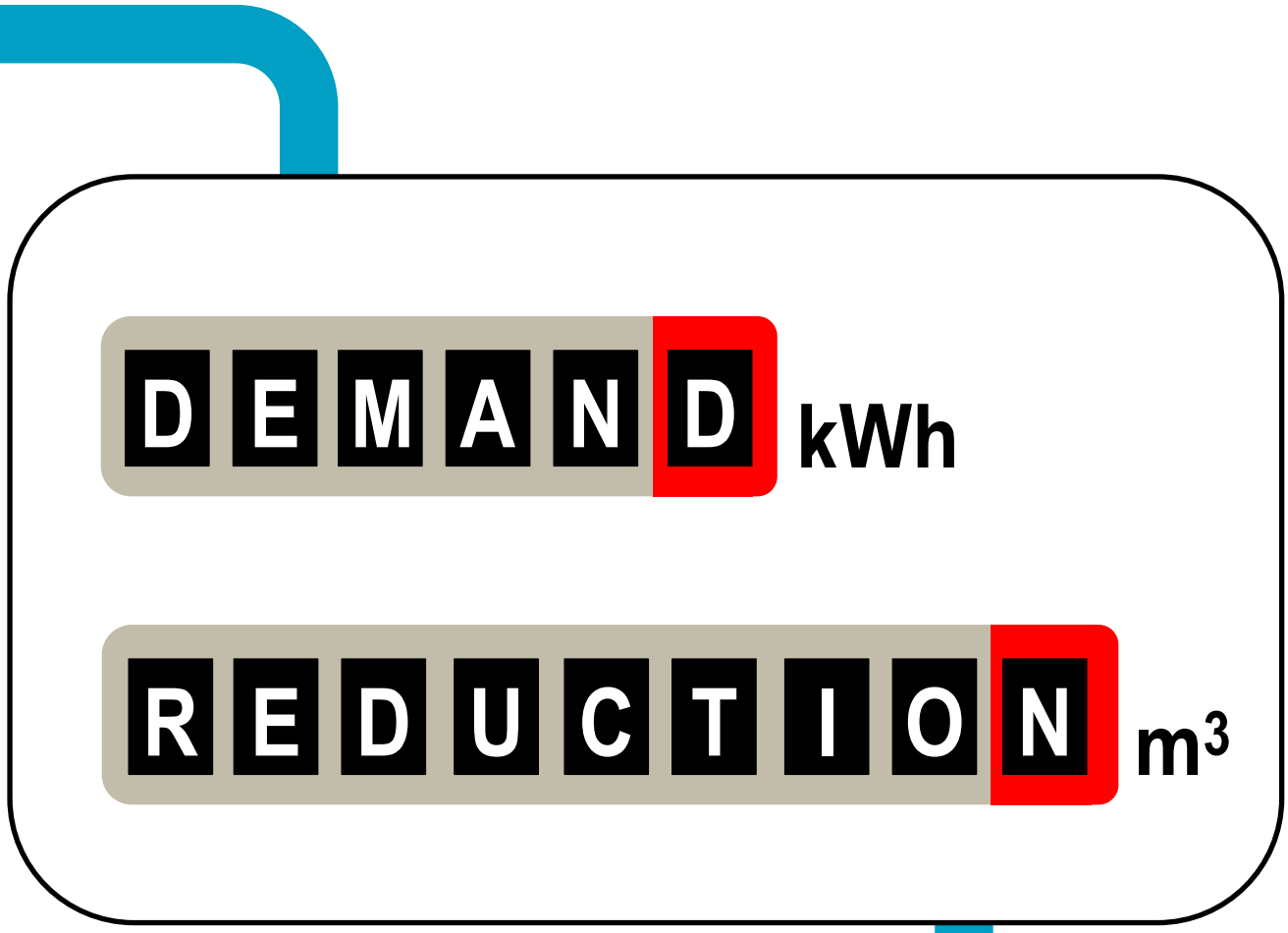
carbon Connect



Accomplishing the Energy Efficiency Mission

A position paper by Carbon Connect

For more information about this paper or Carbon Connect, please visit our website:
www.policyconnect.org.uk/cc

Powered by:

"There is no silver bullet to achieve lasting energy efficiency. Our Strategy provides a framework to guide continued work in promoting opportunities and persisting in eradicating the barriers to energy efficiency, whether misaligned incentives or information failures."

