

PART 1

# Community Green Deal

Developing a model to benefit whole communities



## Section 1

# ***The need for whole house improvements***

*It has been estimated that 7 million homes will require whole house improvements to meet interim carbon reduction targets for 2020 and to build up enough momentum to meet the 2050 targets. This is a huge challenge and one in which the adage 'think global, act local' will be key to delivery.*

### **1.1 The national policy context**

The energy efficiency of the existing housing stock has emerged as a critical element of the UK's climate change policies. In the context of this report we define this as the improvement of domestic properties in order to reduce carbon emissions from domestic heat and power use.

The scale of the reductions required is defined by national policy objectives as being 34% by 2020 and 80% by 2050. The RIBA has estimated that this will require the upgrade of 11,000 homes per week for the next 40 years.

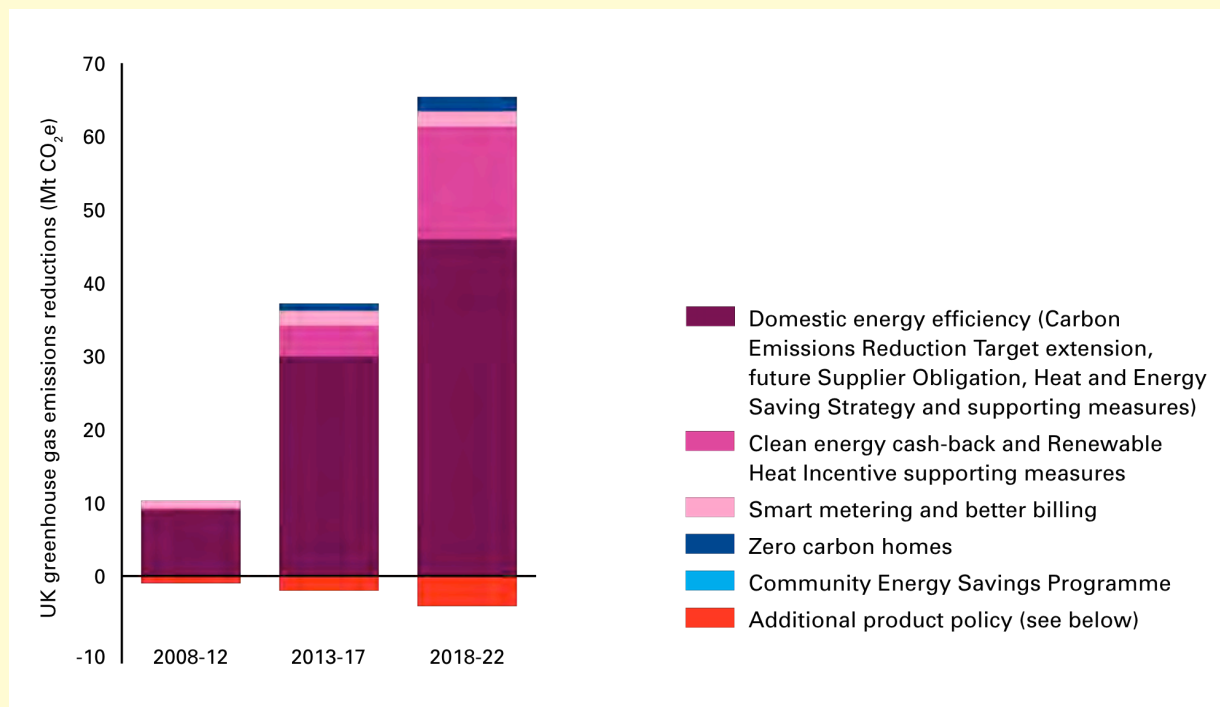
The need for a comprehensive programme of improvements for the existing housing stock was identified in the UK's Low Carbon Transition Plan (2009) and the Household Energy Management Strategy (2010). The

Low Carbon Transition Plan identified that the domestic sector will need to deliver a substantial share of the UK's emissions reductions. This would need to amount to at least 29% on 2008 levels by 2020, two thirds of which would be delivered by the improvement of existing stock.

Improving the energy efficiency of the existing housing stock is a key policy objective for the Government. The Conservative Party's 'Low carbon economy' and 'Rebuilding security' Green Papers and the Liberal Democrat's 'Zero carbon Britain' inform a number of key measures set out in the 'Green deal' proposed by the Coalition. This includes a proposal to roll-out of whole house energy saving packages to 7 million households by 2020 and all households by 2030. Community renewables projects are also going to receive support.

Figure 1.1

## The contribution of existing stock energy efficiency to domestic carbon emissions reductions



Source: HM Government (2009) *The UK low carbon transition plan*

### 1.2 The role of social housing in building the market

A key assumption in the Low Carbon Transition Plan was that social housing would lead the way in developing the market for existing stock energy efficiency improvements. It highlighted the need to ‘show leadership by ensuring that social housing meets, and where possible exceeds, the aims it is setting for all housing on energy efficiency and low carbon energy’.

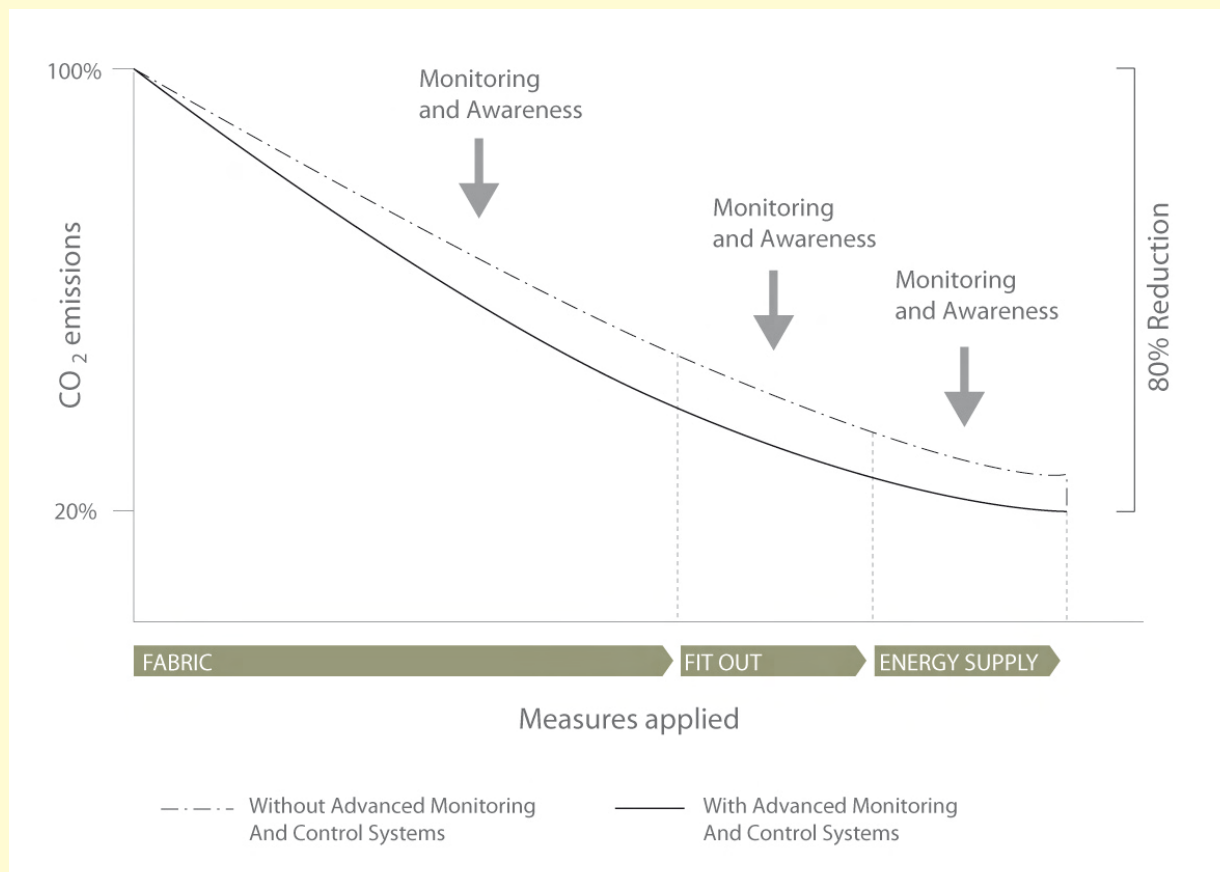
A prototype low carbon Beyond Decent Homes standard has been developed by the SHAP partners. The standard is designed to

