 – see Impact Assessment for further details

[3] These are the net savings to society in 2030 expressed in 2012 terms, undiscounted.

18. Despite these benefits efficiency measures are often not taken up, even where they are cost effective. This is due to a range of market failures, including misaligned incentives, imperfect information, undervalued energy efficiency opportunities and embryonic markets.[4]

19. The Government's consultation published in November 2012 sought views on a range of options to unlock the untapped potential for greater efficiency in the use of electricity including the use of financial incentives as well as non-financial options such as better labelling or voluntary initiatives.

20. Overall, a majority of stakeholders were supportive of action to support electricity demand reduction. The importance of simplicity of any scheme was highlighted in many responses in the context of what was felt to be a complex policy landscape.

21. Stakeholders were generally supportive towards the principle of providing a financial incentive to support electricity demand reduction. Targeted incentives (i.e. incentives only open to certain sectors of the economy or specific technologies) received support in a significant number of responses, however, market wide approaches (incentives open to a range of sectors and technologies) were also well supported and many also argued that both approaches could work. Those in favour of market wide approaches felt this approach was the most open and inclusive option which could help to foster innovation and competition and capture deeper savings, although some concerns were raised in relation to the potential for complexity under this approach.

22. Those in favour of targeted incentives saw simplicity as the key advantage of this approach, which was felt to be easier to monitor and verify although some concerns were raised in relation to how additional any savings would be (i.e. whether it would just bring forward a purchase that would have happened anyway) as well as the potential for targeted incentives to distort competition.

23. Targeted incentives are generally more suitable where the potential for greater efficiency is largely concentrated in a particular sector or technology. Analysis indicates that the potential for greater efficiency is distributed across a number of areas and technologies rather than in discrete sectors or areas of the economy. In addition, as they are open to a range of technologies and sectors, market wide incentives also provide a greater degree of flexibility to adjust as the landscape for efficiency evolves and changes in the future. For these reasons Government believes that a market wide approach is the most suitable vehicle to deliver a financial incentive for electricity demand reduction.

24. In terms of financial incentives consulted on, overall, respondents were most positive towards the premium payment and scrappage scheme (around a fifth of respondents explicitly favoured these options in their responses). Those in favour of a premium payment felt it would drive innovation and competition and would capture deeper savings, whereas simplicity was seen as the key advantage of a scrappage scheme. There was most negativity towards a capacity market and supplier obligation (around a fifth of responses were explicitly negative about these options in their responses). Those who were negative towards the capacity market questioned how compatible it was with

[4] See impact assessment for further details.

delivering electricity demand reduction at all times, with some concerns over potential for complexity and what it could deliver. Those who were negative towards a supplier obligation in the non-domestic sector argued suppliers did not know businesses well enough to perform this role and that the sector is too diverse for a supplier obligation to work effectively.

25. International approaches show a supplier obligation can work, however, on balance it was considered that a supplier obligation in the non-domestic sector would not fit with the more bespoke nature of solutions that are often required in this sector. In addition, some consultation responses expressed concern that suppliers might not have the expertise to deliver savings in this sector and some were concerned over potential adverse impacts on competition. For these reasons a supplier obligation to deliver electricity demand reduction in the non-domestic sector has been ruled out.

26. The option of delivering electricity demand reduction via a premium payment, which received support in a number of consultation responses, is very similar in principle to the capacity market option in that it enables the auctioning of set amounts of electricity demand reduction which would be delivered by those who chose to participate. A premium payment however would not enable the same trade off against supply provided through the Capacity Market and would require the creation of a separate, additional delivery mechanism and supporting infrastructure. For these reasons the premium payment approach to deliver electricity demand reduction has also been ruled out.

27. The Capacity Market is the Government's preferred route to deliver a financial incentive for electricity demand reduction because:

    - it targets reductions at peak demand and so incentivises demand reduction at times when it is more valuable. This is because it costs more to supply electricity during peak periods and generation and transmission infrastructure has to be set up to meet periods of peak demand;

    - it enables Electricity Demand Reduction to be delivered where the price reflects the value it provides to the system. This is because, unlike with other delivery mechanisms, within a capacity market demand reduction can compete directly with supply;

    - it avoids the creation of a separate delivery mechanism for Electricity Demand Reduction, reducing deliverability risk; and

    - it enables Demand Side Response and Electricity Demand Reduction to be brought together in a single delivery vehicle enabling more effective, joined up delivery of both policies.

28. The approach of delivering permanent reductions in electricity demand via a Capacity Market has been shown to work elsewhere, as shown by international examples e.g. in the Forward Capacity Market in New England in the USA. There are a number of uncertainties about the Capacity Market expressed in some of the responses to the consultation. These uncertainties include:

- ensuring that any savings can be reliably monitored, verified and delivered within a capacity market and are additional to what would have happened anyway (although this challenge applies with any option to deliver electricity demand reduction);

- whether the level of incentive that would be generated within a Capacity Market would be sufficient to drive take up of EDR and provides value for money; and

- ensuring the auction process works effectively and is accessible to participants - the role of aggregators may be important in helping to develop an effective, functioning market in electricity efficiency.

29. In light of the above, Government is considering whether to test the proposed approach via a pilot. This could help to develop our knowledge and understanding of the potential benefits of a financial incentive, the market appetite for such an approach, and detailed design questions such as monitoring and verification, before proceeding to final decisions.