David Purdy – Head of Energy Efficiency Deployment Office, Department of Energy and Climate Change

INTRODUCTION

Carbon Connect Roundtable

In July 2013, Carbon Connect held a roundtable to discuss the Government's Energy Efficiency Mission. The discussion was chaired by Dr Alan Whitehead MP and began with introductory comments from the Department of Energy and Climate Change (DECC), the UK Energy Research Centre (UKERC) and Siemens.

This position paper is based upon those discussions and sets out a brief policy overview followed by our nine recommendations. The views expressed here are those of Carbon Connect and do not necessarily represent the views of its individual members or organisations that took part in the roundtable.

Carbon Connect is an independent, not-for-profit and politically neutral forum that facilitates discussion and debate between business, government and parliament to bring about a low carbon transformation underpinned by sustainable energy. It provides a varied programme of parliamentary events and policy research. As well as benefitting from independent analysis, members engage in a lively dialogue with government, parliament and other leading businesses. Our members are committed advocates of low carbon enterprise and ensuring that the UK is at the forefront of the transition to a low carbon and resource efficient world.

The following organisations were represented at the roundtable: Arup; Association for the Conservation of Energy; BAM Nuttall; Carillion; Costain; Department of Energy and Climate Change; Dong Energy; National Association of Professional Inspectors and Testers; Power Perfector; Royal Bank of Scotland; Sony Computer Entertainment Europe; Shanks; Siemens; Tata Steel; UK Energy Research Centre.

POLICY OVERVIEW

1. The Energy Efficiency Mission

At the end of 2012, the Government set out its Energy Efficiency Mission, which was then reiterated by the Prime Minister in a speech made at the launch of the Mission in February 2013.

The Energy Efficiency Mission

The Coalition Government has a mission to seize the energy efficiency opportunity, accelerating the deployment of twenty-first century energy saving measures through:

- connecting energy efficiency knowledge and technologies to finance seeking strong returns;
- supporting energy efficiency innovation;
- harnessing the power of improved energy use information, driving its availability and disclosure; and
- encouraging collective action to act on this new and better information.

1.1 The Prize

The Energy Efficiency Strategy, published in November 2012 and to be updated later in 2013, sets out the opportunity of saving up to 196 terawatt-hours of energy in 2020, equivalent to 11 per cent of business as usual energy consumption. Despite the UK energy efficiency sector already accounting for 136,000 jobs and £17.6 billion of sales in 2010/11, there is scope for significant growth of at least five per cent per annum to 2015/16 and further growth beyond. As well as providing an economic boost to the UK and helping to meet energy security objectives cost effectively, energy efficiency savings are projected to account for around a third of carbon reductions in the decade from 2020 to 2030.

> *"The Energy and Climate Change Select Committee has taken a great interest in the whole question of demand side reduction and energy efficiency. Demand side reduction has featured increasingly in the Energy Bill as it has progressed through Parliament."*
> **Dr Alan Whitehead MP**

1.2 The Long Game

The scale of the opportunity can give a misleading representation of how easily it is grasped. The Government's Strategy clearly sets out the diversity and complexity of barriers and makes good progress in recognising the need for a long-term and persistent policy effort, as well as the need for a robust and detailed evidence base upon which to act.