set social housing on a course to support delivery of the Low Carbon Transition Plan. Its premise is that social housing is in the best position to deliver greater carbon reductions, earlier and at lower cost.

The Standard is framed in order to capture the wider benefits of early investment in the social housing stock. Its primary objective is to achieve a genuine equality of living standards for all social housing tenants, its wider objective is to build the capacity of the construction industry and supply chain for components in order to support a wider programme for the private housing stock.

Figure 1.2

## The Beyond Decent Homes standard energy hierarchy



Source: SHAP, *Beyond Decent Homes Standard 2009*

### 1.3 Bringing the benefits to communities and the local economy

Home energy saving is the embodiment of the adage ‘think global, act local’. Whilst the need is defined by international and national policy, delivery will need to engage every community and neighbourhood. This directly resonates with David Cameron’s notion that ‘*when people know their actions can make a real difference they are far more motivated to get involved*’.

But the potential benefits could reach far beyond physical improvements to homes, blocks and streets. The SHAP partners ‘Beyond Decent Homes’ standard highlighted the triple bottom line of benefits that major programmes of investment could deliver (see

Table 1.1). These range from direct improvements to people’s quality of life and the lifting of communities, to better housing asset management and growth in green collar employment.

The benefits to health and wellbeing of better insulated homes are well documented. The potential to reduce Excess Winter Deaths should be a priority. The West Midlands has a comparatively high level, standing at 16% more than would be expected over the last five years.

A further significant benefit could be insulating vulnerable households from rising fuel bills. Survey data for the National Fuel Poverty Strategy showed that between 2003 and 2007 the number of fuel poor households in the West Midlands rose from 6.7% to 21.6%.

The economic potential has understandably attracted wider attention. A recent report for the Federation of Masterbuilders calculated that the market could be worth between £3.5 and £6.5 billion per annum. The RIBA has put this figure at as much as £15 billion per annum.

This would represent a significant growth of the existing repair, maintenance and improvement market, which is worth approximately £24 billion per annum. The majority of firms engaged in this market are Small to Medium sized Enterprises (SME's) operating at a local or regional scale.

The most significant evidence of the potential multiplier effects comes from the German refurbishment programme, which has led to works on nearly 1.2 million homes since 2001. The programme has been pump primed by low interest loans provided by the Federal Government investment bank KfW. Economic analysis has shown that during this period 203,000 jobs have been protected or created by the programme and has levered in impressive amounts of private investment on a ratio of 1:10 for public:private investment.

The economic multiplier effect of this programme has been wide ranging, supporting Germany's continued strength in the design and manufacturing of low carbon

building products. The opportunities created have ranged from construction apprenticeships and diversification into specialist manufacturing to the research & development of new materials and energy technologies. This would create a significant opportunity for the West Midlands, which has suffered skills gaps in key sectors that have sought to diversify.

The Government's 'Green New Deal' is anticipated to drive the growth of this market, providing an opportunity to diversify and rebalance the UK economy and to find new economic drivers in order to move out of recession. The new Regional Growth Fund and Local Enterprise Partnerships (LEP's) could be ideal vehicles to support this growth, with LEP's able to use their local knowledge to identify where the opportunities may arise.

The Decent Homes programme gives some early pointers to the potential. Procurement consortia and local partnerships have been established and have been able to award a significant proportion of contracts to local and regional firms, supported by targets for the creation of new apprenticeships. Sandwell Homes, for example, has set targets of 96% local labour and 3% of the workforce introduced as apprentices.

**Table 1.1**  
**The triple bottom line of benefits**

Strengthening local communities
<ul style="list-style-type: none"> <li>• <b>Protecting and enhancing health and wellbeing:</b> Designing out construction defects, poor airtightness and cold bridging, all of which have been shown to reduce excess winter deaths and the burden on the NHS.</li> <li>• <b>Making a difference to fuel poverty:</b> Reducing bills to &lt;£5/m<sup>2</sup>/yr to ensure that properties are affordable for the most vulnerable households, in particular the elderly and single parent households.</li> <li>• <b>Restoring community pride:</b> Investment in comprehensive home improvements as a means of lifting neighbourhoods and engaging communities in the creation of healthy, self-sustaining local housing markets.</li> <li>• <b>Protecting and enhancing assets:</b> Investing in the longevity and asset value of the existing housing stock, including private rental property and empty homes, by addressing poor performance and making it more attractive.</li> </ul>
Rebalancing the local economy
<ul style="list-style-type: none"> <li>• <b>Investing for the future:</b> Creating new forms of re-investment funds using models such as community shares and Building Societies that harness the capital of households and local commerce for stable, long-term investments.</li> <li>• <b>Growing green collar employment:</b> Harnessing the potential of planned programmes to support diversification by local companies, apprenticeships to develop the skills base and inward investment by UK and international companies.</li> <li>• <b>Creating opportunities for entrepreneurship:</b> Grasping the opportunities to develop the products and services needed for the Community Green New Deal, ranging from diversification into new markets to the spin-out of ideas from Universities.</li> </ul>
Tackling climate change
<ul style="list-style-type: none"> <li>• <b>Creating greater certainty of delivery:</b> By working with the community to create the investment opportunities there will be greater certainty of delivering the high levels of take-up that will be needed for the Green Deal.</li> <li>• <b>Empowering communities to take action:</b> Harnessing the potential and benefits of communities in leading energy efficiency programmes and investing in renewable energy – whether at home, street, block or neighbourhood level.</li> </ul>

Source: *Adapted from the SHAP Beyond Decent Homes Standard (2009)*

## Section 2

# ***The proposed model: Local delivery, collective ambition***

*Here we set out the HCA and SHAP's proposed model for a Community Green Deal. Its premise is to achieve a sufficient critical mass of local delivery that when aggregated will be more than the sum of its parts - unlocking the economic development potential and enabling new sources of private finance to be levered in.*

### **2.1 The need for a community-scale green deal**

To date energy saving and existing stock improvement programmes have not realised their potential for carbon reduction. Instead they have tended to focus on a broader package of Decent Homes improvements and, for the most part, superficial improvements to private housing stock in Housing Market Renewal (HMR) areas.

To deliver the scale domestic carbon reductions required concerted programmes of investment in energy efficiency improvements and low carbon energy infrastructure will be required. The patchwork of progress in improving the 'thermal comfort' of properties will need to be consolidated into an approach that is focussed on whole neighbourhoods and communities.