30. Responses to the consultation indicated that a majority of respondents supported non-financial options to reduce electricity demand with all of the different types of measures consulted on receiving some degree of support. Those in favour of non-financial options felt that they had a role to play often alongside a financial incentive. Government believes that non-financial options could play a role in reducing electricity demand and potentially help augment the impact of a financial incentive. Further work is needed to develop and assess the options consulted on. We will consider non-financial options further and report on these in the 2013 update to the Energy Efficiency Strategy.

31. In developing our approach to non-financial approaches we will take account of the need to integrate with and build on the opportunities presented by the introduction of energy efficiency audits for all large businesses by the end of 2015. By providing information about energy performance and enterprise-specific recommendations about energy savings, these will help tackle information barriers to the take-up of cost effective energy efficiency measures. The Government will consult on the introduction of energy audits this summer.

Summary

32. Government proposes to amend the Energy Bill such that a financial incentive to deliver permanent reductions in electricity demand, open to a range of sectors and technologies, could be delivered via the Capacity Market. The Government is considering whether to test the proposed approach via a pilot in order to gather evidence that will inform final decisions on an incentive.

33. Government believes that non-financial options could also play a role in reducing electricity demand and potentially help augment the impact of a financial incentive. We will consider non-financial options further and report on these in the 2013 update to the Energy Efficiency Strategy.

Questions and responses

Potential for electricity demand savings

Consultation Question		54 Responses
1.	**DECC would welcome further evidence and analysis to support and increase our understanding of the potential for cost-effective energy-efficiency measures, the abatement potential and the cost of abatement.**	

What respondents said

34. Around half of those who responded to the consultation answered this question. A wide range of evidence was submitted by respondents. This included data from projects undertaken within individual organisations, examples of energy efficiency schemes operating in the USA and Europe and a wide range of reports from think-tanks and energy advisory organisations.

35. One source of evidence that was mentioned in a number of responses was the evidence submitted to the Government regarding Climate Change Agreement reduction targets. It was also highlighted that Smart Meters could provide a good evidence base in the future, particularly facilitating a much more detailed understanding of energy use in homes and businesses.

Government Consideration

36. There is considerable uncertainty as to the exact level of potential for electricity demand reduction, but even under conservative assumptions it appears significant. Preliminary research into the total potential for EDR across the economy was conducted with McKinsey & Co in 2012. That research estimated the total potential for EDR was around 92TWh in 2030, after the impact of existing policy was accounted for. This analysis provided a high level estimate of the total potential, on the basis of a top down methodology. As the EDR project has moved on from defining the strategic case for intervention to designing the policy, DECC has narrowed the focus of the analysis.

37. Following the consultation, DECC conducted a systematic review of all the sectors to strengthen the evidence base underpinning the technical potential estimates. As part of this process a number of sectors were identified as being the most likely sources of demand reduction. These are:

- Non domestic building retrofit;
- Non domestic product and appliances;
- Domestic products and appliances; and
- Industrial processes.

38. Two sectors have been excluded from the analysis (new buildings and domestic retrofit) because most of their potential is likely to be captured by existing policies. This does not mean measures in these two sectors would not be eligible for support under an EDR financial incentive. There are a wide range of innovative approaches to delivering energy efficiency that could be eligible for support. The eligibility of different types of demand reduction project will be decided at a later stage in the policy development process (and may be done on a project by project basis by the relevant authority). For the purposes of conducting the analysis we have focused on the sectors which are likely to deliver the greatest proportion of the demand reduction.

39. In response to feedback given during the consultation, we have also sought to strengthen the evidence base by comparing the top-down analysis (undertaken with McKinsey & Co) to UK data sources. Taking a conservative approach, sector specific UK data sources have been used where they were judged to be more accurate. As a result, the estimate of potential has been revised down to 32 TWh. The evidence therefore suggests that even under conservative assumptions there remains considerable potential for cost effective electricity demand reduction.

Financial Incentives

Consultation Question		51 Responses
2.	**Do you have evidence on whether offering a financial incentive is likely to be an effective way of overcoming the barriers that prevent efficiency measures being taken up in non-domestic buildings, bearing in mind the policy measures that already drive energy efficiency in non-domestic buildings?**	

What respondents said

40. Just under half of respondents answered this question. A clear majority [36] of those who responded felt that a financial incentive would overcome some of the financial barriers that prevent efficiency measures being taken up. It was felt that any incentive which reduced payback periods for investments and improved the case for investment would result in more efficiency measures being realised. A significant number, however, thought an incentive would be insufficient to overcome all of the barriers by itself. Addressing information barriers alongside financial barriers was considered particularly important.

41. A number of respondents also argued that it would be difficult to judge the effectiveness of a new financial incentive while other new policies like the Green Deal are just beginning. They recommended allowing existing policies some more time to bed-in before introducing a new measure.

42. A minority of respondents opposed a financial incentive, stating it would risk distorting the market, that other measures could be more effective and less expensive and that the policy landscape is already too crowded.