> *"I liked the quote from Stephen Chu [the US Secretary of Energy] saying that 'energy efficiency is not just low-hanging fruit; it is fruit that is lying on the ground'. But I was tempted to think that someone had glued that fruit to the ground."*
> **Professor Jim Watson, UKERC**

Four overarching barriers and market failures that lead to energy efficiency being undervalued, were identified in the Strategy:

1. **Embryonic Markets** – although markets exist, they are underdeveloped in the UK compared to other countries such as the US. The scarcity of both supplier and customer expertise, and ultimately demand, constrains the market for financial products to support energy efficiency investments which means that transaction costs are often high.

2. **Information availability and assurance** – information needs to be clear and specific and underpinned by a standardised monitoring and verification process that will instil trust in that information amongst decision-makers and investors. The absence of this information and assurance regime means that energy efficiency investments are not prioritised.

3. **Misaligned financial incentives** – this is particularly problematic in the commercial sector where contractual arrangements between landlords and tenants, or for facilities management, can inhibit investment. For many users, energy accounts for a small and easily ignored proportion of their cost base, but in aggregate the opportunity for reducing strain on the energy system is significant.

4. **Behavioural barriers** - Energy efficiency changes can involve significant hassle costs, which increases the costs of the investment. For example, disruption caused by building works or disruption to production lines. Energy efficiency improvements may not be seen as strategic for a company and therefore not prioritised.

2. Electricity Demand Reduction

Also in November 2012, the Department of Energy and Climate Change published a consultation on the potential to bring about permanent reductions in electricity demand. The Government responded to submissions in May 2013, making the following key points:

- There is potential to reduce electricity demand by 32 terawatt-hours in 2030 (around nine per cent of total demand in 2030). This could save £2.3 billion and 3.2 mega tonnes of traded emissions.

- A market-wide financial incentive is preferred by the Government because opportunities for permanent demand reductions are spread across many sectors and technologies. It is also argued that this will drive greater innovation and competition in a more open and inclusive marketplace.

- Respondents favoured a premium payment and scrappage scheme approach to financial incentives however the Government has chosen to pursue a capacity market approach. A capacity market model has been favoured because it focuses on peak demand, it competes directly with supply-side measures, it avoids the need for a separate delivery mechanism and it allows for one policy mechanism to address demand side response as well as permanent demand reduction.

- Challenges of a capacity market model include:
    - Ensuring that supported permanent demand reductions are additional;
    - Monitoring and verifying delivery of permanent demand reductions;
    - Ensuring that the level of support is sufficient to seize the full scale of the opportunity, whilst delivering value for money; and
    - Ensuring that the auction process is effective, and in particular that market failures do not lead to suboptimal outcomes especially in terms of value for money.

The Department of Energy and Climate Change is in the process of considering how a capacity market might work and is planning a pilot capacity auction for demand side measures to test design ideas.

3. Non-Financial Incentives

Non-financial incentives were also consulted upon in the Electricity Demand Reduction consultation and also apply to wider energy efficiency policies. Further work is needed to develop and assess options and this work is also on-going. The Government will report on this work in the updated Energy Efficiency Strategy expected by the end of 2013.

One such non-financial intervention is the introduction of energy audits. The EU Energy Efficiency Directive places a requirement on member states to introduce energy audits for large companies by the end of 2015. The Government will consult upon this over the summer.

Other work that the Government is undertaking in this area includes a product labelling trial of white goods with the John Lewis Partnership. The aim of this work is to gather

evidence through a behavioural trial about whether providing information on lifetime electricity running costs influences consumer purchases.

4. Decarbonisation Roadmaps

The efficiency potential and the economics of energy use vary across industrial sectors. Recognising this, the Department of Energy and Climate Change and the Department for Business, Innovation and Skills, in partnership with industry and Devolved Administrations, have undertaken a two-year project to develop roadmaps for key UK heat intensive industrial sectors, focusing on the sectors that represent the greatest carbon emissions and use the greatest amount of heat. This was outlined in the 2013 update to the Heat Strategy.

