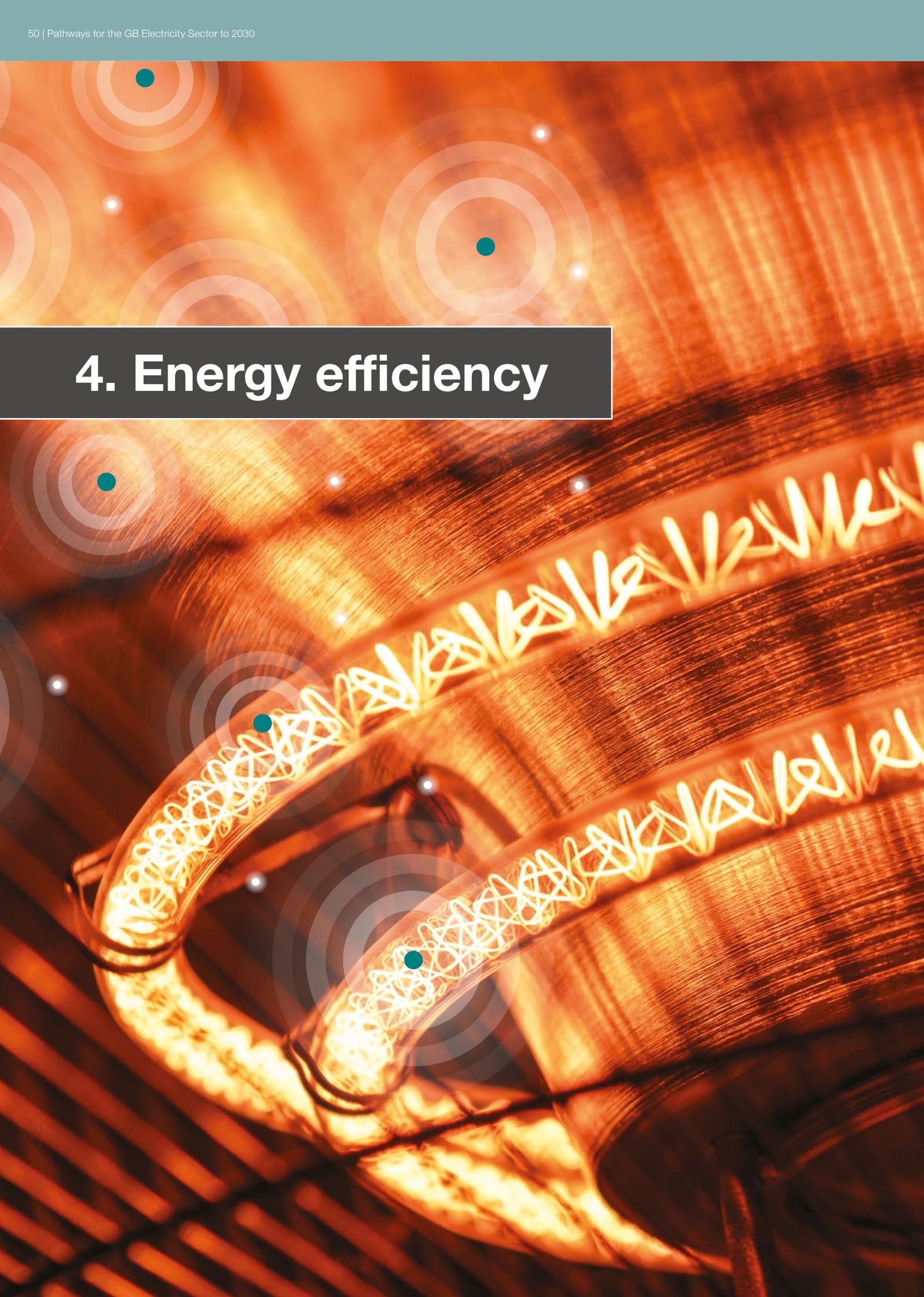


4. Energy efficiency



SUMMARY

‘This is the decade of energy efficiency’

As part of a whole systems approach to minimising costs to consumers, it is important to look at energy efficiency and reducing energy demand. It is essential that cost effective energy efficiency is delivered in order that maximum benefit is reached from low carbon heat.

