

## Delivering Energy Efficiency to the Residential Sector: The case for an accelerated national energy efficiency scheme

Briefing note<sup>1</sup> April 2009

### Summary

- Research indicates that for every £1m invested in energy efficiency 8–14 person years of direct employment are created. Indirect employment effects contribute a further 9–40 person years because lowered fuel bills mean money can be spent on other goods and services that are more labour intensive<sup>2</sup>.
- A rapid National Energy Efficiency Programme should therefore be the centrepiece to the UK's green fiscal stimulus and 'smart' recovery plans. This could be achieved by bringing forward the start date of proposals in the Heat and Energy Saving Strategy to 2011 – from current 2013 – and increasing the ambition of this programme by aiming to retrofit all UK residential housing stock to B or C standards by 2021. This increase in ambition and pace would make the programme more attractive to private investors and more visible to the householder.
- Though the economic and climate change benefits are high, delivering such a programme will be challenging. Residential energy efficiency is the most complex climate intervention to deliver because the market failures are many and transaction costs high. Current and proposed policy designs are not sophisticated or robust enough to deliver this investment at scale. Substantive changes to regulation and financing approaches will therefore be required.
- We propose here two alternative approaches to funding and delivering the scheme. A top-down approach delivered by contracted consortia and fully funded by Government, and a bottom up commercially driven approach where householders pay for the scheme, facilitated by Government or Government-backed loans. Both approaches would probably be administered at a regional level (to aggregate investment opportunities), but must be delivered with the direct involvement of local authorities. Modelling suggests that using government loans this scheme would cost £4.3bn/year over 20 years. If the householder funded the scheme as a 30-year

---

<sup>1</sup> This paper has been drafted by Ingrid Holmes, Climate Change Capital ([www.climatechangecapital.com](http://www.climatechangecapital.com)) with Nick Mabey, E3G ([www.e3g.org](http://www.e3g.org)). Financial modelling and advice by Peter Sweatman, Climate Strategy SL.

<sup>2</sup> Impetus Consulting and Greenpeace (30 Mar 2009). The Case for Including Energy Efficiency Investment in the Fiscal Stimulus Package. Available at: [http://www.greenpeace.org.uk/files/EE\\_fiscal\\_stimulus\\_Impetus\\_Report.pdf](http://www.greenpeace.org.uk/files/EE_fiscal_stimulus_Impetus_Report.pdf)

charge it would be at a cost of £460 per household per year. The economic benefits from energy savings would outweigh these costs.

- Under both financing alternatives householder participation would be encouraged through a balanced carrot-and-stick approach. Households would be directly incentivised for participating, but the opportunity would only be available for a time limited period. Post-2021 all houses would be required to reach these standards when sold or rented and no further subsidies would be generally available. To raise awareness and gain buy-in a level of marketing similar to the 'Tell Sid' campaigns of the 1980s would be needed.
- Whichever financing approach is taken, delivery of a National Energy Efficiency Scheme will require an expanded and skilled workforce capable of assessing potential energy savings and then properly installing a wide range of efficiency measures and equipment. We estimate a £70bn programme could deliver direct employment of 70,000 jobs over a 10-year time period<sup>3</sup>.

### 1. The energy efficiency opportunity

In 2006, the International Energy Agency (IEA) projected that energy efficiency measures could account for 65% of emission savings by 2030 in its 'Alternative Policy Scenario', far in excess of the impact expected from switching to renewables and nuclear (at 22%)<sup>4</sup>. To deliver these reductions the IEA believes an additional \$2.4tr in demand side investment is needed globally to 2030, compensated for by \$8.1tr in energy bill savings and \$3tr in avoided supply side investments<sup>5</sup>. This IEA research is only one of a multitude of studies showing the large economic and environmental benefits available from increased efficiency investment.