Consultation Question	43 Responses
3.	**Do you have evidence on whether offering a financial incentive is likely to be an effective way of overcoming the barriers that prevent efficiency measures being taken up in industrial processes? Explain your point of view.**

What respondents said

43. Under half of respondents answered this question. A majority of those who responded [25] felt that a financial mechanism would be effective at addressing the barriers that prevent uptake of efficiency measures in the industrial sector. While many of those in favour felt that efficiency was already high in the mind of industrial energy users, many in this group stated that potential investments in efficiency measures still struggle to compete with other investment opportunities. Several of those who agreed, however, felt that a financial incentive on its own may be insufficient, and that additional measures such as improving performance management contracts, better information or system optimisation would be required.

44. Those that did not think a financial incentive would be effective argued that financial incentives already exist through high electricity prices and Climate Change Agreements and that regulation offers a better alternative. There was also some concern about how any financial incentive might be implemented, with several of the respondents keen that any new mechanism should sit within existing policies rather than adding further complexity to the policy landscape.

45. Several potential evidence sources were highlighted in responses, including the information businesses have provided for Climate Change Agreement target negotiations and reports from international sources like the World Bank.

Consultation Question	48 Responses
4.	**Should Government consider a product-specific financial incentive in the domestic sector in spite of the risks and limited potential (23% of domestic product untapped potential as set out in Chapter 2)? If so, how could we design an incentive that would drive better purchasing or usage, rather than early product replacement?**

What respondents said

46. Just under half of respondents answered this question. Around half of those who responded [25] felt there was scope for a targeted financial incentive (i.e. an incentive restricted to a particular technology or sector) for products in the domestic sector. Reasons cited in support included that financial incentives would influence purchasing decisions and, if targeted towards specific technologies, could help drive down production costs. A range of targeted incentives were mentioned by respondents including, most notably; scrappage schemes [5], tax incentives [5], and specific product support [5].

47. Views were mixed as to the preferred form of a targeted measure. For example, some felt that using Enhanced Capital Allowances would be best, while others felt an incentive would only work for individual products or that a tax-based approach should be taken.

48. Around a third of those who responded were against product specific incentives, arguing it will be difficult to deliver significant savings at good value for money, it would unfairly benefit only those that can afford to replace products and it could result in market distortions.

49. A number of respondents suggested ways to design an incentive that would drive better purchasing and usage rather than early product replacement including channelling incentives through Local Authorities to those most in need, setting strict product age limits for scrappage schemes and making payment conditional on monitored performance.

Consultation Question		47 Responses
5.	**Would a financial incentive be effective in driving efficient product choices in the non-domestic sector? What evidence is there of this and what are the differences, if any, to the case with domestic products?**	

What respondents said

50. Just under half of respondents answered this question. Around two thirds [30] of those who did respond felt a financial incentive could be effective at driving efficient product choices in the non-domestic sector. Respondents stressed the need for any scheme to have a degree of flexibility to allow the full spectrum of businesses to take part. Some also felt that whilst a targeted incentive could be effective, other options like market wide measures (i.e. an incentive available to a wide range of sectors or technologies) would be preferable or that financial incentives would only work if implemented alongside other things like stronger regulation. Among some respondents support was conditional on a sufficiently high level of incentive being given.

51. Around a third of respondents [14] who answered this question were against a financial incentive. Reasons cited by this group included that they felt: finance was not the principal barrier, targeted incentives may not be flexible enough for businesses, there could be potential to distort the products market, there is a risk that businesses might end up subsidising competitors' efficiency improvements and that targeted measures would result in a piecemeal approach when a more holistic approach is needed.

Consultation Question		47 Responses
6.	**If a targeted financial incentive for non-domestic buildings were available, which efficiency measures should be a priority for the scheme? What evidence is available to support your view?**	

What respondents said

52. Just under half of respondents answered this question. Those who responded identified a range of efficiency measures that they felt should receive priority support. These included specific technologies as well as activities like audits and prioritising technology which operates during peak times. A small number of case-studies were provided and existing data from Climate Change Agreements and Enhanced Capital Allowances schemes were suggested as further sources of evidence.

53. Examples of measures that respondents thought should be prioritised included lighting [15 times], lighting Controls [15 times], building energy management systems [12 times], heating, ventilation and air conditioning [9 times] and building fabric measures [8 times].

Consultation Question		43 Responses
7.	**Do you consider a targeted financial incentive an effective way of encouraging higher and additional efficiency in industrial processes? Which efficiency measures should be a priority for any scheme? What evidence is available to support your view?**	

What respondents said

54. Under half of respondents answered this question. Of those who responded over half [25] felt that a targeted financial incentive would be an effective way of encouraging efficiency in industrial processes. Reasons cited in support included that this would enable single large projects to deliver significant electricity reductions and that investments would likely be additional. Several of the responses recognised that while a targeted financial incentive could be effective it could also be complex due to the bespoke nature of different industries and the potential crossover with existing policy like Climate Change Agreements.

55. Around a quarter of those who answered this question [11] did not think a targeted financial incentive would be effective, stating the need to improve whole processes and optimise the efficiency of individual measures.

56. Respondents suggested a number of measures which they thought should be a priority for any scheme (noting the bespoke nature of many industrial processes) including: pumps [5], motors [4], compressors [3], variable speed drives [3], process controls [3], and Combined Heat and Power [3]. Some respondents provided evidence relating to measures installed at specific companies or installations.