Many interviewees argued for a renewed focus on energy efficiency. A number of companies pointed to low cost opportunities, spread across the industrial, commercial and residential sectors. Views differed on the best way to secure these improvements. Some argued that the obligation to deliver energy efficiency measures should not sit with suppliers, i.e. the Energy Companies Obligation (ECO) as this is a regressive form of funding.

Several respondents believed both fiscal and regulatory levers should be used to incentivise uptake of energy efficiency measures. Energy UK has done separate work on energy efficiency, in particular the able-to-pay market, and is supportive of measures such as stamp duty rebates supported by a national Government-led communications campaign. Many respondents believed long lead time regulation should be employed going forward, i.e. implementing building and product efficiency standards and allowing the market to deliver in the most efficient manner. Respondents compared this to the use of efficiency standards for boilers and vehicles, and believed similar standards should be applied for both domestic (new build and retrofit) and industrial / commercial building stock.

All respondents argued for greater certainty over the policy framework for energy efficiency going forward, given the low penetration of the Green Deal, the end of funding for the Green Deal Finance Company and the fact that the ECO framework is only currently set out to March 2017. (Government has subsequently announced ECO will be replaced with a more cost effective scheme after this period.) Some argued that, if financial resources are constrained going forward, then the remaining budgets should be targeted on the fuel poor.

Energy UK welcomes the opportunity to work with government in developing a new framework for energy efficiency and to ensure it is as cost-effective as possible.

4.1 Interview responses

Many interviewees believed policy measures to date for energy efficiency¹⁹ had not been effective and there was widespread agreement the next decade must usher in a renewed focus on improving energy efficiency. A number of interviewees believed there was significant potential for low-cost abatement opportunities across the residential and industrial and commercial (I&C) sectors which should be realised to achieve decarbonisation goals.

Interviewees made statements such as:

“The next decade is all about energy efficiency.”

“Momentum has been lost on energy efficiency.”

“The UK has not got energy efficiency right to date and this needs to be corrected.”

“The responsibility for energy efficiency was given to the wrong market players.”

“There is significant scope to achieve greater savings through energy efficiency.”

Many interviewees agreed a clear long-term framework for energy efficiency was required, in particular given the end of the Green Deal Finance Company and that ECO ends in 2017. Delivering energy efficiency measures within the right framework would mitigate increasing costs to consumers from costs of generation and a precursor to effective deployment of low-carbon heat. Views differed on the best framework to deliver energy efficiency.

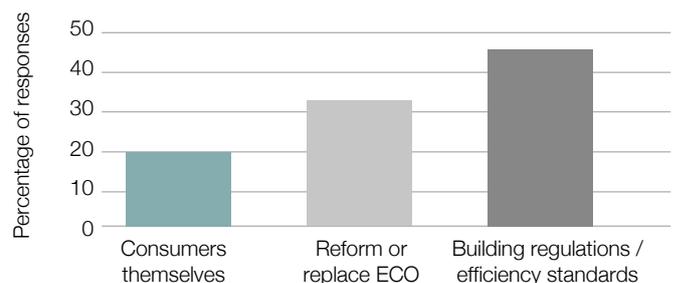
In terms of residential energy efficiency, a number of respondents argued the obligation to deliver energy efficiency retrofitting should not sit with suppliers, i.e. via the Energy Companies Obligation (ECO), as this was a housing sector issue. Others believed the ECO framework had delivered consumer benefits but were sceptical whether it was the most efficient means of delivering the required investment. Government has subsequently announcement in the Autumn Statement that ECO will be replaced with a ‘new cheaper energy supplier obligation’.

Many interviewees mentioned the importance of building regulations and energy efficiency standards. They argued ‘long-lead time’ regulation would help to create a market for energy efficiency, in both the residential and I&C sector and for new-builds and retrofits. Some interviewees argued that, by removing regulations for new-builds, GB was ‘locking-in’ future fuel poverty in favour of short-term cost savings. Interviewees quoted the examples of gas boilers standards and vehicle emissions regulations, which had made a significant contribution to the development of those markets.