Even though investors have woken up to the economic potential for energy efficiency investments, tangible investment opportunities are limited. Energy efficiency investment ranks at the lower end of scale in industry assessments of the climate change investment space<sup>6</sup>. The abundance of the investment potential and the supposed modest costs involved indicates there are very significant barriers to mobilising this type of investment. These barriers are very well understood and numerous. They include the "hassle factor" (i.e. the time and effort required to identify and secure improvement works), access to and the opportunity cost of capital and split incentives. From an investment point of view, the key reasons that energy efficiency investment is not being delivered are:

---

<sup>3</sup> Impetus Consulting and Greenpeace (30 March 2009). Numbers based on reports therein that £5bn would deliver 50,000 jobs.

<sup>4</sup> IEA (2006) World Energy Outlook

<sup>5</sup> New Energy Finance (2007) Energy efficiency: the cheapest form of abatement

<sup>6</sup> New Energy Finance (December 2009) Presentation at the 2<sup>nd</sup> Energy Efficiency Finance Forum

- the opportunity is highly fragmented – meaning there are high transaction costs; and
- the energy efficiency assets are non-status low-visibility investments which means they are not properly valued and because of this have not become mainstream, despite their very beneficial characteristics.

This paper argues that to deliver energy efficiency at scale, these key investment issues will need to be addressed through aggregating the opportunity and through creating a value for energy efficiency that overcomes the multiple market failures. It goes on to describe how Government has a key role to play in delivering this and provides suggestions for investment and policy models which could be used.

## 2. Current situation

Household energy efficiency measures include some of the most cost-effective means available for addressing carbon emissions, fuel poverty and kick-starting the industrial transformation of the UK economy<sup>7</sup>.

Current energy efficiency policies such as the Carbon Emissions Reduction Target (CERT)<sup>8</sup> take a scattergun approach. They are unlikely to be successful in upgrading the energy performance of all UK homes in part because of the difficulty of identifying suitable properties and the limits placed on the range of technologies that can be installed. In addition, because energy efficiency installation is a significant household intervention, more public cooperation will be required – perhaps the most difficult part of the piece to manage.

Energy efficiency is probably the most complex climate intervention to deliver because the market failures are many. The current policy framework is not sophisticated or robust enough to overcome these failures and galvanise the mass change in attitudes to energy efficiency that will be needed to deliver this investment at scale.

## 3. Policy proposal

A National Energy Efficiency Scheme would involve an unprecedented policy effort aimed at retrofitting the existing house-stock with adequate insulation and efficiency upgrades to boilers, lighting etc using a 'whole house' approach. It would be for the Government to set standards to determine what the appropriate measures would be. However, given this would be a one-off policy approach and that a significant component will involve galvanising householders into action, the Government should be ambitious in its efforts.

---

<sup>7</sup> According to McKinsey's marginal abatement cost curve analysis, energy efficiency measures including insulation can be delivered at net negative cost.

<sup>8</sup> <http://www.defra.gov.uk/environment/climatechange/uk/household/supplier/cert.htm>

For the purposes of this paper we have used a funding figure of £7bn/year for a 10-year scheme, which should be adequate to bring the total UK housing stock up to a 'decent' 'B' or 'C' rating under the Energy Performance Certificates (see Section 4 for more discussion of these costs). This represents a significant acceleration of current plans, and a qualitative shift from an incremental retrofitting process to a one-off time-limited programme. This shift in scale and pace will produce larger and earlier economic benefits, but also will make the programme more attractive to investors and more visible to householders in terms of securing their engagement.

The method chosen to finance and deliver the scheme will define the players and entities needed to ensure success. We have described here two alternative options Government could consider.

- Option 1: Financed by central Government funds and delivered by consortia that tender to offer the service on behalf of Government
- Option 2: Financed by a long-term Government loan facility repaid by a charge on consumers and delivered by the market

Both schemes share some common features, which focus on delivering the aggregation opportunity. These are described first.