This will clearly be more straightforward for social housing, with the potential to be driven by locally agreed standards. However, the introduction of private housing into the mix raises new challenges as the focus shifts from the fuel poor to the fuel rich.

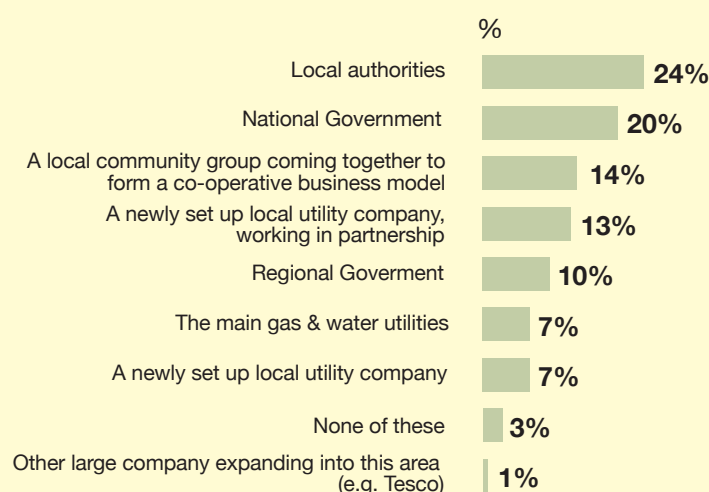
Although there are relatively few cross tenure existing stock improvement projects we can point to, those that have been successful clearly demonstrate the combined effect of area-based programmes with effective community engagement street-by-street to increase uptake. They have also highlighted the importance of trust and transparency in seeking to make new financial products available – particularly for vulnerable households.

'Green Streets' pilot projects, successive recipients of the Ashden Awards and emerging evidence from the Energy Saving Trusts Pay As You Save (PAYS) pilots have all highlighted the potential benefits of working at a community-scale. The benefits range from economies of scale to mutual support and encouragement to make changes and even to invest.

Trust will be a key issue in seeking to encourage households to take-up new and unproven financial products – which could include the need for a charge on their property - and to allow third parties to install and maintain equipment on their properties. Recent market research has revealed public attitudes to potential delivery partners, highlighting the potential for new forms of local delivery.

Figure 2.1

## Bodies trusted to deliver ‘sustainable community infrastructure’



Source: Green Building Council (2009) *Understanding consumer attitudes to ‘sustainable community infrastructure’*, Icaro Consulting and Ipsos MORI

## 2.2 How the model could work ‘on the ground’

The funding and delivery of community-scale refurbishment programmes is a complex challenge. To do it successfully a model is needed that works at a number of levels to address the needs of participating communities and funding providers, and to support investment in the supply chain.

Based on research we have identified four main challenges which the model would need to address:

- **Controlling cost:** Unless economies of scale (and concentration) can be achieved the cost of delivering programmes will be too high and additional Government subsidy will be needed. The model should therefore aggregate existing stock improvement programmes, enabling procurement processes to be standardised and partnerships with lead contractors developed.

- **Managing complexity:** Existing stock improvement programmes will need to be tailored to the distinct property archetypes found in each local area, and in response to the distinct concerns and aspirations of each local community. The model should therefore support communities to identify and design a replicable refurbishment ‘kit of parts’ which can then be used to build the supply chain.
- **Building trust:** The ability to fund refurbishment programmes will depend on the level of take-up by communities, and this will only be forthcoming if there is a good level of trust that the refurbishment will be carried out to a high standard and that everyone will share in the benefits. The model should therefore bring together trusted local partners to ensure the success of programmes.



- **Providing co-ordination:**

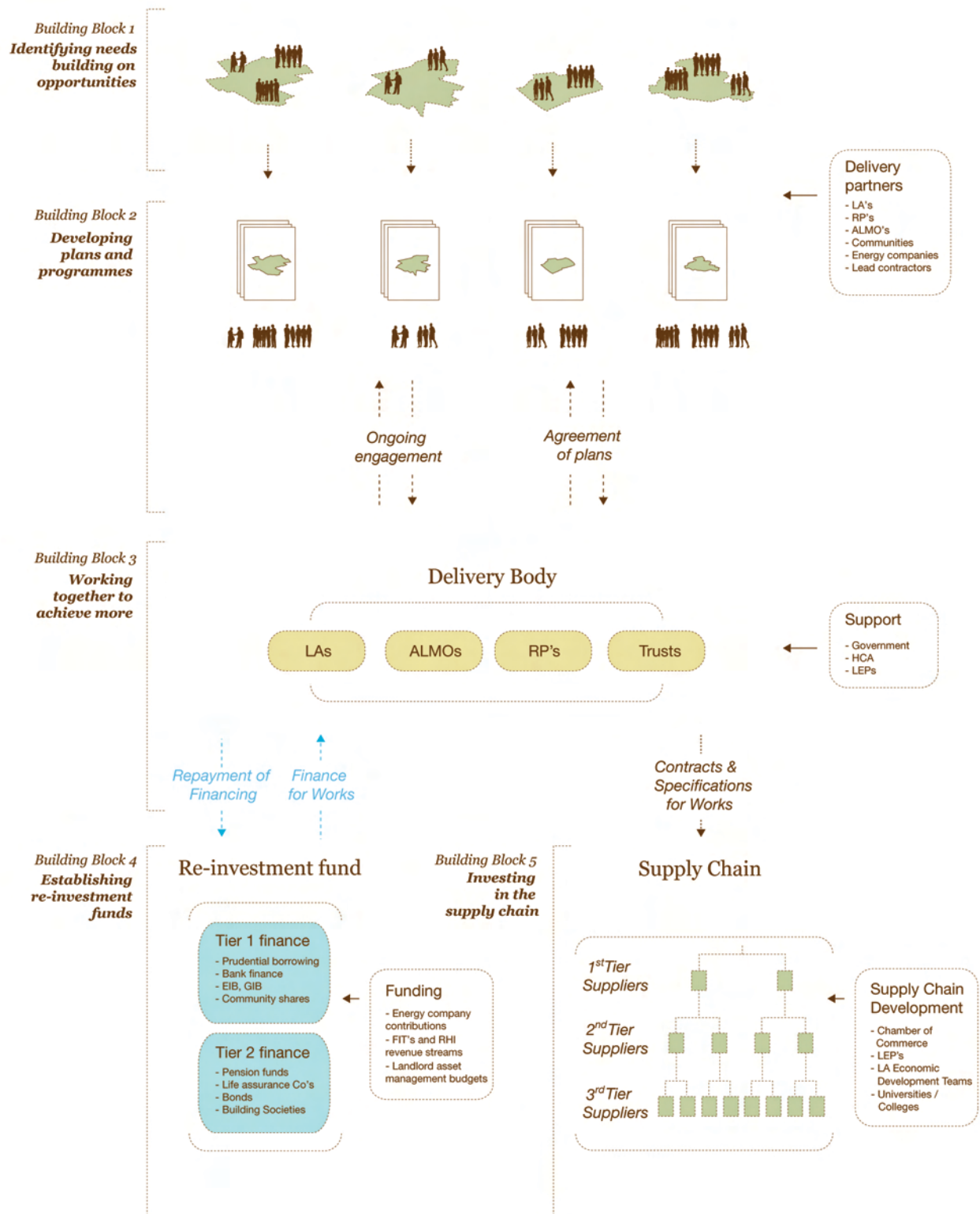
Comprehensive refurbishment programmes will by need to reach out to all tenures of housing, each of which creates different challenges. The model should therefore provide effective co-ordination in order to pool different sources of subsidy and manage contractual arrangements.

