

Delivering carbon savings in the domestic sector

The UK Business Council for Sustainable Energy (UKBCSE) brings together the major players¹ in the energy sector to secure an effective and rapid transition to a low carbon economy that both tackles the challenge of climate change and maintains the UK's security of supply.

It is clear that achieving significant improvements in energy efficiency will be vital in addition to other actions such as creating new, smarter energy infrastructure, and decarbonising both heating and energy supply in the UK.

There is considerable potential to deliver carbon savings in the domestic sector. With a cross party commitment already in place for all new homes to be zero carbon from 2016, this paper focuses particularly on the challenge of retrofitting of existing homes and looks post-2012 when existing programmes such as the mandatory Carbon Emissions Reduction Target (CERT) and new Community Energy Saving Programme (CESP) are both due to end.

The paper sets out a number of key recommendations including:

- Consumer demand must be actively driven by effective financial and fiscal incentives and with strong enforcement of both today's and tomorrow's energy standards for all buildings;
- Strong and consistent communications are needed to engage consumers, and once interested, the process for taking action should be simple;
- Attractive consumer finance packages are needed;
- Delivery partnerships between local authorities, energy companies, and others will be important, with a coordination body potentially enabling a strong and trusted brand for the delivery programme as a whole.
- Government should lead by example by decarbonising its own buildings and through its procurement policies; and the
- Various policies should fit well together and the work of different Government departments must be effectively coordinated.

The paper draws on previous work by the Council in this area, as well as reflecting on some of the proposals put forward by the Government, Opposition Parties and other organisations² over the past year. We look forward to continued engagement with various stakeholders on this agenda.

¹ Members of the Council include Centrica, EDF Energy, E.ON UK, National Grid, RWE npower, Scottish and Southern Energy and Scottish Power.

² Including DECC (2009) 'Heat and Energy Saving Strategy Consultation', 'Low Carbon Transition Plan' and 'The Big Energy Shift', Conservative Party (2009) 'The Low Carbon Economy: Security,

Introduction

There is potential for dramatic reductions in carbon emissions from the domestic sector. For new buildings, there is already a commitment for all new homes to be zero carbon from 2016. However, in terms of retrofitting existing buildings, the challenge is huge and will require a balanced approach of decarbonising upstream generation, and thereby supply, and delivering energy saving measures. Developing consumer buy-in and demand will also be critical.

Programmes to date such as the CERT, Warm Front and Decent Homes, have been largely successful at delivering relatively low cost measures, often heavily subsidised, to householders, such as low energy lighting, loft and cavity wall insulation. However, a shift will soon be needed to delivering more expensive, disruptive measures with longer payback periods, such as solid wall insulation and microgeneration, and potentially to offering consumers 'whole-house' packages.

This will require a partnership approach with a greater focus on engendering consumer trust, providing good quality information and advice, developing attractive packages of measures and finance for consumers and ensuring the process for taking action is simple. To ensure equity as we move to delivery of more expensive home retrofits, we will also need to ensure that the model encourages those that are able to pay to contribute more to their own home improvements, whilst supporting vulnerable groups.

This short paper outlines the Council's current thinking on what is needed for an effective framework for delivering carbon savings in the domestic sector, particularly looking post-2012 when existing programmes such as CERT and CESP are due to end. It focuses on policy objectives, ways of engaging consumers, suitable delivery models, financing options, low carbon job opportunities and transitional arrangements.

Policy objectives

Clear carbon objectives

We believe the primary focus of a new delivery framework should be on carbon abatement, particularly in light of the UK's ambitious target to reduce carbon emissions by 80% by 2050. We welcome the target set out in DECC's Low Carbon Transition Plan for a reduction in domestic carbon emissions by 29% (below 2008 levels) by 2020. We recommend that any new policy is closely aligned with the UK carbon budgets in terms of targets set and timeframes.

We recognise that there is an opportunity to achieve wider environmental, social and economic benefits³ from a new delivery framework. However, we need to avoid overcomplicating delivery by trying to achieve multiple policy objectives with a single policy instrument.

Coherent policy framework

Today's policy landscape is becoming increasingly complex with numerous overlapping policy instruments and initiatives⁴. These need to be effectively and coherently brought together under an overarching framework which ensures no unintended double counting or perverse incentives. This includes a joined up approach between departments – for example, we welcome moves to bring domestic policies under DECC's Household Energy Management (HEM) programme, but this also needs to be coordinated with DCLG's approach to zero carbon new build and development of building standards.