#### **4. Delivering an aggregated energy efficiency opportunity**

Providing effective incentives to drive real human behaviour change is recognised as a crucial and problematic element of designing interventions to raise household energy efficiency. Following the failure of many policies based on naïve models of rational consumer behaviour, extensive experimental research has been carried out in this area. The research has shown that most energy efficiency actions are unlikely to be driven by unsolicited advice or information, and that a more coordinated approach is needed that delivers information from varied sources. Actions such as installing energy efficiency measures do however engender the ability to recognise, use and remember sources of information, monitor energy use and plan ahead for additional improvements in efficiency<sup>9</sup>.

The common features of the National Energy Efficiency Scheme focus principally on addressing these issues and around the need to widely socialise the idea of energy efficiency having value. This will create demand for energy efficiency improvements and deliver 'public

---

<sup>9</sup> Sarah Darby (2006) Social learning and public policy: lessons from an energy conscious village. Energy Policy 34, 2929-2940

cooperation' with the scheme. Because there are many different market failures, such as undervaluation of energy-saving benefits, that need to be addressed, there will be no 'magic bullet'. Instead a suite of measures will be required<sup>10</sup>.

**Public cooperation key** Public cooperation will need to be delivered through a well-publicised 'carrot and stick' approach. The 'carrot' would involve financial incentives (costed into the scheme up front). This could be an initial £50 payment to households when they allow a Home Energy Assessor to enter and audit their property for energy performance, followed by an additional cash-back payment of say £450 once the suggested energy efficiency work is completed. In addition, there would either no charge for energy efficiency installations (where the taxpayer pays – Option 1) or assistance with paying for the improvements so there is no visible upfront cost (where the consumers pay – Option 2). The 'stick' would be that: the cash-back incentives would be time-limited and that in 2021 minimum standards on the energy performance of all properties sold or leased (bar those with a derogation) will be introduced.

For these proposals to be effective, extensive advertising would be needed. A campaign that starts off along the lines of the 'Tell Sid' campaign<sup>11</sup> is the kind of scale of marketing effort that would be required at the beginning to socialise the scheme. This would need to be supported by follow-on campaigns to ensure momentum is maintained over the duration of the policy initiative.

The policy drive aimed at delivering public cooperation would deliver the aggregation opportunity, thereby making the energy efficiency proposition investible. The issue for Government will be then to determine how the scheme should be financed and delivered.

## 5. Financing the Efficiency Programme

**Financing the capital spend** Whether taxpayers (Option 1) or consumers (Option 2) ultimately pay for the energy efficiency improvements, capital will need to be made available to fund the scheme up-front. The Government could use a green bond issuance to fund the programme, which would be delivered over a 10-year timeline. Conventionally, a 10-year programme would be funded through 10-year gilts, but the Government would not need to restrict itself to this option<sup>12</sup>. For illustrative purposes, we have modelled the costs of delivering a National Energy Efficiency Scheme based on a range of spend per household

---

<sup>10</sup> On the plus side, it only needs to be done once – as in future it is proposed that the energy performance of all buildings will be managed through a range of Building Regulations.

<sup>11</sup> 'Ordinary man' campaign in the 1980s used to publicise the share offerings during privatisation of British Gas.

<sup>12</sup> Long-dated gilts have a higher yield, increasing the cost of borrowing. For example, forward gilt curves indicate 5 year borrowing at 2.24%, 10 year at 3.03% and 15 year at 3.68%. We used a base case 10-year bond to match the funding to the scheme length, but any maturity could be used. Issues around setting bond maturities is discussed in the paper Accelerating Green Infrastructure Financing: Outline proposals for green bonds and infrastructure bank.

(£3,000, £5,000, £7,500) spread of borrowing (5, 10 and 15 years) and spread of repayment (where the bond is securitised against householder repayments – over 30 or 50 years). See Annex 1 for further descriptions of this modelling.