Consultation Question		50 Responses
8.	**Should Government consider a targeted financial incentive to support the purchasing of higher energy-efficient products? How could the efficiency of such a scheme be maximised? Would a voucher or certificate scheme work? If not, what other options should we consider? Please make clear in your response whether you are referring to the domestic or non-domestic sector or both.**	

What respondents said

57. Slightly less than half of respondents answered this question. Just over half of those who responded [27] felt that Government should consider a targeted financial mechanism to support the purchase of efficient products. Many of those in favour [20] felt that a voucher or certificate scheme would work.

58. Suggestions to maximise the effectiveness of any scheme included ensuring that: the scheme is as simple as possible, costs to retailers are minimised, products are well

targeted (including age/ point in replacement cycle) and time-limiting the incentive to encourage uptake.

59. Some respondents suggested alternative ways of delivering a targeted incentive such as changing tax allowances for efficiency measures e.g. via Enhanced Capital Allowances, reducing VAT or using a scrappage scheme.

60. Just over a fifth of respondents who answered this question were opposed to a financial incentive to purchase efficient products [14]. Reasons included a preference for a market-wide approach [3], the potential for some sectors to benefit disproportionately at the expense of others, and the opinion that existing policies should be allowed to bed-in before additional measures are introduced.

Consultation Question		49 Responses
9.	**What restrictions, if any, should there be on which sectors and measures are eligible to participate in a market-wide scheme? Please explain.**	

What respondents said

61. Just under half of respondents addressed this question. Of those who responded, just under half were against placing any restrictions on which sectors or measures should be eligible to participate in a market-wide scheme (i.e. an incentive that is open to a range of sectors and technologies).

62. The remaining respondents suggested a variety of restrictions that could be placed on a market wide scheme. One restriction mentioned was that any technology or measure supported should be proven and additional [7]. Others felt that specific sectors should be excluded although there were different views as to which sectors this should be e.g. the domestic vs non-domestic sectors.

63. One issue that was raised in a number of responses was the need to consider how policy impacts on different people or businesses. A number of responses raised the unfairness of one business paying for another's new technology or of households paying for improvements within businesses.

Consultation Question		50 Responses
10.	**What are your views on the comparative merits and disadvantages of targeted financial incentive schemes and market-wide ones? Please explain your response.**	

What respondents said

64. Just under half of respondents answered this question. Among those who responded, opinion was evenly split between those that favoured a market wide mechanism (an incentive available to a wide range of sectors and technologies) [18] and those that favoured a targeted scheme (an incentive aimed at a particular sector or technology) [18]. The remaining respondents [10] expressed no preference or felt both approaches could work together.

65. Those in favour of market wide approaches cited a number of reasons, including that it would capture whole system efficiency improvements [12] and offer flexibility for participants to choose the measures that best suit them [9]. There was also a sense that this flexibility could allow schemes to be more cost effective and encourage the creation of new markets for aggregators and energy services companies. The main drawbacks of a market-wide approach were considered to be the potential for complexity [11] and worry that the measurement and verification of savings could be onerous [4].

66. Those in favour of targeted schemes felt they would be a simpler option [10] which would facilitate focus on the most needed measures [6] and require less onerous measurement and verification. Relatively few respondents commented on the drawbacks of targeted measures, but those that did were concerned that they don't allow whole system improvements to be made [5] and that they carry a risk of skewing product markets and stifling innovation.

Consultation Question		57 Responses
11.	**Should Government consider a market-wide financial incentive to support further electricity efficiency measures? Please explain your response.**	

What respondents said

67. Just over half of respondents answered this question. Of those who responded around two thirds [35] were in favour of a market-wide incentive and a third [18] were against.

68. The most common argument in favour of market wide schemes was that they would capture a wide range of efficiency measures and electricity consumers. Some felt that this would allow more complex and bespoke industrial users to access support to deliver efficiency savings, while others argued this would enable participants to make savings throughout their business.

69. Those who were against a market wide approach argued that the policy landscape is already too complex, and that the implementation of a new untested policy might lead to unnecessary market distortions and burden on businesses for potentially small gain.

70. Across all responses, the importance of simplicity of any scheme was highlighted. Respondents stated the importance of making sure any new policies are as easy to engage with as possible and a number suggested the existing policy landscape could be rationalised or simplified.

Consultation Question		59 Responses
12.	**What are the key elements of a financial incentive scheme to encourage participation? Including but not limited to payment level, length of payback period, who manages the scheme, whether the level of payment is known upfront or determined through the sale of a certificate. Please provide evidence to support your views and reference relevance to the different sectors as appropriate (domestic buildings and products, non-domestic buildings and products and industrial processes).**	

What respondents said

71. Just over half of respondents answered this question. The key elements of a financial incentive that were mentioned most frequently in the responses included:

- it should be simple to participate, receive payments, understand and report on etc;
- support should be consistent and predictable;
- it should focus on reducing payback periods (usually this was suggested to be less than around 3 years);
- payment should be available upfront;
- monitoring and verification should be reasonable, proportional or a simple as possible;
- any scheme should enable a holistic approach to reducing demand, not just individual products;
- all energy types should be incentivised, not just electricity;
- it should be delivered through existing policy;
- there should be consideration of how households or small businesses can take part;
- it should be operated by an independent or not-for-profit organisation; and
- it should not be conditional on purchasing your electricity from a particular supplier.