Government commitment

We welcome the degree of cross party consensus that is already taking place in relation to the energy and climate change agenda. Building on this, it is important to develop a long-term government commitment to carbon abatement.

More stable, long-term policies are needed to reduce uncertainty for investors and delivery bodies. In addition, the Government should take a leadership role by progressively decarbonising the public estate. This is something which has been widely advocated by the political community and other stakeholders. The Government has also set out ambitions and targets through the Low Carbon Transition Plan and SOGE (Sustainable Operations on the Government Estate).

³ Such as carbon savings, improving the housing stock, reducing energy bills, addressing fuel poverty, increasing renewable generation, helping to maintain energy security and developing new industries and jobs.

⁴ Including Carbon Emissions Reduction Target (CERT), Community Energy Saving Programme (CESP), Low Carbon Communities Challenge (LCCC), Green Consumer Financing Pilots, Warm Front, Decent Homes, Building Regulations, Product Standards, Smart Meter roll out, Zero Carbon Homes, Renewable Energy Strategy (RES), Clean Energy Cash-back, the Carbon Reduction Commitment (CRC) and EU Emission Trading Scheme (EU ETS).

Consumer engagement

Consumer engagement strategy

A coherent strategy for engaging householders and other key stakeholders on the climate change agenda is needed. This would ideally involve the creation and development of a comprehensive strategy for engagement, with indicators for communications, raising awareness, behaviour change and trust as well as delivery of measures. This could include identification of some key groups and exploration of techniques to best engage with them. It could also set out any possible regulatory steps.

This should build on the work already being undertaken by DECC through the Heat and Energy Saving Strategy Consultation process, Big Energy Shift, as well as work from other Departments (e.g. Defra's Environmental Behaviours Unit⁵). Further academic and market research on barriers and motivators for consumers in undertaking certain measures would be welcome.

Driving consumer demand

A real and practical focus is needed on how best to drive consumer demand for measures which improve the energy performance of their homes. Long term public expenditure constraints have led to a policy model in which the onus is on the energy industry to promote subsidised measures, with a plethora of different organisations⁶ trying in their own ways to make the case to consumers.

We suggest that consumer demand can be driven in a number of different ways, all of which may be appropriate to meet the scale of the challenge.

- Valuing energy performance – encouraging consumers to value energy performance by promoting the benefits and through fiscal incentives and potential regulatory measures linked to energy performance certificates in the longer term (an evaluation of these options is included in **Appendix A – Figure 1**). Such approaches also help in ensuring that energy performance is reflected in house prices.
- Financial and fiscal incentives – offering loans, grants, subsidies and/or incentives for measures. Providing rebates on council tax, stamp duty or capital gains tax linked to the energy performance of the home.
- Stronger messaging – communications at all scales need to be better, more consistent and more targeted. For example, varying the message and medium to suit different segment groups, and looking to capture the consumer's attention at the right time. Well known pitfalls⁷ should also be avoided, such as outlining the enormity of the issue and a selection of tiny actions to undertake. Instead, more

⁵ In 2005, Futerra put together recommendations to Defra on this through a report entitled 'UK Communications Strategy on Climate Change'.

⁶ Including central, regional and local government, Energy Saving Trust, Carbon Trust, Consumer Direct and other environmental/consumer interest groups.

⁷ For example Futerra (2005) 'UK Communications Strategy on Climate Change' and 'the Rules of the Game'.

positive marketing is needed which shows low carbon living as fun, desirable and a social norm.

- *Innovative engagement* – encouraging local community action, working through key interest groups (e.g. women’s institute), online social networking, use of popular media. For example, the current 10:10 campaign could prove to be a more innovative way of engaging different groups.
- *Examples in everyday settings* – showcasing best practice, from sharing experiences peer-to-peer to community projects to ‘greening’ the Government estate. Implementing and demonstrating low carbon measures in everyday settings such as businesses, schools, hospitals and community buildings can help build consumer familiarity and trust in them.
- *Special offers and rewards* – making attractive packages for consumers to take up, for example with time-limited discounts on products. Also acknowledging and rewarding consumers and groups for taking action, for example through special energy tariffs, community prizes (e.g. green streets).