In response to these challenges we have identified the building blocks of an effective model for local delivery. The model would

work at multiple levels in order to mitigate the risks and streamline the delivery of programmes. In response to scarce public funding it would need to be lean on resourcing, wherever possible working through, or bringing together, existing delivery agents and local bodies.

*The five main building blocks are illustrated in Figure 2.2 over the page and in the next sections we describe how each of these building blocks could work in practice.*

Figure 2.2  
The Community Green Deal model



# *Building block 1* ***Identifying opportunities and needs***

*Marketing, arrangement, co-ordination and delivery of home energy saving programmes will by necessity have to take place in streets and neighbourhoods across communities. Community champions and trusted local delivery agents will be essential to reach out in order to identify the opportunities and needs, and to promote the benefits.*

Existing stock improvements and home energy saving programmes will need to be delivered ‘on the ground’ in local communities. Because it could involve significant disruption it will be essential to work directly with communities, rather than treating it as a large scale housing management exercise.

The process by which communities are engaged in the financing and delivery of works will underpin the Community Green Deal model. For instance, community champions together with local organisations could be directly involved in identifying the

opportunities and the needs for improvement on the ground.

Areas of focus would be agreed with the Local Authority and social housing landlords, reflecting the communities perspective on how improvements should be selected, targeted and marketed.

Community champions could be constituted into a Community Green Deal steering group or association to which delivery bodies would be accountable. This could be based on a set of model rules and structures

*Table 2.1*  
**Different perceptions of what a target ‘community’ is...**

From the point of view of people living there...	Neighbourhood, village, street or close
From a Local Government point of view...	Ward, regeneration framework or intervention area
From a Housing Managers point of view...	Estate, archetype or tenure
From a utilities point of view...	Super Output area, housing blocks or hard to treat properties

The chances of success with cross tenure programmes will be greatly improved if there is this support and ‘buy-in’ from the outset, and particularly if communities are involved in steering delivery.

Experience from pioneering projects such as Northmoor in Manchester and the Changing Streets programme in Goole shows this, highlighting the importance of engaging communities across tenures to design programmes.

By communicating the benefits and tailoring the response to local needs, programmes run more smoothly, achieving greater acceptance and delivering wider benefits such as increased improved quality of life, better health and increased property values. But this role can only be played by bodies that understand an area and can gain the trust of residents.

In Section 2.1 we highlighted the issue of trust and accountability in delivering improvements. This will be particularly important if households are being asked to take out loans for improvements, some of which may need to be secured against their home, or to repay a proportion of any savings. The issue of trust is also likely to colour peoples attitudes to:

- The technical solutions used for each house type,
- How the works will be managed and who they will be delivered by,
- Who will stand to benefit from any new income streams such as FiT's,

In order to be successful local delivery bodies will need to be able to respond to these issues in each community and neighbourhood. The experience from Decent Homes programmes is that, for example, financial products such as equity release are difficult to market, highlighting the importance of trust and transparency in how this is done.

*A potential process for local delivery has been developed by the SHAP partners and is described in Part 2, a Companion Guide of this report.*

*Appendix 1 also describes how the Community Green Deal might work in four example areas*

*Table 2.2*

**Pioneering community-scale projects**

Project	Archetypes	Delivery bodies	Key lessons
Northmoor, Manchester	Pre-1945 terraces	HCA, RP, Council	<ul style="list-style-type: none"> <li>Establish a mechanism to recover value from housing market uplift</li> </ul>
Lyng Estate, Sandwell	High rise flats Non-trad semi-detached	Council, ALMO	<ul style="list-style-type: none"> <li>Plan as part of an overall strategy to lift the quality of local housing</li> </ul>
Castle Vale, Birmingham	High rise flats Non-trad semi-detached	HAT, Community HA	<ul style="list-style-type: none"> <li>Use high specifications to deliver improvements that are tangible</li> </ul>
Plymouth Grove, Manchester	1965-1974 houses Medium rise flats	Council, PFI	<ul style="list-style-type: none"> <li>Integrate estate remodelling and new-build interventions</li> </ul>
Goole, East Riding	Pre-1945 terraces	HMR Pathfinder, Council	<ul style="list-style-type: none"> <li>Engage community organisations and residents street by street to build momentum</li> </ul>
Summerfield, Birmingham	Pre-1945 semi-detached	Council, RP	<ul style="list-style-type: none"> <li>Engage community organisations and schools to broaden the message</li> </ul>
Daneville, Liverpool	1945-1964 semi-detached	Transfer body	<ul style="list-style-type: none"> <li>Use retrofit to bring derelict properties and voids back onto the market</li> </ul>

Source: SHAP programmes 2008/2009

## *Building block 2*

# ***Developing plans and programmes***

*Communities, supported by their Local Authorities and other local delivery agents, funders and finance providers, take the lead in working up programmes to deliver the Community Green Deal. These plans will need to be tailored to local housing archetypes, using the community approach to make funding go further.*

A Community Green Deal plan would be the starting point for the delivery of investment and improvements programmes.

Communities, supported by their Local Authority and working with existing local delivery agents such as Arms Length Management Organisation's (ALMO's), Housing Associations and neighbourhood bodies, would take the lead in working up plans tailored to the distinct opportunities and needs identified by each community. Plans would represent a key activity for Local Authorities in seeking to meet their carbon budgeting targets.

Each plan would focus on a jointly defined community, or grouping of communities. This would most likely be at a ward level or lower – to be defined by local partners. A plan might comprise the following elements:

- **Community audit:** An initial survey and engagement exercise to gather information on the existing housing stock from tenants and residents and to understand local issues.
- **Archetype database and mapping:** Establishment of a database profiling and mapping the range of archetypes to be found in the plan area. The tenure of each archetype would be tagged along with details of the landlord where appropriate.
- **Socio-economic profiling:** The mapping would be overlain with socio-economic data, including household income, consumer group (such as Mosaic or Acorn classifications), house prices, housing turnover/residence time and tenure.
- **Detailed SAP modelling:** Detailed modelling of samples of representative archetypes would be carried out in order to assess their condition and performance, identify and cost packages of measures that could be deployed, and inform an asset management plan.
- **Asset management plan:** Development of an asset management plan to co-ordinate a programme to achieve 80% carbon reductions, starting with social landlords and extending support with asset management to private landlords and owner occupiers.
- **Implementation strategy:** Development of an implementation strategy in conjunction with communities and local delivery agents. The strategy would identify where local authority enabling powers might be used, for example to encourage and, if necessary, compel private landlords

Delivery of plans could be supported by initiatives such as the Regional Growth Fund and the New Homes Bonus as well as energy suppliers. Energy suppliers would be selected by Community Green Deal partners through a competitive process based on what they could contribute towards plans.

Plans should look to capture the long-term benefits to their areas and where possible recover any public subsidy through increased values.

Targeted spending has been shown to transform neighbourhoods and streets, with

benefits including increased property values, the attraction of people back to each neighbourhood, the tackling of poor housing and fuel poverty, and renewed community pride.

*A potential process for local delivery has been developed by the SHAP partners and is described in Part 2, a Companion Guide of this report.*

*Appendix 1 also describes how the Community Green Deal might work in four example areas*

*Table 2.3*  
**Scenarios for achieving buy-in and take-up from different tenures**

Blanket approach	‘Decent Homes 2’ programme led by ALMO’s and RP’s but requiring consultation with tenants.
Seeded approach	Pilots for whole house approach by each local housing provider in order to generate local interest.
Competition approach	Pilots provided to owner occupiers through local competitions as marketing for whole house approach,
Partnership approach	Local Authorities, ALMO’s and RP’s support ‘early adopter’ households and communities.
Demand-led approach	Loan support provided to ‘early adopters’ through local partners and the Superhome network.