72. A number of respondents cited evidence such as academic research papers and examples from within individual organisations.

Consultation Question		31 Responses
13.	**Do you have any other views or evidence on the relevance of a financial mechanism not captured by the questions above?**	

What respondents said

73. Around a third of respondents answered this question. A range of views were expressed, in many cases reiterating preferences for targeted or market-wide approaches or highlighting the importance that any mechanism should be cost effective, relatively simple, and have proportionate measurement and verification requirements.

74. A number of respondents suggested that any scheme should be piloted. A small number of responses also called for grid operators and efficiency improvements to network infrastructure to be eligible for support.

75. Additional evidence cited by respondents generally focussed on examples of efficiency schemes being operated in Europe and the US.

Government Consideration (questions 2-13)

76. Government believes that a financial incentive could be effective in helping to overcome barriers to reducing electricity demand, this is supported by evidence from international case studies in the US and Europe and internal analysis. Both market wide and targeted approaches received support in responses to the consultation.

77. On balance the Government believes that a market wide incentive is the most suitable approach for delivering a financial incentive for electricity demand reduction. This is because the analysis indicates that the untapped potential for greater efficiency is distributed across a range of sectors and technologies and that a market wide incentive is easier to amend and adjust to take account of the evolution of the efficiency landscape in the future. Further detail on the reasons underpinning the Government's chosen mechanism to deliver electricity demand reduction is outlined on pages 4-7.

Non-financial mechanisms

Consultation Question		43 Responses
14.	**For businesses, what would be a useful form of information on the efficiency of the products and equipment you purchase, recognising how decisions are taken in your organisation? Would your organisation find it useful for running cost information to be included in product information? Please provide an explanation.**	

What respondents said

78. Less than half of respondents answered this question. A significant majority of those who responded [38] were in favour of providing additional energy efficiency information on product labels. This was seen to be a positive step towards enabling businesses and

individuals to make informed purchasing decisions. A number of respondents suggested that lifetime running-costs should include the money spent on disposal and maintenance, product lifespan, annual energy consumption and annual CO_2 emissions.

79. Respondents also highlighted a number of issues that would need to be addressed to ensure the success of any product labelling scheme. These included the impact of how a product is installed and used on its efficiency, the challenge of providing exact running cost information when this is dependent on energy prices and tariffs, and the risk of mislabelling. A number of respondents urged Government to give thought to whether additional product labelling could be achieved through the European Union and to consider the merits of making a scheme compulsory.

Consultation Question	42 Responses
15.	**Is there interest in a dedicated information source on industrial electricity efficiency opportunities?**

What respondents said

80. Less than half of respondents answered this question. Of those who responded a large majority [33] supported the provision of coordinated information on industrial electricity efficiency. Respondents highlighted the need to ensure that information is credible, reliable, impartial, relevant, timely and easy to access, and that the process for including information in a hub is transparent.

81. A minority of respondents expressed concern over whether a hub could provide useful information on often highly specific processes and equipment or overcome challenges outlined above such as ensuring information was impartial and relevant. Some respondents felt that the hub should be broadened to include information relevant to small businesses and the commercial sector and that it should cover all energy efficiency and not electricity. A small number of respondents were also concerned about market competition and whether companies would be willing to share information which may assist their competitors.

Consultation Question	29 Responses
16.	**What available sources of information could the Hub include that are not covered elsewhere? How could this information be sourced and validated?**

What respondents said

82. Just over a fifth of respondents answered this question. Of those who responded around a quarter highlighted the importance of utilising the knowledge and resources of specialists like the Carbon Trust, with some questioning whether a new hub would duplicate work already undertaken. Other respondents suggested that the hub should amalgamate existing resources, validating and analysing information already available and providing a credible single point of information. Other suggestions included that the hub could include material from trade associations, the Energy Technology List, energy audit data, product details and their lifetime running costs and details of relevant Government schemes to improve efficiency. Several responses also highlighted the value of including real-life case studies.

Consultation Question	32 Responses
17.	**Are there any other better ways of raising awareness in the industrial sector that the Government should consider? Please provide relevant evidence.**

What respondents said

83. Just over a fifth of respondents answered this question. Those who responded suggested a range of ways to raise awareness of electricity efficiency opportunities, including the promotion and extension of Carbon Trust initiatives, seminars for industry representatives and targeted information campaigns using real case studies to address concerns on upfront costs.

84. Respondents encouraged the Government to do more to promote existing schemes through, for example, increased engagement with major industrial forums and in the media. Other suggestions included using Local Enterprise Partnerships and to launch a targeted support programme that could be run by the Carbon Trust to help individual businesses to achieve their electricity efficiency potential.

Consultation Question	43 Responses
18.	**If organisations need more specific information about electricity use, can the Government intervene helpfully in this space – for example to encourage a higher take up of sub metering?**

What respondents said

85. Over a third of respondents answered this question. Of those who responded a significant majority [33] were in favour of Government intervention in this area. Respondents did, however, highlight the need to ensure that individuals are able to understand how to interpret the outputs of sub-meters and use these outputs to drive efficiencies.

86. Respondents also pointed to other types of information on electricity use which would be useful in reducing demand. These included the opportunities for new information that could be created through a mandatory roll-out of Display Energy Certificates and the integration of supply meters into electricity-intensive equipment.