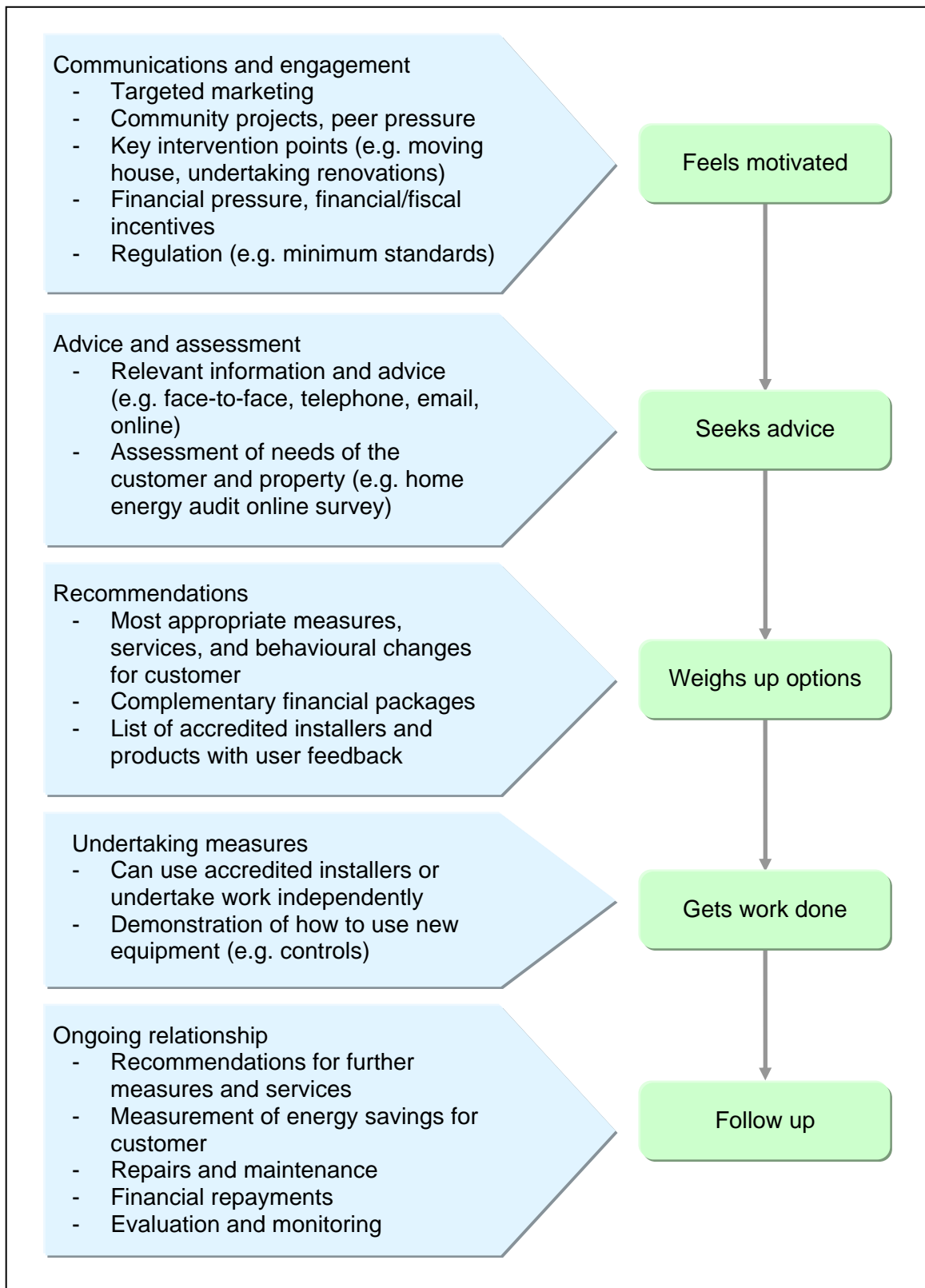
Making change easy

Once consumers are interested in taking action, it is important to make the process as easy as possible. A simplified diagram of the customer experience is illustrated on the following page.

Although recognising that all customer journeys will be unique, it is important to explore possible routes in (i.e. trigger points), routes through, and routes out (i.e. barriers). Some examples of these are listed in the **Appendix A – Figures 2, 3 & 4**, and form the basis for recommendations below.