**Paying back the capital spend** In the event that the Government decides to fund the scheme (Option 1), coupons and capital repayments due on the bonds will be paid from the Government's balance sheet. If the decision is taken that households will receive energy efficiency improvements via a long-term loan facility (Option 2) there are two key points. First, the repayment would be secured through the location-specific charge 'pay as you save' proposed in the Heat and Energy Saving Strategy. This ensures the repayments are embedded in the electricity bill and passed on via the district network operator to the original 'investor' (the Government) regardless of whoever lives in the property. Second, householders that do not take up the offer of energy efficiency improvements will be expected to 'buy out' of the scheme in the form on a on-going charge also embedded in their energy bill by the same 'pay as you save' mechanism. This latter measure is likely to deliver higher levels of uptake of efficiency measures.

A key component of success of the Energy Efficiency Scheme will be to ensure that service levels are acceptable, i.e. that measures are installed correctly. Therefore, before the final cash-back payment is authorised, the original Home Energy Assessor (probably in association with the local authority) would need to return to the property and certify that the work had been completed to a satisfactory standard<sup>13</sup>.

## 6. Delivering the scheme

### **Option 1: Top down. Financed by central Government funds and delivered by consortia that tender to offer the service on behalf of Government**

**Private Finance Initiative (PFI)-style approach** The Government does not have the capability to deliver a National Energy Efficiency Programme by itself. However, if a 'top down' centralised effort is preferred, a PFI-style approach could be used. Experience to date suggests that PFI can be appropriate for major and complex capital projects with significant ongoing maintenance requirements. Delivery of a National Energy Efficiency Scheme can be considered a major and complex project, although it is unlikely that there will be significant ongoing maintenance requirements<sup>14</sup> and it would not be delivered on a single but on millions of sites. Selection of this delivery option would enable the utilisation of extensive project management skills, programme design and risk management expertise the private sector has

---

<sup>13</sup> For comparison for the Warm Front Scheme 100% of heating installations are checked and around 5% of insulation installations.

<sup>14</sup> Although if replacement boilers and microgen are installed then it could be argued there is a case for on-going maintenance contracts.

to offer, helping to ensure that desired energy performance standards are met and that the national refurbishment scheme is delivered on time and to budget.

**Overseeing the programme and allocating risk** A single national scheme would be too large to administer, so the first step would be for the Government to determine the regional geographies over which the scheme should be delivered. For the purposes of the financial modelling in this paper, we have suggested ten regional zones which could each consist of a number of local authorities grouped together. The Government would also need to decide who oversees Government interests with respect to delivery of the scheme in each region by assigning a Coordinating Body. Options could be a new Energy Efficiency Agency<sup>15</sup>, the proposed Green Infrastructure Bank (GIB)<sup>16</sup> (both of which would need a series of programme leaders to oversee the regional contracts) or the existing Regional Development Agencies.

A key element of success will be ensuring the scheme is managed so that it recognises the mutual responsibilities of the public and private sectors, with optimal sharing of those risks between contracting parties. A PFI-style contract would be at risk of becoming a very protracted model because of the complexity of contractual terms. To manage this risk, initial dialogue on the principles of risk apportionment should be held between the Her Majesty's Treasury (HMT) – or the GIB – and representatives from industry and the banking sector. In principle we would expect Government to manage demand side risk through policy design ('carrots and sticks') and local government assistance, and the private sector to take construction and performance risk.

**Issuing and awarding tenders** Once these issues are settled, the Coordinating Body would put regional contracts out to tender. The cost and time implications of tendering are such that traditional PFI is generally only appropriate for projects costing over £70m; the energy efficiency scheme could cost £7bn in 10 regions, so this is an additional indicator of appropriateness of this approach<sup>17</sup>.

A range of skills would be needed to deliver this scheme and so we would expect the Coordinating Body to select and sign energy efficiency delivery contracts with private sector consortia, given a legal personality through Special Purpose Vehicles (SPVs). Consortia that contract to deliver the energy efficiency programme in a region could consist of companies with expertise in:

---

<sup>15</sup> Analogous to Digital UK, which is a not-for-profit company tasked with delivering the UK analogue to digital switchover.