87. A minority [4] raised doubts about the benefits of Government supporting the roll-out of sub-meters, pointing in particular to the prevalence of sub-meters in energy intensive industries and suggesting IT energy management systems are often more effective in enabling businesses to understand their electricity use than sub-meters.

Consultation Question	36 Responses
19.	**Would a Buyer's Commitment to purchase high-efficiency products be of interest to your business? What aspects make this approach appealing?**

What respondents said

88. Around a third of respondents answered this question. Of those who responded a majority [20] supported a Buyer's Commitment. The responses highlighted the potential for the scheme to tackle the "not front of mind" barrier to increasing energy efficiency if it became part of a business's procurement process. Respondents in this group suggested that this scheme would be most appealing to public-facing businesses where it could potentially add real value to the company.

89. A small number of responses [6] questioned the likely impact of a Buyer's Commitment given that other schemes such as Climate Change Agreements are already in place and highlighted the need to recognise process design and operation as well as product replacement.

90. Around a third of respondents [10] were opposed to a Buyer's Commitment. Respondents in this group questioned whether the reputational benefits would outweigh the costs and whether it would actually deliver any additional benefit to existing schemes. Some argued that Government should enhance mandatory product standards instead.

Consultation Question	31 Responses
20.	**What kind of recognition would be valuable to your organisation if considering engaging in a Buyer's Commitment? Would a recognised accreditation that you could display externally increase your interest in participating in a Buyer's Commitment?**

What respondents said

91. Around a third of respondents answered this question. Responses were mixed. While some were in favour, others had concerns about the number of accreditation schemes already in existence and cautioned against de-valuing those by further adding to the landscape. They also urged Government to learn the lessons from other similar schemes, such as Energy Performance Certificates, before launching a new scheme and also to consider the merits of having a single accreditation for companies employing "green" policies.

92. Where respondents felt that a Buyer's Commitment would be a useful incentive to reduce electricity demand, they supported accreditation. Respondents in this group stated that any accreditation system must be properly administered, not burdensome for businesses, Government-led and publically visible.

Consultation Question	49 Responses
21.	**To what extent do you think efficiency standards in buildings will deliver permanent reductions in electricity demand when implemented?**

What respondents said

93. Just under half of respondents answered this question. A majority [34] of those who responded felt that building efficiency standards could be effective in delivering reductions in electricity demand. Respondents mentioned the need for standards to be regularly updated in line with available technology, for building owners/occupiers to receive training to make the most of the efficiency opportunities, and to ensure that standards are maintained, monitored and enforced with penalties for non-compliance. The efficiency measures most likely to bring about permanent reduction were suggested to be those which would be least impacted by consumer behaviour and require little maintenance.

94. A number of respondents felt that standards need to be stricter and brought in earlier. Others drew attention to the "rebound effect" where savings from increased efficiency are offset by greater use of installed measures.

Consultation Question	37 Responses
22.	**Do you have relevant evidence on the effectiveness of standards in driving electricity demand reduction?**

What respondents said

95. Just over a third of respondents answered this question. A minority [11] either provided direct evidence or suggested where further evidence could be found in their responses. Examples include international evidence such as the National Australian Built Environment Rating System (NABERS), academic studies, information from building companies and organisations, as well as evidence based on their own experience.

Consultation Question	32 Responses
23.	**Do you agree with the Government's assessment against minimum efficiency standards for industrial processes? If not, please provide evidence of how mandatory minimum standards for industry could be set and why, and the impact they could be expected to have.**

What respondents said

96. Around a third of respondents answered this question. Of those who responded around two thirds [21] agreed with the Government's position against minimum efficiency standards for industrial processes. Reasons included that the bespoke nature of industrial processes would make efficiency standards difficult and costly to set and verify. A number of responses highlighted the role that Climate Change Agreements were already playing in this area and questioned whether standards would duplicate existing measures. Some respondents suggested that minimum standards on individual pieces of equipment, rather than full processes, would be more achievable.

97. A minority of those that responded [5] felt that the Government should explore the option of implementing minimum efficiency standards for industrial processes further, pointing to the large potential savings involved and the potential for standards to drive efficiency and that disaggregated metering may have a role to play.

Consultation Question		49 Responses
24.	**Should Government consider any other policy options aimed at overcoming the barriers that prevent the full take up of efficiency opportunities in:** • **Domestic or non-domestic buildings** • **Domestic or non-domestic product choices** • **Industrial processes?**	

What respondents said

98. Just under half of respondents answered this question. Suggestions of policy options that could overcome the barriers that prevent uptake of efficiency measures included Government mandating certain measures like automatic light switches in non-domestic buildings, a roll-out of Display Energy Certificates on all commercial buildings, ensuring audited environmental reporting for all businesses, requiring businesses to implement the efficiency measures identified by energy audits and more efficiency standards for products.

99. Some respondents felt that building efficiency standards should be higher, and that efficiency requirements should form part of the planning permission process. Other suggestions included developing codes of practice for energy service companies, tax incentives based on Energy Performance Certificate ratings, introducing block tariffs, greater provision of granular electricity consumption data to businesses, incentivising the generation of electricity using waste heat from industrial processes and encouraging the use of control systems to improve efficiency in non-domestic buildings.