- *Multiple routes in* – a more active strategy is needed to engage consumers at key trigger points such as when moving home, undertaking renovations, purchasing products or undergoing other lifestyle changes (see further examples in **Appendix A – Figure 2**). This includes ensuring first points of contact (e.g. architects, builders, retailers, health carers etc.) are ‘on message’ and that relevant advice and information is easily accessible. It also involves better targeting of consumers through data sharing and segmentation by demographics, attitudes / behaviours and property type.
- *Known brand* – many consumers do not know where to go for advice. Experience shows that having a strong and trusted brand which is used consistently can help improve awareness and uptake. The Government has worked to develop a brand through the ‘Act-on-CO₂’ campaign but this is not a message which resonates with everyone, and the Energy Saving Trust has developed a relatively well trusted brand but they are still not a household name. Having one umbrella brand which various delivery bodies are able to link to for marketing, certification and accreditation would make a lot of sense. This needs to be long term and not subject to change.

Simplified diagram of the customer experience



- Accessible information – it is often a challenge to find good quality, relevant information. Various organisations provide generic information on the top ten measures to undertake or factsheets on specific technologies. However, there is very little opportunity for tailoring and depth. A more bottom up approach to information provision would be welcome which, like Wikipedia and other online forums, enables users update information and share advice peer-to-peer – with strong moderation and involvement from energy experts. There is also a need to ensure that consumers have access to their own energy use data in a form which works for them – including clearer billing, rollout of smart meters and accompanying manual / online displays of energy use data.
- Bespoke advice & support – again there are currently very few services which provide advice that is tailored to the needs of the consumer and their property. More widespread roll out of home energy audits and advice would be welcome alongside ‘one-stop shop’ call centre and online services – to provide ongoing support and handholding as needed. It is noted that in home assessments can be costly but there is potential to combine them with smart meter rollout to reduce transaction costs.
- Clear offerings – some consumers will be motivated enough to research different measures and financial support themselves, however, for others it would make sense for advisors and delivery agents to be able to recommend packages of measures and accompanying finance which would work best for them. In addition, it would also be useful to develop community scale packages, as is currently being explored through the Low Carbon Communities Challenge.
- Trusted delivery agents – many consumers do not know where to find trusted installers and impartiality means that advisors often cannot make specific recommendations. Again, this suggests the need for a trusted brand to which delivery agents are accredited and measures certified. Such quality assured agents and measures could then be listed with the opportunity for user ratings and feedback. There should also be training and regular monitoring to ensure quality is maintained.
- Tackle barriers to uptake – along the customer journey there will be various barriers to action, including lack of interest, knowledge, time, money and confidence in measures (see further examples in **Appendix A – Figure 4**). It is important to map out and work to address these barriers, so as to make journeys as smooth as possible.

Delivery

Principles for a delivery framework

There are a number of challenges for the deployment of new delivery vehicles, including the scale of carbon savings required, shifting to more costly and disruptive measures, encouraging mass consumer buy-in and trust, raising funds in a way that is equitable and developing a more stable market for investment which reduces supply chain uncertainty. In light of these challenges we believe that the design of a new delivery framework should be based on the following principles:

- Focus on delivering substantial carbon savings
- Deliver these savings cost effectively in the long-term
- Work to ensure that customer experiences are positive
- Allow flexibility to adapt offerings and approaches as appropriate
- Enable a competitive market for energy services
- Provide an effective mechanism for ensuring targets are met
- Ensure fairness in the way funds are raised and applied

For more detail on these principles, see **Appendix B – Figure 5**.

Measures to include

A more strategic assessment of options is needed to ensure that solutions for the near and medium term move us toward a vision for a sustainable built environment. This includes an appropriate balance of energy saving and decarbonisation measures.