Example Community Green Deal area  
**Birchills, Walsall**



<b>Socio-economic</b>	
Households	2,995
Average income	£400/month
IMD	Eligible for CESP (ranked 40 <sup>th</sup> )
<b>Tenure</b>	
Social rental	31%
Private rental	10%
Home ownership	55%
<b>Social landlords</b>	
ALMO	Walsall Housing Group
Registered Providers	Accord Housing Association
	Caldmore Area Housing Association
	WATMOS Community Homes
<b>Housing stock</b>	
Flats	25%
Terraces	43%
Detached/semi-detached	32%
<b>Housing market</b>	
Average house price	£110, 620
Average SAP rating	46

Source: Shared Intelligence (2009) *Building a new Birchills together*



## *Building block 3:*

# *Working together to achieve more*

*In order to achieve sufficient economies of scale to build the supply chain and bring down costs local housing providers will need to work together. This could in turn unlock opportunities for local economic development and enable long-term institutional finance to be used to fund programmes.*

Whole house energy saving improvements will not become affordable or bankable until sufficient economies of scale can be achieved.

In order to achieve this housing providers would come together to form joint ventures or mutual bodies with the aim of supporting the community-scale programmes – to include the delivery of Community Green Deal programmes and asset management support for private landlords and owner occupiers.

The aim of these Community Green Deal ‘delivery bodies’ would be to deliver programmes of whole house energy saving works in response to the opportunities and needs identified.

In order to facilitate this they would obtain financing (see Building Block 4) and develop the supply chain (see Building Block 5) on behalf of their members.

By working together Community Green Deal Delivery Body members, potentially supported by Local Authorities and Local Enterprise Partnerships (LEP’s), would have the potential to aggregate delivery programmes to mutual benefit in these two key areas:

- **Building the supply chain:** The market is not currently mature enough to support large programmes. In order to establish the supply chain, and realise the local economic development potential, sufficient certainty of demand will be needed in order for suppliers and installers to invest in their capacity,
- **Establishing Green Deal re-investment funds:** There will be a substantial gap in the funding needed for large programmes. New sources of private finance will be needed but it is unlikely this will be forthcoming on a sufficient scale or on favourable enough terms without engaging institutional investors such as pension funds.

ALMO’s in particular are well placed to deliver programmes because the frameworks for developing supply chains have already largely been demonstrated by Decent Homes programmes. They include procurement consortia, local labour agreements and partnering arrangements. These would need to be extended to include joint working with LEP’s and a range of partners to support Research & Development, industry diversification and reskilling programmes. We discuss the potential for this further under Building Block 4.

The mechanisms and structures to secure new sources of financing are less well understood and will require new thinking. The needs of institutional investors to de-risk programme delivery and identify a minimum size of investment suggest the need for joint working to aggregate Community Green Deal plans.

However we have also identified the potential for to develop sources of local or sub-regional ‘community finance’ – which could include local Building Societies and Community share and local bond issues. We discuss this concept further under Building Block 5.

*A potential process for forming Delivery Bodies has been developed by the SHAP partners and is described in Part 2, a Companion Guide of this report.*

*Appendix 1 also describes the potential role of Delivery Bodies in four example areas*

## *Building block 4:*

# ***Establishing re-investment funds***

*New sources of private finance will be needed in order to deliver large-scale, cross tenure Green Deal programmes. In order to attract the long-term, low interest finance that will be needed programmes will need to be de-risked and investment funds established based on a flexible combination of finance sources.*

In order to deliver the scale of domestic carbon reductions required private sector landlords and owner occupiers will all need to be engaged. Given the scale of the challenge and restrictions on public finances much of the finance to deliver cross tenure programmes will need to come from private sources.

There is a growing level of interest from finance providers in the Green Deal and micro-generation market, and a number of agencies in the West Midlands have initiated dialogue with institutional finance providers. Table 2.5 compares the potential different sources of finance.

Research completed by Encraft for Sustainability West Midlands has examined potential sources of finance and what would be needed to attract investment into this new market. It's key findings were that:

- Major investors currently perceive housing retrofit as being too complex and risky,
- Institutional funders such as pension funds will be unlikely to enter the market until they are confident it can deliver stable returns,
- The barriers to investment could be overcome if trusted local delivery bodies were able to de-risk investment opportunities by demonstrating:

- A track record in delivering programmes,
  - An ability to guarantee subsidies and revenue streams,
  - An ability to provide security (assets, income streams or subsidy)
- Institutional investors could initially enter the market as part of Public Private Partnerships, with the public sector underwriting some of the risk,
  - Involvement of the proposed new Green Investment Bank or the European Investment Bank could, provide co-financing.

With increasing restrictions on Government spending, including the activities of ALMO's and Stock Transfer bodies, new sources of private finance will therefore be required.

But while there is evidence of active interest from institutional investors in financing large-scale programmes there is, as yet, no proven model against which to give a credit rating, and not enough critical mass of activity from which to create an 'asset class' that meets the requirements of UK investors.

Experience from Private Finance Initiative (PFI) projects in the UK and Tax Incremental Finance (TIF) projects in the USA is that in order to attract large-scale private finance the model for project delivery first needs to be demonstrated. PFI and TIF did not become

rated as asset classes until pilot projects supported by the public sector had demonstrated that the risks could be effectively managed and stable returns delivered.

The proposed Green Investment Bank could play an important interim role. It is likely to be capitalised with £1bn of spending allocation together with additional proceeds from the sale of Government assets.

The HCA and SHAP believe that, based on supporting research by Encraft, Grant Thornton and Marksman, three broad forms of finance could be used to fund Community Green Deal programmes:

#### **Option 1 Prudential borrowing and bank finance**

The current preferred option which could form the basis for a number of large pilot programmes. Lending would be on a project finance basis, secured against the balance sheets of partners and contracts. Gap funding from CERT and ERDF could be used as additional security.

- Target number of properties: 5,000-10,000
- Finance provider: Prudential borrowing, Large Bank, Green Investment Bank, European Investment Bank
- Debt recovery: Local Authority or Registered Provider
- Security: CERT funding, Warm Homes, FiTs contracts
- Subsidy: ERDF

#### **Option 2 Community and mutual finance**

This option could take two main forms. The first could be community share or local bond

issues in order to finance community-scale solar photovoltaic installations, with revenues then re-invested in whole house improvements.

The second could be a form of Community Green Deal Building Society for households making energy saving improvements. This could initially be delivered through a partnership with existing societies because the startup capital required for a Building Society is £1m.

- Initial number of properties: 750 - 1,500 (or equivalent to £1m coverage)
- Finance provider: Member investors
- Debt recovery: Building Society, fund manager
- Security: CERT funding, Warm Homes, FiTs contracts
- Subsidy: ERDF

#### **Option 3 Pension funds and bonds**

Once the Community Green Deal has been rolled out and the risks and returns are better understood institutional investors will then have the confidence to provide finance, either directly to a Community Green Deal fund or by investing in local bonds issued by a fund.