Many interviewees agreed if financial resources were constrained, funding (whether from levies or taxation) should be targeted towards customers most in need, and different measures may be required for the able-to-pay market.

Many believed a top-down approach through obligations on suppliers had tended to lead to the supply chain over-relying on subsidies rather than developing innovative ways to promote measures to consumers as well as fostering an expectation on the part of customers that energy efficiency should be provided free of charge. This has undermined the value of energy efficiency to the public and resulted in delivery being constrained to measures funded through ECO and other subsidised schemes. Instead, the able to pay market needs to become sustainable and self-financing, especially with the move to prioritise fuel poor households in the companies obligation. In light of this renewed priority, it is important to consider the positive impacts better data matching would have in achieving this objective and meeting the 2030 target of alleviating fuel poverty.

Figure 8: How should energy efficiency be delivered?



¹⁹ While the report focusses on the pathways for the electricity sector, this section describes energy efficiency in terms of gas-use for space heating and its impact on the electricity sector.

4.2 Analysis

As part of a whole systems approach to minimising costs to consumers, it is important to look at energy efficiency and reducing energy demand.

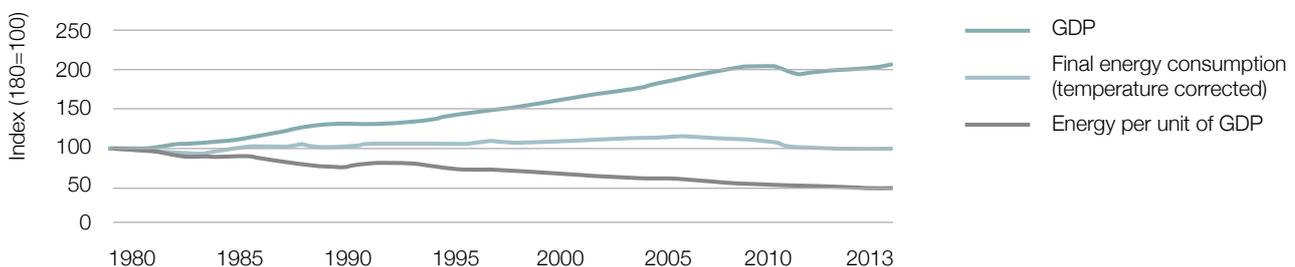
4.2.1 Energy intensity

Energy intensity in the UK has fallen steadily since the 1980s but has been relatively flat since 2010 (see Figure 9). However, the prevailing, relatively flat, energy intensity may be caused by the currently sustained period of reduced growth, and therefore many interviewees argued a ‘renewed focus’ was therefore required to ensure a maintained flat or even falling energy intensity going forward. In order to achieve this, many commented that the next decade should be ‘all about energy efficiency’.

Key drivers for energy efficiency are building standards, energy efficient appliances and long lead-time regulation, which are critical for both new builds and retrofiting. DECC’s latest energy efficiency statistics show modest improvement in household energy efficiency from 2000 to 2012 and a significant gap between new homes and the average for all homes. While new homes were given an SAP rating²⁰ of 81 in 2013, the latest data for all homes shows an SAP rating of 59 in 2012 (see Figure 10).

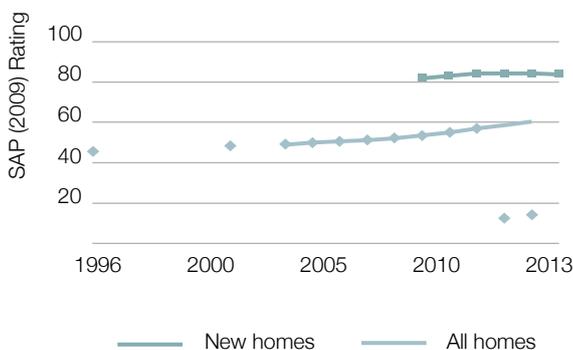
Similarly, slow progress is evident in the commercial sector. Figure 11 shows the evolution of Energy Performance Certificate (EPC) ratings in the non-domestic sector. There has been a slight shift away from F and G rated properties, and a marginal increase in the proportion of C and above