<sup>16</sup> GIB – see E3G and Climate Change Capital (2009). Accelerating Green Infrastructure Financing: Outline proposals for UK green bonds and infrastructure bank.

<sup>17</sup> PFI-style tendering process would take around 2 years. But with political will behind the process, there are options to truncate timelines. This would be subject to negotiation among the relevant contracting parties.

- Managing many customer relationships (e.g. BSKyB, Tesco, Virgin, British Gas);
- Installing energy performance measures (e.g. Mark Group, Eaga, Warm Zones);
- Energy auditing (e.g. Energy Reports Direct);
- Retail banking (Cooperative Bank, HSBC); and/or
- Access to a workforce and logistical operations that could be trained to install energy efficiency measures (e.g. Serco, Veolia).

Once terms have been finalised, the Coordinating Body would transfer detailed control over delivery of the project to the selected consortia. The consortia would not need to raise debt on the market to deliver the scheme, as would happen under the usual PFI arrangement. Instead the scheme would be fully funded by 'credits' (subsidies) disbursed from the Government via HMT or the GIB in order to deliver the energy efficiency 'assets' to the nation.

**Street by street delivery** Schemes would be delivered and coordinated in association with local authorities. A key element to the success scheme will be well managed communication and scheduling of works between the energy auditors, installers and householders to ensure the programme is smoothly rolled out. This will require significant project management and coordination skills. Local authorities would therefore need dedicated and fully resourced staff (funded through new money to local government) to support successful roll-out the scheme.

In conjunction with local authorities a programme of energy efficiency roll out would be drawn up in a series of tranches across each of the ten regional geographies. The scheme should work on an 'opt-out' basis - local authorities in partnership with delivery agents would contact households with details of the scheme, suggested appointment dates and information on the process (and implication) of opting out of the offering. Energy audits would follow along with a schedule for delivering improvements and arrangements for the cash-back payments to be made.

**Option 2: Bottom up. Financed by Government loan facility repaid by a charge on consumers and delivered by the market** Energy efficiency is a low margin, high volume business. One of the issues facing any entrepreneur wishing to enter the energy efficiency market is lack of demand for products, and where there is demand it is often fragmented – adding significant transaction costs. The largest companies – such as EAGA and Mark Group – have been successful because they were contracted to deliver energy efficiency improvements that others had aggregated. (EAGA acts as a delivery agent for Warm Front and Mark Group acts as a delivery agent for energy suppliers obligated to deliver CERT.)



**Government policy delivers the opportunity** Changes in the policy framework for incentivising energy efficiency improvements combined with accessible loans to consumers would change the nature of the market completely, by delivering greater demand for products. The Government loan facility ‘pay as you save’ could be delivered by the GIB, a range of retail banks or local authorities or addition. The ‘pay as you save approach’ would:

- Remove upfront costs to improvements for householders;
- Enable repayments to be spread over long time periods, making them affordable;
- Deliver a secure repayment stream to the loan provider (the Government);
- Allow the loan to be passed from householder to householder (much as ground rent is on a leasehold property).

Repayments would be embedded in the energy bill, delivering additional security on the loan and, crucially, the standing charge would be lower than the energy cost savings accruing to the householder.

The scale of demand we expect the Government’s ‘public cooperation’ effort would create would also make a strong investment case that should enable companies wishing to enter the space to raise capital in the market to finance their businesses. These companies would need to be accredited to ensure appropriate levels of service are delivered.

**From loans to improvements** Delivering on a street-by-street approach will require coordinated effort. Again a key element to the success scheme will be well managed communication and scheduling of works - which will require significant project management and coordination skills. Local authorities would therefore need dedicated and fully resourced staff (funded through new money to local government) to support successful roll-out the scheme. One model under which they could do this is in coordination with local banks or utilities (with their considerable data and project management capabilities), who could be paid a fee for assisting with contacting households with details of the scheme, set up appointments dates and make arrangements for the cash-back payments to be made.