The project will have two phases:

- developing a shared evidence base, and on this basis, developing low carbon pathways/scenarios for each sector to explore and raise awareness about the low carbon technologies and options; and
- agreeing on the steps needed to achieve the emissions reduction, highlighting actions to be taken by industry, Government and others.

The aim will be to ensure that academic, industrial, commercial and economic expertise are combined through broad engagement to make the pathways as credible and comprehensive as possible.

RECOMMENDATIONS

Electricity Market Reform

1. We welcome the Government's intention to run pilots testing support for demand-side measures under Electricity Market Reform, following amendments made to the Energy Bill. Particular challenges that should be addressed in the pilots include: measuring additionality; driving genuinely permanent demand reductions; demonstrating new market relationships; showing how permanent demand reduction and demand side response might interact in a market; and testing to what extent a cap on capacity payments for demand-side measures will hold back development of energy efficiency markets.

> *"Energy efficiency is potentially quicker and much cheaper than supply side investment in meeting policy goals, but it is not a replacement for it, it is a complement."*
> **Prof Jim Watson, UKERC**

Products Policy and Labelling

2. Products policy is predicted to play a very significant role in meeting energy efficiency and affordability objectives to 2020, saving households an average of £158 per year. DECC should work closely with other government departments responsible for aspects of products policy to monitor and evaluate whether projected savings are being realised and whether additional action at a National or European level is needed. The Government should also consider whether the increasing importance of product energy efficiency warrants DECC taking lead responsibility for the products policy brief.

3. There is a concern that the existing EU energy efficiency product labelling standard (A+++ to G) is less effective than providing standardised cost information for typical product usage. We welcome the Government's product labelling trial with the John Lewis Partnership, firstly for addressing an important barrier to greater product energy efficiency and secondly for demonstrating a pragmatic approach to evidence-based policy making.

4. The provision of standardised information on the lifecycle energy costs of products would be as welcome in industrial and commercial settings as it is in domestic settings. The Government should expand the scope of its labelling standards work to priority products in non-domestic sectors.

Consumer Attitudes

5. Positive consumer attitudes towards energy efficiency are critical if market solutions to energy efficiency barriers are to be effective. The Government should seek to shape more positive attitudes through stronger public sector leadership and communication.

Energy Efficiency Audits

6. Introducing energy efficiency audits for large companies is a huge opportunity to tackle barriers relating to the availability, usefulness and trustworthiness of information. Following the requirements of the EU Energy Efficiency Directive, the Government should strive to implement a robust audit regime and consult this summer upon how the costs of audits should be met, what can be done to avoid duplication across policies and what can be learned from existing practices and standards.

> *"Energy audits in the UK have not historically been robust enough. Implementing requirements for energy audits under the EU Energy Efficiency Directive is a great opportunity to elevate auditing standards."*
> **Steve Barker, Siemens**

In-Use Factors

7. Substantial mistrust has arisen from the over-selling of energy efficiency products. Work between the Government and industry to standardise, reduce and better communicate in-use factors is needed to build more positive attitudes towards energy efficiency amongst consumers.

> *"We applaud efforts in industrial and commercial sectors to establish voluntary commitments on energy efficiency."*
> **David Purdy, DECC**

Voluntary Commitments

8. Encouraging voluntary commitments from specific sectors to improve energy efficiency could be an effective way of stimulating tailored approaches to overcoming barriers and action from sectors where energy is a low proportion of costs. They should be seen as a complement to, not a substitute for, regulation and incentives. Government should enter into a dialogue with specific sectors to consider the potential for voluntary energy efficiency commitments and reach a mutual understanding as to whether there is a role for Government in facilitating these.

Decarbonisation Roadmaps

9. We support DECC and BIS's work with industrial sectors on sectoral decarbonisation roadmaps, arising from the Heat Strategy. These projects should consider both the heat *and* electricity requirements of particular sectors and could be an appropriate vehicle for exploring voluntary energy efficiency commitments (see point 8).