- Target number of properties: 25,000 - 50,000
- Finance provider: Pension funds, Life Assurance companies
- Debt recovery: Local Authority or Registered Provider
- Security: FiTs contracts, Household Green Deal contracts

*A detailed financial model of how the Community Green Deal re-investment fund model could work has been developed alongside the proposed local delivery process described in Part 2 of this report.*

Table 2.5  
Comparison of potential sources of finance

Characteristics	Bond issue	Institutional finance	Governmental finance	Bank debt	Social financing	Private equity
<b>Description</b>	Capital generally raised from institutional investors	Pensions funds and Insurance companies	European Investment Bank and Green Investment Bank	Private investment banks (structured finance) and high street banks (personal loans)	Building societies, re-investment trusts, dedicated share issues and revolving funds	Private capital, mezzanine finance, subordinated loans
<b>Term of finance</b>	Wide range 5 to 50 years	Term matches lifespan of the asset, typically 5-25 years	Term can match that of matching financing	Up to 25 years	Defined by projects and mortgage terms	3 to 5 years
<b>Cost of capital</b>	1% to 5% over Gilt	0% to 10% over Gilt or EUROBOR	0% to 3% over Gilt or EURIBOR	1.5% to 10% over LIBOR	Dependant on project structure	4% to 15% over LIBOR
<b>Minimum investment</b>	> £50 million	> £200 million	£10m to £500m	up to £25 million	Variety of scales	Variety of scales

Source: Grant Thornton (2010)

## *Building block 5:*

# ***Building the supply chain***

*Cost effective delivery will require supply chain development in order to get the right products, at the right price at the right time. The market is still at a nascent stage in its growth, creating a significant opportunity to rebalance local economies by harnessing the investment potential of large scale programmes.*

In order to cost effectively deliver whole house improvements at a community-scale a mature supply chain will need to be developed for the whole house 'kit of parts'. This supply chain will need to be capable of bringing forward the right products and delivering volume orders into large programmes.

But the supply chain is not the just the commonly specified elements, it also consists of all the supporting components – many of which could be more readily made in the West Midlands. Table 2.6 provides an indication of the spread of components. The skilled trades necessary to carry out installation works on-site will also be vital, as will be the skills to maintain equipment and assets into the future.

Whilst the whole house market in the UK is forecast to grow rapidly over the next decade the opportunities this might create for the West Midlands manufacturing base are still poorly understood. The whole house improvement market is poised to expand rapidly and it will be important to move quickly in order to secure early competitive advantage.

Strategic alliances and mergers are already taking place in the sector, with utilities such as Eon and British Gas and social enterprises such as EAGA acquiring stakes in

manufacturers, distributors and installers. Procurement consortia with enough critical mass are also exploring the potential to acquire or even establish manufacturing and installation businesses.

By working together local housing providers have the potential to aggregate their demand for products and services. Procurement consortia such as Fusion21 and GM Procure and in the West Midlands' the Central Housing Investment Consortium have already demonstrated the benefit of working together to streamline procurement processes and develop local supply chains. Specialist training organisations such as PM Training that are linked to housing providers' contracting arms could also play a role.

By working with LEP's and by accessing support from the Regional Growth Fund and Business Growth Fund this approach could be taken a step further. The certainty created by large programmes could be used to stimulate investment and create demand along the supply chain. Our research suggests that this focus on, amongst other themes, entrepreneurial skills to support diversification and testing and accreditation in order to bring new products to the market.

Table 2.6

**Indicative Community Green Deal supply chain**

Element	Tier 1 components	Tier 2 components	Tier 3 components
1. Fabric improvements	<ul style="list-style-type: none"> <li>• Internal and external insulation - walls, floors and loft</li> <li>• Window units</li> <li>• Doors</li> </ul>	<ul style="list-style-type: none"> <li>• Rainscreens and renders</li> <li>• Cladding rails and fixings</li> <li>• Window thermal breaks</li> <li>• Warm edge spacers</li> </ul>	<ul style="list-style-type: none"> <li>• Window and door junctions</li> <li>• Seals and tapes</li> <li>• Drainage goods</li> </ul>
2. Fit-out	<ul style="list-style-type: none"> <li>• Water saving fixtures</li> <li>• Appliances</li> <li>• Lighting</li> </ul>	<ul style="list-style-type: none"> <li>• LED/CFL shades and recesses</li> <li>• Voltage regulators</li> </ul>	
3. Energy supply	<ul style="list-style-type: none"> <li>• Solar thermal collectors</li> <li>• Solar photovoltaic modules</li> <li>• Biomass boilers and stoves</li> <li>• Air and water heat pumps</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-insulated pipes</li> <li>• Thermal storage tanks</li> <li>• Inverters and power regulation</li> <li>• Ducts and filters</li> </ul>	<ul style="list-style-type: none"> <li>• Ancillaries and control systems</li> <li>• Roof mountings and fixings</li> <li>• Module frames and casings</li> </ul>
4. Monitoring and awareness	<ul style="list-style-type: none"> <li>• Heat meters</li> <li>• Smart meters and monitors</li> <li>• Home energy management and control systems</li> </ul>	<ul style="list-style-type: none"> <li>• Sensors and remote monitoring</li> <li>• Software and user interface</li> </ul>	

Table 2.7 illustrates how this approach is being explored by the SHAP 2010 programme, highlighting the potential role of LEPs together with local partners to use their local knowledge to identify opportunities for training, diversification, inward investment and R&D.

Whole house improvements require skilled trades to get it right. Skills shortages in the construction industry will therefore need to be addressed. Ongoing concerns within the construction industry highlight the importance of programmes such as those being delivered by Construction Skills through the West Midlands Centre for Constructing Excellence, and by local partners in the West Midlands

such as Wolverhampton and Walsall Colleges which have been establishing Green Skills programmes. Apprenticeship programmes have also already been demonstrated by SHAP partners such as Sandwell Homes.

*An investment framework for supply chain and skills development has been developed by the SHAP partners and is presented in Part 3 a Companion Guide of this report.*

*Appendix 2 presents ten opportunity areas for supply chain development alongside the framework.*



Table 2.7

**Example linkages between  
Community Green Deal areas and  
LEPs**

Example Community Green Deal area	Example supply chain opportunity area	Potential local partners
Northfield, Birmingham	Longbridge AAP, Greater Birmingham LEP and its partners, diversified car supply chain companies	<ul style="list-style-type: none"> <li>• Birmingham City Council</li> <li>• Family Housing Association</li> <li>• Localise West Midlands</li> <li>• South Birmingham College</li> <li>• Bourneville College</li> <li>• St Modwens</li> </ul>
Birchills, Walsall	(Proposed) Black Country LEP area	<ul style="list-style-type: none"> <li>• Black Country LEP</li> <li>• Think Walsall</li> <li>• Walsall Housing Group</li> <li>• Accord Housing Association</li> <li>• WATMOS Community Homes</li> <li>• Wolverhampton University</li> </ul>
Middleport and Longport, Stoke-on-Trent	Chatterley Valley investment sites and the Stoke-on-Trent and Staffordshire LEP area	<ul style="list-style-type: none"> <li>• North Staffordshire LEP</li> <li>• RENEW North Staffordshire</li> <li>• Moorlands Harvest Housing</li> <li>• Stoke-on-Trent College</li> <li>• Staffordshire University</li> </ul>
Rural towns, Shropshire	Herefordshire, Telford and Shropshire LEP area	<ul style="list-style-type: none"> <li>• Shropshire, Telford and Herefordshire LEP</li> <li>• Shropshire Housing Group</li> <li>• Shropshire Council</li> <li>• Shropshire Chamber</li> </ul>

## Section 3

# How it could be paid for

*The cost of rolling out comprehensive retrofit programmes will be substantial, initially in the range of £16,000 to £34,000 per property for a programme based on at least 1,000 properties. However our analysis suggests that if structured correctly Community Green Deal programmes should be capable of providing a return on investment.*

### 3.1 Combining the investments and structuring the income

Community Green Deal programmes will need to combine investments in whole house fabric improvements, micro-generation technologies on individual homes and communal infrastructure supplying whole communities. Each element has different associated rates of return, some of which are more attractive than others.