## 7. Cost of the scheme and jobs delivered

**Further work on costing the scheme** The heterogeneity of the UK housing stock makes it difficult to accurately and easily identify the scale of investment needed to deliver housing with a ‘decent’ level of energy performance. However we do know that there are 9m uninsulated cavity walls; >1m uninsulated lofts; 10m insufficiently insulated lofts and 7m uninsulated solid walls<sup>18</sup>. There are various estimates of the costs of delivering a national energy efficiency programme; The Centre for Sustainable Energy estimates investment of up

---

<sup>18</sup> UKGBC (2008) Carbon Reductions from Existing Homes. Available at: <http://www.ukgbc.org/site/info-centre/displayCategory?id=21>

to £9bn will be needed to ensure 2016 fuel poverty targets are met<sup>19</sup>. A Friends of the Earth analysis indicates that funds of £10bn/year are needed to deliver a UK housing stock rated at 'C' at a minimum under the current Energy Performance Certificate system<sup>20</sup>. The Sustainable Development Commission estimated £10bn/year would be required<sup>21</sup>. Under Conservative Party proposals, estimates £7bn/year is likely to be needed<sup>22</sup>. The Environmental Change Institute at Oxford estimated the market for a green refurbishment in the UK could be worth £3.5–6.5bn/year<sup>23</sup>. For the purposes of modelling this proposal, we have used the figure of £7bn/year. But it will be essential that Government fully investigate the current energy performance levels of the housing stock before it fully costed the scheme and determined what size bond issuance would need to be issued in order to pay for it.

**Potential cost to Government and to householders** The energy efficiency scheme could be fully funded by Government or funded via a Government loan facility: in either case the capital spend would be financed by an Energy Efficiency Bond. The modelling shown in Annex 1 indicates that if the Government chooses to fully fund and guarantee the scheme backed by a series of 10-year green gilts over the lifespan of the scheme it would cost HMT £4.285bn/year over 20 years<sup>24</sup>. If the householder funded the scheme (costed at £7,500 per household and repaid as a 30-year charge) it would be at a cost of £460 per household per year<sup>25</sup>. A buy-out price would need to be linked to this latter charge.

## 8. Variations

While we have used two options here for clarity there are a number of other variations which could be envisaged. One potential concern with the top down option described is that while it would deliver a street-by-street approach, it could restrict consumer choice and privilege large firms at the cost of the smaller local operators who may be the most likely to mobilise at short notice. However, a top down Government funded approach could be scaled down so that local authorities tender to regional providers and manage contracts locally<sup>26</sup>.

Other variations are also possible: the market-led delivery approach could be fully Government funded, or Government could also choose to extend the household charge for 50

<sup>19</sup> Centre for Sustainable Energy (2008) How Much: the cost of alleviating fuel poverty. Available at: [http://www.ukace.org/index.php?option=com\\_content&task=view&id=41&Itemid=26](http://www.ukace.org/index.php?option=com_content&task=view&id=41&Itemid=26)

<sup>20</sup> Private discussions.

<sup>21</sup> <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmenvaud/uc202-i/uc20202.htm>

<sup>22</sup> The Conservative Party (2009) The Low Carbon Economy: Security, stability and green growth. Available at: [http://www.conservatives.com/Policy/Security\\_Agenda.aspx](http://www.conservatives.com/Policy/Security_Agenda.aspx)

<sup>23</sup> Killip, G (2008) Building and Greener Britain: Transforming the UK's existing housing stock. Available at: <http://www.fmb.org.uk/information-and-help/publications/masterbuilder/2008/august-2008/the-fmb/?entryid19=2830>

<sup>24</sup> Note for comparison that every year £5.3bn is spent annually on energy efficiency and fuel poverty programmes, including £2.4bn in Winter Fuel Payments to households that are not fuel poor. NEA (2009) Discussion paper: national energy efficiency strategy. Available at: <http://www.nea.org.uk/national-energy-efficiency-strategy/>

<sup>25</sup> This number is not net of fuel saving delivered by efficiency improvements.