Figure 9: UK energy intensity (consumption per unit GDP, real)



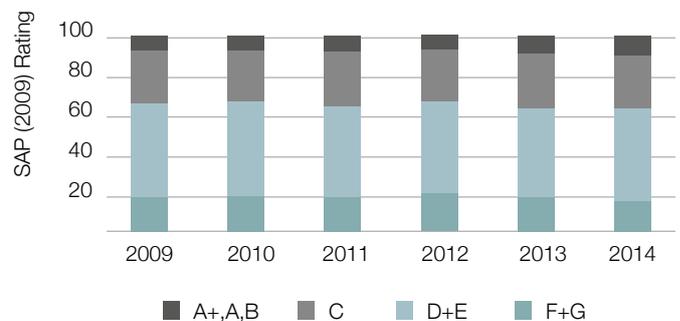
Source: DECC (2015), Energy Efficiency Statistical Summary, January 2015

Figure 10: Energy efficiency rating of homes in England operties



Source: DECC (2015), Energy Efficiency Statistical Summary, January 2015

Figure 11: Proportion of non-domestic EPCs per year by energy efficiency rating (England and Wales)



Source: DECC (2015), Energy Efficiency Statistical Summary, January 2015

²⁰ A SAP rating or Standard Assessment Procedure is the official, Government-approved system for assessing the energy rating for a new home. The SAP rating gives a figure between 1 and over a 100. A rating of a 100 represents zero energy cost and anything above would mean the home is exporting surplus energy on average.

4. Energy efficiency (continued)

rated properties, but the overall mix in 2014 is similar to that observed in 2009, indicating a failure in policy to date.

4.2.2 Green Deal and ECO

Many interviewees mentioned the lack of up-take for Green Deal measures and stressed the importance of a renewed approach to tackling the energy efficiency retrofit market. Some interviewees noted policy interventions for energy efficiency measures are likely to be necessary as consumers do not respond effectively to current price signals on their own.

The Green Deal, which was launched in 2013, was the previous Government’s key policy measure for tackling the energy efficiency retrofitting in the able-to-pay market. Since its launch, less than 20,000 measures have been installed (see Figure 12) and Government²¹ has announced an end of funding to the Green Deal Finance Company as a result of “low take-up and concerns about industry standards” for building insulation.

ECO was launched in 2013 alongside the Green Deal to support energy efficiency and reduce carbon emissions from buildings. ECO funding focuses on retrofitting measures for customers most in need and for those living in hard to heat

Please change to “Interviewees made statements such as:

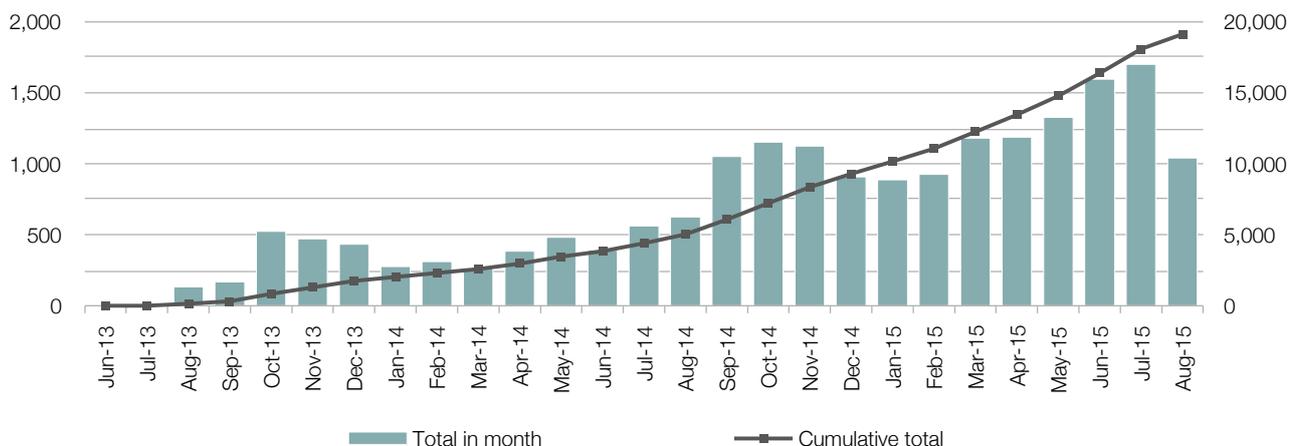
“There is a lot to do on energy efficiency, but it should be taken out of the hands of suppliers.”