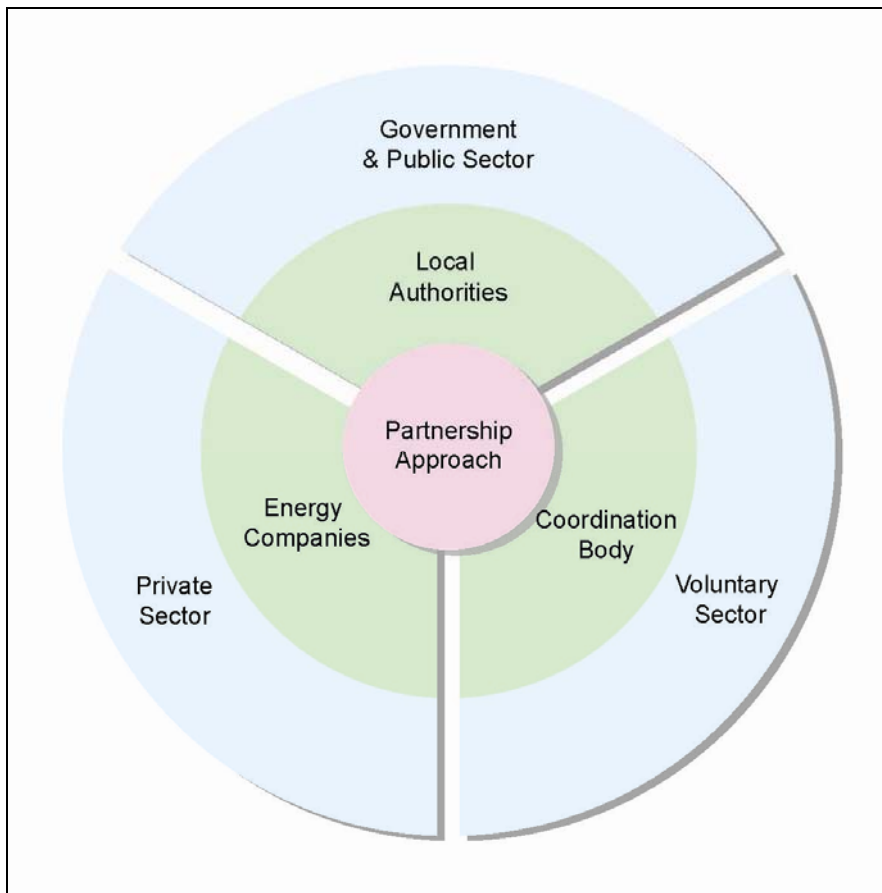
In selecting measures to include under a new programme, it is important to take into account support mechanisms already available, such as clean energy cash back, in order to ensure that policies fit well together into a coherent package which covers appropriate technologies, with no significant unintended overlaps or gaps.

A partnership approach

In terms of a model for delivery, we believe a partnership approach should be developed, which involves a core delivery team of local authorities, energy companies and a coordination body, with a wider role for government and the public, private and voluntary sectors. This is illustrated in a simplified way on the following page.

It is noted that there should be flexibility in terms of how these partnerships are formed and the approaches taken. For example, the model could enable area based delivery – such as a local authority and energy company working together in specific neighbourhoods, and a demand led component – such as a national retailer selling a particular low carbon product. We do not believe that is necessary, or desirable, to mandate partnerships as long as sufficient drivers are in place for the key parties involved and we are also working to identify and resolve any barriers.

Simplified diagram of a partnership approach to delivery



Roles of different players

The roles that we envisage for different players in this model are as follows:

- Central government – setting targets and frameworks for delivery and leading by example through progressive decarbonisation of the public estate.
- Local authorities – identifying local needs and opportunities, galvanising delivery partnerships at a local scale, improving the energy performance of local authority buildings and social housing and providing fiscal incentives to consumers.
- Coordination body – developing a trusted brand, communicating with consumers, providing information and advice, and ensuring quality through accreditation, certification, training and monitoring.
- Energy companies / energy service companies – marketing to consumers, delivering tailored packages of audits, advice, measures, services and finance, providing better energy use information.
- Private sector – providing capital for consumer finance and innovation.
- Voluntary sector – campaigns, empowering community groups, social enterprises and other ancillary benefits.
- Consumers – providing finance and undertaking carbon saving measures.

These roles are outlined in more detail in **Appendix B – Figure 6**. It is noted that this is not an exhaustive list of players involved in delivery.