<sup>26</sup> This is an option National Energy Action is exploring.

years, with a proportion corresponding to tax rebate or other direct support, such that the financial burden is shared or reduced. This latter point will be a key consideration when addressing fuel poverty concerns. To be equitable, Government will need to reduce/eliminate recharging of costs to vulnerable households.

## 9. Conclusions

In the first quarter of 2008, eight construction companies were going out of business each day. In the first half of 2009, 90,000 construction jobs are at risk<sup>27</sup>. A National Energy Efficiency Programme could deliver a solid and strategic vision of how to reverse this trend, utilising current extensive spare capacity in the construction and associated industries. Funding energy efficiency is an opportunity for the Government to fund decreased consumption, reduce waste in the energy system and put more money into consumer pockets. It will also lower the cost of meeting 2020 renewable energy targets and insulate the UK against volatile energy prices to meet energy security concerns.

The World Economic Forum argued that when designing an effective stimulus package every dollar should be made to multitask<sup>28</sup>. A UK National Energy Efficiency Scheme could provide support for short term consumption and jobs as well as building long-term production capacity within the economy while looking forward towards key long term goals such as a sustainable energy system. It is an opportunity we cannot afford to miss.

---

<sup>27</sup> National Federation of Master Builders.

<sup>28</sup> World Economic Forum (2009) *Green Investing: Towards a clean energy infrastructure*.

## Annex

**Table 1. Sensitivity of maturity of debt to cost of financing National Energy Efficiency Scheme assuming £7,500 spend per building and either cost to Government (equivalent annual Government spend) or cost to consumers – repaid through a charge over 30 or 50 years**

(50 year levy)	5 Years	10 Years	15 Years
Total Programme Size	£73,000 bn	£73,000 bn	£73,000 bn
Whole Programme IRR	4.50%	4.89%	5.00%
Equivalent Annual Govt Payment	£2,067 bn	£3,591 bn	£3,755 bn
Estimated EE Levy per Dwelling	£221.44	£384.74	£402.31
<b>(30 year levy)</b>			
	<b>5 Years</b>	<b>10 Years</b>	<b>15 Years</b>
Total Programme Size	£73,000 bn	£73,000 bn	£73,000 bn
Whole Programme IRR	4.50%	4.89%	5.00%
Equivalent Annual Govt Payment	£2,507 bn	£4,285 bn	£4,459 bn
Estimated EE Levy per Dwelling	£268.64	£459.06	£477.79

**Table 2. Sensitivity of unit price for energy efficiency upgrades assuming 10-year debt maturity. Cost to Government (equivalent annual Government spend) or cost to consumers – repaid through a charge over 30 or 50 years**

Avg Unit Price (£ per home)	3,000	5,000	7,500	with 50 year Levy
Total Programme Size	£31,000 bn	£50,000 bn	£73,000 bn	
Whole Programme IRR	4.91%	4.90%	4.89%	
Equivalent Annual Govt Payment	£1,535 bn	£2,465 bn	£3,591 bn	
Estimated EE Levy per Dwelling	£154.90	£257.06	£384.74	
<b>with 30 year Levy</b>				
Avg Unit Price (£ per home)	3,000	5,000	7,500	
Total Programme Size	£31,000 bn	£50,000 bn	£73,000 bn	
Whole Programme IRR	4.91%	4.90%	4.89%	
Equivalent Annual Govt Payment	£1,829 bn	£2,940 bn	£4,285 bn	
Estimated EE Levy per Dwelling	£184.61	£306.59	£459.06	