However by taking a structured approach, spreading the costs over 15-25 years as part of an asset management plan and combining a number of income streams it should be possible attract low cost, long-term finance. The four key revenue streams that will need to be employed are:

- **Grant:** CERT, CESP and, in the future, ECO funding from suppliers, Warm Homes funding from Government and potentially also ERDF provide reliable sources of funding which can be focussed on more vulnerable households.
- **Subsidy:** The introduction of Feed-in Tariffs (FIT's) for technologies such as solar photovoltaic's and the proposed Renewable Heat Incentive (RHI) are designed to generate an attractive return which can be used to cross subsidise other elements;

- **Energy sales:** Low carbon infrastructure such as CHP, biomass boilers, communal solar thermal and district heating can be financed by capitalising future energy sales and standing charges to tenants and residents;
- **Repayments:** Households would make repayments based on the value of energy savings they make in order to fund improvement works and installs.

These repayments would be capitalised in order to service 'Green Deal' loans, delivered in accordance with the Government's 'Golden Rule' that the value of the loan repayments must never exceed the savings delivered to the household.

This could take the form of a non-qualifying service charge added to social housing rent or a Green Deal contract for owner occupiers;

In Table 3.1 below we summarise the findings from initial analysis by Encraft and URBED of the rates of return that could be achieved for whole house improvements using two main revenue streams to pay for works - the Feed in Tariff and Green Deal repayments . The rates of return are without the input of any grant, which would of course improve the return.

The costs and returns are illustrative and demonstrate the influence of housing density on the returns. The capital costs are based on the evidence base for the 2009 Beyond Decent Homes Standard and broadly correlate with costs being achieved for Retrofit for the Future projects.

In addition to the four revenue streams we have identified, the value of equity is also likely to play a role in securing finance. A number of models such as West Midlands Kick Start and Kirklees ‘Re-charge’ solar loans use second charges on a property to service debt. The use of land trusts to capture any rise in values from improvement programmes is another option.

In order to reduce risk and achieve lower borrowing rates it is proposed that the Community Green Deal repayments are calculated based on deemed payments weighted to average local energy use. Payments would be collected by an accountable body within the Community Green Deal Delivery Body e.g. a Local Authority or a social landlord.

Where households have equity this could be used to underwrite loans until the point where the investment fund(s) had the strength to provide unsecured lending.

*Table 3.1*  
**Indicative costs and returns for whole house improvements**

	Archetype 1 Medium rise flats	Archetype 2 Pre-1945 terraces	Archetype 3 1945-1964 semi-detached
<b>Capital cost</b>	£23,000	£25,500	£31,000
<b>Rate of return</b>			
50% ‘pay as you save’ + FiT’s	4.0%	2.0%	1.0%
100% ‘pay as you save’ + FiT’s	6.8%	3.5%	3.7%

Source: Encraft *and* URBED (2010) based on 25 year term and 2009 prices (exclusive of VAT)

### **3.2 Making better use of the supplier obligations**

While the HCA and SHAP partners are actively seeking to use CERT, CESP and ECO funding they have identified a number of practical problems if it is to be used to underwrite community-scale programmes:

- **Cherry-picking:** The utilities prefer to, and in fact are encouraged to by the regulatory framework, cherry pick the easiest and cheapest opportunities for carbon reduction such as loft and cavity wall insulation, external cladding of apartment blocks, solar photovoltaics and biomass boilers.
- **Restrictive boundaries:** The Community Energy Saving Programme (CESP) is intended to pilot community-based retrofit but in practice the use of Super Output Area boundaries can draw a line through communities and exclude many deprived areas of rural communities.

- **Self-supply chains:** There is increasing evidence that the utilities are gearing up to bring the supply chain for retrofit in house, with partnerships and acquisitions being used to recycle profit from their investment, the consequence of which may restrict the potential for local economic development.

So while supplier and generator obligations will undoubtedly have a role to play, an arrangement is needed that is more responsive to local priorities, with subsidy potentially used as working capital for Community Green Deal programmes.

In turn utilities and generators could be offered a low £/tonne of CO<sub>2</sub> based on the economies of scale and the benefits of cross subsidising fabric improvements with micro-generation

### **3.3 The Community Green Deal financial model**

The proposed financial model for the Community Green Deal is based on a structured approach. Delivery bodies would spread the costs of investments over 15-25 years as part of a series of asset management plans, combining a number of revenue streams. Figure 3.2 describes the financial model and the relationship between the different partners.

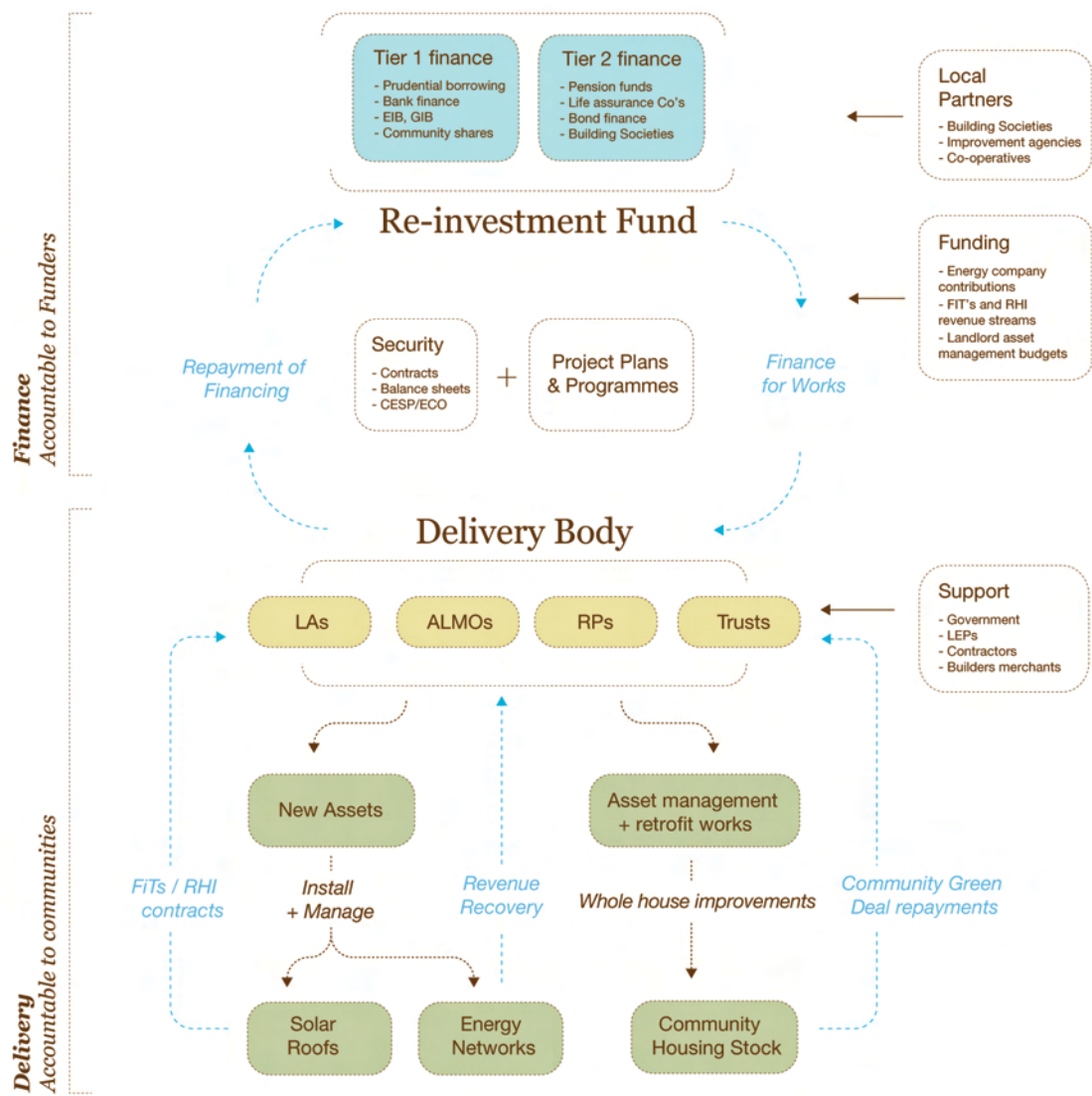
Community Green Deal delivery plans would be aggregated and structured in order to attract low cost, long-term finance, with re-investment funds established at local, sub-regional or regional scale to manage a number of possible sources of finance.