Getting different players involved

At the moment, energy companies have to subsidise even highly cost effective measures by between 50-100% in order to make them attractive to consumers. This suggests that barriers to take-up of measures are currently high. Therefore, in order to ensure delivery of carbon saving measures, someone needs to be driving the process, either because they are motivated, incentivised or obligated to do so. We have considered the following options for who might take a lead on delivery:

- Central government
- Local authorities
- National / regional body
- Energy companies / energy services company
- An “open” energy services market (i.e. driven by consumer demand)

An evaluation of these options is provided in **Appendix B – Figure 7**. Linking back to the partnership model, it is felt that, with the scale of the challenge, all of these parties need to take a lead on certain aspects of delivery (i.e. Central Government – policy framework, local authority – local opportunities, coordination body – quality, energy service companies – delivering attractive packages and consumers – taking action).

Therefore we would recommend:

- Central government carbon targets – central government has already set out legally binding targets and carbon budgets and now needs to set out possible pathways and milestones for achieving these.
- Local authority carbon budgets – local authorities should be given a stronger remit to deliver local carbon savings – building on national indicators 185 and 186⁸ which most local authorities are already signed up to, and considering the possibility of introducing local carbon budgets / frameworks.
- A new coordination role – a new coordination body should be set up with options to do this including strengthening the remit of existing organisations, consolidating the roles and functions of existing organisations⁹ or putting the role out to tender. We are keen to avoid adding extra layers of bureaucracy and cost, rather to use the resources already available in a more coordinated and effective way.
- Energy company obligation / competitive energy service market – energy companies are currently subject to delivery obligations under CERT and CESP to 2012. The scale of the challenge post-2012 raises questions about the scope and form of any continuing obligation and this will require further discussion. In the long term, companies would welcome a shift to a more open energy services market through fiscal and regulatory measures to drive consumer demand.
- Incentives and a mandate for consumers – in the near term, financial and fiscal incentives may be necessary to encourage consumer uptake of measures.

⁸ NI 185 relates to carbon emissions reduction from local authority operations and NI 186 to per capita carbon emissions reduction in the LA area.

⁹ Such as the Energy Saving Trust, Carbon Trust, Environment Agency, Ofgem and the Homes and Communities Agency.

Regulatory steps relating to energy performance certificates should also be considered in the longer term, such as consequential improvements, minimum standards social housing and non-domestic sectors, implementation of cost effective measures for re-sale / rental, (see **Appendix A – Figure 1** for an evaluation of such options). This would show consumers the direction of travel, with the impetus to act early whilst support is available.

In addition to ensuring appropriate drivers are in place for different parties to form partnerships, it would also be useful to produce information and guidance for these different parties, especially on highlighting best practice examples. **Appendix B – Figure 8** sets out some of the current drivers for energy companies and local authorities to enter into partnerships, some issues which need to be addressed and key success factors.

Finance

Attractive consumer finance packages

It is envisaged that finance packages will be made available to consumers, or consumers can put together their own, including combinations of the following:

- *Fiscal incentives* – such as rebates on council tax, stamp duty or capital gains tax linked to the energy performance of properties, some of these options have the potential to be overall tax neutral – i.e. reward good behaviour penalise bad (the options are explored in detail in **Appendix A – Figure 1**)
- *Subsidy* – this could include incentives to increase overall uptake of particular technologies – such as under the Clean Energy Cash-back scheme, subsidies for specific measures or social groups – as under CERT, and other financial support – such as low interest loans and rewards for reduced energy use (these options are explored in more detail in **Appendix C – Figures 9 and 10**)
- *Long term loans* – to help with upfront costs. For example this could take the form of a Pay-As-You-Save (PAYS) scheme with a charge linked to a property which is paid back over time, ideally from savings on energy bills. This could be offered by the financial sector and potentially billed via local authorities or energy companies and/or registered social landlords (RSL) (**Appendix C – Figures 11 & 12** include diagrams and an evaluation of various options).

Developing a Pay-As-You-Save scheme

A PAYS type model is currently being promoted by both Government and Opposition Parties. Such a model has the potential to assist consumers with the upfront costs of measures, save them money over time and encourage them to make a greater contribution to the costs of measures.

In order to ensure that a PAYS approach works and benefits are fully realised the following will need careful consideration.