100. Respondents also highlighted the opportunities attached to the roll-out of smart meters, stressing the value of providing advice and in-home displays alongside the meters. Concerns remained over tenant-landlord split incentives, and respondents encouraged further policy development to tackle this barrier.

101. A small number of respondents [6] warned against new initiatives, urging Government to thoroughly review existing policies before introducing further schemes and highlighting a risk of over-burdening UK businesses and adversely impacting their competitiveness with respect to overseas companies. These respondents suggested existing schemes should be streamlined and simplified, with emphasis given to raising awareness and providing training which could include the promotion of case studies. Respondents also urged Government to ensure policies in this area were aligned with policies on infrastructure and wider energy efficiency.

Government Consideration (questions 14-24)

102. Overall a majority of respondents were in favour of non-financial options to reduce electricity demand with all of the measures consulted on receiving some measure of support across responses.

103. Government believes that non-financial options could play a role in reducing electricity demand and potentially help augment the impact of a financial incentive. We will consider non-financial options further and report on these in the 2013 update to the Energy Efficiency Strategy.

104. In developing our approach to non-financial approaches we will take account of the need to integrate with and build on the opportunities presented by the introduction of energy efficiency audits for all large businesses by the end of 2015. These will help tackle information barriers to the take-up of cost effective energy efficiency measures by providing information about energy performance and making enterprise-specific recommendations about energy savings. The Government will consult on the introduction of energy audits this summer.

Monitoring, Verification and Additionality

Consultation Question		43 Responses
25.	**What further evidence exists on the accuracy of these approaches to M&V, and how this varies by types of efficiency intervention? What may be the basis for distinguishing which approaches are most relevant for which efficiency projects?**	

What respondents said

105. Just under half of respondents answered this question. Of those who responded a significant number [15] emphasised that any measurement and verification requirements should be in proportion to the scale of the project, strive to be as simple as possible and not be overly onerous.

106. There was a general sense that different methodologies would be appropriate for different types of project, with simpler deemed savings approaches (where savings of a measure are estimated upfront) generally felt to be better for smaller projects or targeted financial incentives and more complex ex-post approaches (where savings are monitored before and after a measure is installed) being necessary for larger, more complex projects. There was an equal level of support for both approaches. Some respondents highlighted the positive lessons that could be learnt from other Government schemes like Climate Change Agreements and the Carbon Reduction Commitment, particularly around the benefits of periodic auditing as a measurement and verification approach.

107. One clear theme was that respondents felt existing methodologies should be employed to measure and verify projects. Many responses suggested the International Performance Measurement and Verification Protocol (IPMVP) could be used. Government was also encouraged to be upfront about monitoring and verification requirements and the thresholds of proof that would be required to allow participants sufficient time to develop these processes at the start of any scheme.

Consultation Question	39 Responses
26.	**Question 26: For which electricity demand reduction measures and technologies do you believe new policy would most likely be additional? What evidence is available on this?**

What respondents said

108. Just over a third of respondents answered this question. Of those who responded many recognised that proving whether projects deliver savings which are additional to what would have happened anyway is likely to be challenging. Most of the suggestions for how to approach additionality focussed on the idea that measures which currently have a low take-up could be supported with a fairly high degree of certainty that they would be additional.

109. Some respondents felt that projects with payback periods over 3-5 years should be considered additional. Others focussed more on specific technologies. Technologies suggested to have the greatest potential to deliver additional savings included building energy management systems [7], lighting (LEDs) and lighting controls [6]. Other technologies mentioned were industrial motors and variable speed drives for pumps.

110. A small number of responses suggested that the evidence gathered through Climate Change Agreements should be employed to understand which technologies are most likely to be additional.

Consultation Question	27 Responses
27.	**Specifically, what evidence is available on the likely additionality of measures in industrial processes and non-domestic buildings?**

What respondents said

111. Around a quarter of respondents answered this question. For the most part, respondents highlighted points they made to question 26. An additional point made was that some complex and bespoke industrial processes would be difficult to test for additionality using a standard procedure and that any system used would have to be sufficiently flexible to account for this.

Consultation Question	39 Responses
28.	**In the context of a financial incentive scheme, would the flexibility and accuracy of taking a case-by-case approach to additionality justify the administrative burden that this would require? What evidence is available on this?**

What respondents said

112. Just over a third of respondents addressed this question. The majority [20] felt a case-by-case approach to additionality would be appropriate in some circumstances, particularly for larger industrial schemes. A significant proportion of these responses did not think a case-

by-case approach should apply to all projects, and expressed concerns about potentially high administrative burden and costs of this option in smaller, more numerous projects.

113. Those that were against a case-by-case approach had a variety of reasons, but most common of these was that it would be overly burdensome and would deter participation.

114. Sources of evidence cited in responses included lessons from previous supplier obligations, The Carbon Trust Interest Free Scheme and international examples.