“ECO is not the most effective solution as it is an energy sector measure to solve a housing sector failure.”

“Some kind of energy efficiency fund may be a possible alternative to ECO.”

homes. Many interviewees acknowledged the benefits that had been delivered to date by ECO. The scheme has been extended by the Government to March 2017, and Government recently announced in the Autumn Statement that it would be replaced with a ‘new cheaper energy supplier obligation’.

Figure 12: Number of measures installed using Green Deal in unique properties



Source: DECC (2015), Green Deal and Energy Companies Obligation (ECO): headline statistics (September 2015)

²¹ Note, since interviews were carried out, the total number of measures installed using GD finance now totals 20,347 as of end October 2015 [Source: Domestic Green Deal and Energy Company Obligation in Great Britain, Headline report, November 2016, DECC]

4.2.3 Emerging technologies that contribute to energy efficiency

While energy efficiency measures to date have predominantly been driven by policy and regulation, emerging technologies also provide substantial scope for continued deployment. One example is smart meters which allows consumption data to be measured in detail raising awareness for the consumer to reduce and optimise their consumption. Other technologies available for wide-scale deployment include heat storage and air or ground source heat pumps.

This is discussed in more detail in the Decentralised Energy section of this report which highlights the ability for a more localised energy systems to contribute to energy efficiency. This empowers the consumer to take control over its energy use and also encourages energy companies to offer these technologies and services. The shift towards more proactive consumers will also create more uncertainty around long-term future demand projections (discussed further in chapter 7).

4.2.4 A new policy framework

There was widespread agreement among respondents that new policy frameworks were required to unlock the benefits of energy efficiency, both in the domestic and commercial/ industrial sectors, and that specific measures should continue to cater to those in fuel poverty.

A key challenge for investment in domestic energy efficiency is that time horizons for return on investment is longer than that required by a typical household (if indeed generating a return at all), and similar problems exist for building and transport owners planning to invest in energy efficiency. These issues are exacerbated by the temporal nature of energy efficiency policies, e.g. ECO lasts only until March 2017.

Interviewees were strongly aligned on the need to focus efforts on tackling fuel poverty. Several respondents argued if funding was scarce, support should be targeted towards this segment, with separate arrangements for the able-to-pay market. Several respondents argued ECO was not the most cost effective means of meeting energy efficiency challenges for the fuel poor, though some respondents noted ECO had delivered consumer benefits. Many respondents argued placing the obligation with energy supply companies was suboptimal, though some argued the cost falling onto suppliers was the most practical solution.

Government announced in the Autumn Statement that ECO would be replaced with a 'new cheaper domestic energy efficiency supplier obligation' from April 2017, running for five years. Government estimates the new scheme will result in the upgrade of 200,000 homes per year, with savings of up to £300 on annual energy bills, therefore tackling 'the root cause of fuel poverty'. Energy UK welcomes the opportunity to work with Government in developing a new framework for energy efficiency and to ensure it is as cost-effective as possible.

For the able-to-pay market, many respondents believed Government needed to introduce new fiscal and regulatory levers to incentivise uptake of energy efficiency measures. Energy UK has undertaken analysis on the able-to-pay market, and is supportive of measures such as stamp duty rebates supported by a national Government-led national communications plan. This was largely reflected in interview responses. Many respondents also believed long lead time regulation should be employed going forward, i.e. implementing minimum efficiency standards for buildings and products and allowing the market to deliver in the most efficient manner. Respondents compared this to the use of efficiency standards for boilers and vehicles, and believed similar standards should be applied for both domestic (new build and retrofit) and industrial/commercial building stock.