- Messaging – a consumer facing name is needed, as “PAYS” sounds like industry jargon and we are also concerned that consumers will feel misled if they do not perceive savings for a variety of reasons, such as fluctuating energy prices, comfort taking and other lifestyle changes.
- Measures – eligible measures could include heating, insulation, lighting, microgeneration and potentially other appliances. Measures would need to be provided by accredited personal and could carry a quality assurance mark.
- Link to the property – the main benefit of linking a charge to the property is that with change of tenancy or ownership, new occupants will gain benefits. It also may not have the same negative connotations as other ‘debts’.
- Economics – a PAYS scheme needs to make sense economically in terms of costs and payback for measures and savings on energy costs. Better modelling of energy savings from the installation of measures in different types of properties, will be needed. It will be important to offer low interest rates, therefore default risk must be minimised by securing the loan and protecting the asset value. The wider implications of any subsidies should also be taken into account in terms of cost pass through to all consumers.
- Loan security – the loan should be secured, with a robust method for debt recovery (e.g. for energy companies – via smart pre-payment meters and service disconnection if necessary) and the value of the asset should be preserved through broader fiscal and regulatory steps to encourage consumers to value energy performance. If the loan is properly secured then a Government guarantee should not be necessary.
- Billing routes – we are currently looking at practical implementation issues of using an energy company billing route. However, we do not feel that other billing options, such as local authority and RSL, should be discounted in the near term, and we welcome the green consumer finance pilots being undertaken by DECC and the Energy Saving Trust.
- Finance – the amount of finance required for this scheme could be potentially in the order of hundreds of billions of pounds – which will need to be raised via the financial markets. Further consideration will be needed on how this money could be raised.
- Legal implications – primary or secondary legislative changes may be necessary, depending on the model used.

Raising funds

A combination of public and private sector funding is needed. Including:

- Government / local authorities – continued investment in the social housing sector, targeted support for vulnerable groups, stimulating financial institutions to offer new ‘green’ consumer finance and support for a coordination body.
- Energy companies – subsidies for measures, cost recovery for financial incentives, possible billing for consumer finance.
- Financial institutions – upfront capital for investment in the programme and for PAYS scheme.

There should be further engagement with financial institutions on this agenda, in particular, what is needed to make this an attractive market to invest in – for example a more stable policy framework, minimum standards on buildings in the long-term and aggregation of investment opportunities. Further consideration of how a green infrastructure bank would work in practice is also needed including how public money can be used to leverage private investment.

An honest dialogue with consumers on the costs of making a transition to a low carbon economy also needs to be developed and sustained.

Low carbon jobs

We envisage that the growth in the domestic low carbon retrofit market could lead to creation of a significant number of low carbon jobs. Drawing on the UNEP (2008) ‘Green Jobs’ report, employment is likely to be affected in four key ways:

- New jobs created – e.g. home energy auditors and advisors
- Jobs substituted – e.g. boiler installations to microgeneration installations
- Existing jobs transformed – e.g. builders undertaking whole house retrofits
- Certain jobs may be eliminated – e.g. fossil fuel providers

In the UK, the types of roles which may develop include – spatial planning, low carbon design, technology research and development (e.g. solid wall insulation, microgeneration), manufacturing of products, sales and marketing, home energy audits and advice, installation of measures (e.g. low and zero carbon technologies, insulation, appliances, smart meters), development of new energy infrastructure (CHP, district heating and other infrastructure), fuel provision (e.g. waste, biofuels), programme and project management, servicing and maintenance, financial services and other consultancy work (e.g. concierge services).

The number of jobs which could be created is in the order of tens of thousands depending on the extent to which the government creates an enabling environment for market growth through fiscal and regulatory steps, as well as investment in research and development. Many of the jobs created would be highly skilled and would need to be locally based. In addition to direct job creation, it has been suggested that retrofitting schemes have wider indirect benefits because they save consumers money on energy costs which is then spent in other areas.

Conclusion

We very much welcome the focus that is currently being given to carbon saving in the domestic sector, in addition to decarbonising supply there is a huge opportunity for energy efficiency and renewable heat – which has the potential to improve consumer comfort and save on energy bills whilst mitigating carbon.

However, some of the changes required are radical, so early clarity is needed on the transition to a new delivery framework, so as to enable investment, support supply chains and avoid hiatus. In this context, we have already signalled support for the extension of CERT to 2012 and we recommend that a decision is made on a post-2012 framework by early 2011.

Now is the time for practical trials to explore how to make packages that work for consumers and their homes, including different measures and financing options.

The views expressed in this paper cannot be taken to represent the views of all parts of all companies in the UKBCSE. However, they do reflect a general consensus. Members of the UKBCSE Energy Demand working group which developed this paper are listed in Appendix D.