Consultation Question		32 Responses
29.	**What, if any, is a practical approach to identifying the additionality of projects ex-ante (including measures such as those identified above)? Which types of measures and sectors are suitable for financial incentives and how should the acceptable projects be identified?**	

What respondents said

115. Just under a third of respondents answered this question. Practical ideas for identifying the additionality of projects under a deemed savings approach (where savings of a measure are estimated upfront) included:

- greater use of PC-based Energy Management Systems;
- utilising deemed savings where payments are planned to be up-front;
- utilise surveys (in a similar way to Green Deal Assessments) for smaller savings;
- using knowledge from existing schemes (e.g. the Carbon Emissions Reduction Target scheme, Community Energy Saving Programme, Standard Assessment Procedure, Reduced Data Standard Assessment Procedure and the Energy Technology List for Enhanced Capital Allowances;
- using indicative payback period information; and
- other academic or technical reports were also recommended.

116. A number of respondents pointed to previous answers to highlight where they felt the focus of a financial incentive should be. Several reiterated that Government should not limit a financial incentive to specific sectors or measures. Others restated the case for energy management systems, controls and lighting.

Consultation Question		30 Responses
30.	**Could coefficients be used to reward projects which are *partly* additional? How should such coefficients be calculated? If so, what are the best practice examples of this approach we should consider further?**	

What respondents said

117. Just under a third of respondents answered this question. Approximately half of those who responded [16] felt that coefficients could be used to reward projects that were partly additional. Those in favour felt that this would help in deliver a more holistic/whole building approach and be fairer by rewarding projects for their real additional benefit.

118. Most of those who agreed that coefficients could be used were, however, doubtful about whether they should be, citing the potential for additional complexity and cost that such a scheme would involve and expressing concern that it might deter projects on the fringes of being additional. Those that thought coefficients could not be used echoed these points in stronger terms.

119. Examples of existing schemes which use coefficients were given, including levy exemptions, Combined Heat and Power Quality Assurance (CHPQA) where Combined Heat and Power can be partially exempt and therefore only receives partial benefit, and Green Deal in-situ factors, which currently limit support for heating measures to 50% of their lab tested performance.

Government Consideration (questions 25-30)

120. The consultation responses showed a preference for ensuring any measurement and verification scheme should be in proportion to the scale of the project being supported. Both deemed savings (where savings are estimated and often apportioned upfront) and full monitoring approaches (e.g. before and after measurements of energy use) received support in the consultation responses.

121. Respondents also recognised that developing an approach which ensures that savings are additional to what would have happened anyway is likely to be challenging.

122. Government is looking at developing and testing the approach to monitoring and verification for a financial scheme for electricity demand reduction as part of a pilot. Government is mindful of the need to ensure that monitoring and verification requirements are proportionate and are as straightforward as possible. Key issues that need to be considered include how to ensure any regime delivers the level of confidence in savings that is required while remaining proportionate, the costs and impacts of any regime and how different approaches to monitoring, verification and additionality work in practice.

Annex A – List of Consultation respondents

1E
ABB consulting
AECB
AMDEA - the Association of Manufacturers of Domestic Appliances
ARM Holdings
Association for the Conservation of Energy (ACE)
BOC
British Ceramic Confederation
British Council of Shopping Centres (BCSC)
British Gas
British Glass
British Retail Consortium (BRC)
British Standards Institution (BSI)
BT
Calor Gas
Carillion
Chartered Institution of Building Services Engineers
Chemical Industries Association (CIA)
Cleveland Potash
COFELY
Combined Heat & Power Association (CHPA)
Confederation of British Industry (CBI)
Consumer Focus
Cristal
Danlers Limited
EDF
EEF
Electrical Contractors Association
ENER-G Combined Power Limited
Energy Action Scotland
Energy Efficiency Verification Specialists (EEVS)
Energy Intensive Users Group (EIUG)
Energy Management Alliance (EMA)
University of Warwick
Energy Services &Technology Association (ESTA)
Energy UK
EON
Food and Drink Federation
GAMBICA
Green Alliance
Green Building Council (GBC)
Hampshire County Council
Haven Power Ltd
Hilson Moran
Honeywell
IVEES & TEAM (Energy Auditing Agency Ltd)
Institution of Engineering and Technology
John Lewis
John Muir Trust
Johnson Controls (JCI)
Kent County Council LASER Energy Buying Group
Kingfisher
Lighting Industry Association Ltd
Low Carbon Buildings, Sustain
Major Energy Users Council (MEUC)
Matrix Control Solutions Limited
Micropower Council
Mineral Products Association (MPA)
Motor Driven Systems (MDS)
National Energy Action (NEA)
National Grid
Newcastle City Council
Northern Powergrid
OFGEM
OPOWER
Optimal Monitoring
Opus Energy
Passivsystems
Philips Electronics Lighting Division
Policy Exchange
PowerPerfector
RBS
Renewable Energy Systems Limited
RenewableUK, the Renewable Energy Association (REA) and Scottish Renewables
Retail Energy Forum (REF)
Rockwool
RWE Npower plc

Saint-Gobain Delegation UK
Scottish and Southern Energy (SSE)
Scottish Water
Silver Spring Networks UK and Ireland
Smartest Energy
SRC Global
Sustainability First
Swanbarton Limited
TATA
Thames Water
The British Electro-technical and Allied Manufacturers Association (BEAMA)
The Utilities Exchange Limited
UCL Energy Institute
UKERC (UK Energy Research Centre)
Vale Europe Ltd
Verbatim Limited
Verco
Vita Energia Solutions
Waste Watch UK
Wood Panel Industries Federation
WWF
Yorkshire Water

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