Fund management would either be appointed by the finance provider(s) or could be assigned to suitable accountable bodies potentially including local Building Societies.

It is proposed that Community Green Deal Delivery Bodies administer Green Deal contracts and collect repayments, as they are well placed to manage this. Delivery bodies may initially have to guarantee this income stream, which in turn would be used to secure finance. The risks associated with the collection of repayments from owner occupier households will need to be understood and carefully managed.

*A detailed financial model of how the Community Green Deal re-investment fund model could work has been developed alongside the proposed local delivery process described in Part 2 of this report.*

Figure 3.2  
The Community Green Deal financial model



## *Section 4*

# ***Policy recommendations***

*Here we summarise the five Building Blocks of the Community Green Deal model and highlight a number of specific areas in which the Coalition Government could support implementation of the Community Green Deal model.*

*They are for the most part strategic and regulatory in nature, seeking to align this agenda with mainstream programmes, rather than creating new requirements for funding.*

### *The ‘Community Green Deal’ delivery model*

	Building block 1: Identifying opportunities and needs	Building block 2: Developing plans and programmes	Building block 3: Working together to achieve more	Building block 4: Establishing re-investment funds	Building block 5: Investing in the supply chain
<b>Aim</b>	To identify opportunities for home energy saving and low carbon infrastructure at street, estate and neighbourhood level.	To work up long-term delivery plans and programmes adapted to community needs and local archetypes.	To bring together delivery partners in order to finance and deliver Community New Deal plans to the mutual benefit of communities.	To provide low cost, long term finance for project delivery with a preference for financing models that facilitate local re-investment and ease of re-financing.	To reduce the costs of plans and programmes and to deliver local economic development through structured investment in the supply chain.
<b>Functions</b>	Communities and local deliver partners work together to understand the local housing stock and identify the opportunities and needs for investment.	Communities supported by Community Green Deal delivery partners (to include LA's, ALMO's and RP's) work up plans and programmes to invest in energy saving and energy infrastructure.	Creation of accountable Delivery Bodies for Community Green Deal programmes and funding using joint venture or mutual society structures. Their founding members to be Community Green Deal delivery partners.	Establishment of a series of Community Green Deal funds geared to the needs of projects and based on a flexible combination of grant and subsidy, as well as public, private and community finance.	Development of joint product specification and procurement strategies by Community Green Deal delivery partners geared to specific local capabilities.



	Building block 1: Identifying opportunities and needs	Building block 2: Developing plans and programmes	Building block 3: Working together to achieve more	Building block 4: Establishing re-investment funds	Building block 5: Investing in the supply chain
<b>Partner roles</b>	<ul style="list-style-type: none"> <li>Existing local bodies to serve as 'community champions'</li> <li>Local Authorities and social housing providers to provide technical support</li> <li>HCA to provide access to best practice</li> </ul>	<ul style="list-style-type: none"> <li>Existing local bodies to serve as 'community champions'</li> <li>Community Green Deal delivery partners provide technical support (see Building Block 3)</li> <li>HCA to provide support as required</li> </ul>	<ul style="list-style-type: none"> <li>Local Authorities and social housing providers as founder members</li> <li>Local Authorities and social housing providers contribute capital spending allocations and funding</li> <li>Utilities discharging their obligations</li> <li>HCA to provide support where required</li> <li>Local Enterprise Partnerships to provide strategic support</li> </ul>	<ul style="list-style-type: none"> <li>Community New Deal accountable body/ members</li> <li>Finance partners and/or accountable body provides fund management</li> <li>Utilities discharging their obligations</li> <li>Communities providing equity investment</li> <li>Capital funding provided by banks, pension funds and community shares</li> <li>Existing Local Building Societies, Kick Start Partnerships and Credit Unions as potential local partners</li> </ul>	<ul style="list-style-type: none"> <li>Local Enterprise Partnerships to support strategic investment opportunities</li> <li>Procurement Consortiums where they align with partners housing providers</li> <li>Lead contractors to ALMO's and/or Community New Deal organisations</li> <li>Chambers of Commerce</li> <li>Universities and Colleges</li> </ul>

	Building block 1: Identify opportunities and needs	Building block 2: Develop plans and programmes	Building block 3: Work together to achieve more	Building block 4: Establish re-investment funds	Building block 5: Invest in the supply chain
<b>Recommendations going forward</b>	<ul style="list-style-type: none"> <li>• Support for communities to be provided by the 'Big Society' programme,</li> <li>• Prioritising of opportunities for cross subsidy of low carbon refurbishment using revenues from FIT/RHI</li> </ul>	<ul style="list-style-type: none"> <li>• Support for pilot plan preparation by Community Green Deal delivery partners working with the HCA</li> <li>• Support for locally agreed targets and standards to drive investment, with funding provided in the form of revolving loans</li> <li>• Requirement for private landlords to participate in Community Green Deal programmes.</li> </ul>	<ul style="list-style-type: none"> <li>• Support the role of Local Authorities and social landlords in delivering the Green Deal for communities and other providers</li> <li>• Relax restrictions on the ability of ALMO's to raise private finance</li> <li>• Support the development of common contracts and procurement frameworks</li> <li>• Support for the development of model structures for Community Green Deal delivery bodies</li> </ul>	<ul style="list-style-type: none"> <li>• Local Authorities continue to be able to access PWLB</li> <li>• Work with partners to support community investment schemes.</li> <li>• Confirmation that CERT and CESP will continue up to and beyond 2020</li> <li>• Design ECO so that subsidy can be used as working capital for programmes</li> <li>• The Green investment bank to provide community-scale finance,</li> <li>• Improve ease of access to ERDF funding</li> </ul>	<ul style="list-style-type: none"> <li>• Align Community Green Deal with LEP objectives and the Regional Growth Fund</li> <li>• Consider the potential for LEP's to invest in Community Green Deal supply chain frameworks</li> <li>• Support the provision of business support and advice through the Business Growth Fund</li> <li>• Facilitate collaboration between education and training providers to provide reskilling</li> </ul>