

# *A co-operative green economy*

**New solutions for energy and sustainable social justice**

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## Acknowledgements

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## Co-operatives UK

Co-operatives UK works to promote, develop and unite co-operative enterprises. It has a unique role as a trade association for co-operatives and its campaigns for co-operation, such as Co-operatives Fortnight, bring together all those with a passion and interest in co-operative action.

Any organisation supportive of co-operation and mutuality can join and there are many opportunities online for individuals to connect to the latest co-operative news, innovations and campaigns. All members benefit from specialist services and the chance to network with other co-operatives.

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## Foreword

Co-operatives in the UK and internationally have a proud tradition of providing positive solutions to some of our most pressing social and environmental challenges, and in low carbon energy and energy reduction we are beginning to see a groundswell of action.



People come to co-operative solutions from different routes, whether it be through a Transition Town initiative or other local carbon reduction groups, or as professionals such as architects, community finance specialists and housing professionals who see democratic, people-based enterprise as a more socially and environmentally sustainable model of business. What unites us is a shared belief that people, not pounds, should and have to be at the heart of a transformation in the way we generate and use energy.

Co-operatives UK has a unique role as a trade association for co-operatives and our campaigns for co-operation bring together all those with a passion and interest in co-operative action. Of our three main aims – to promote, unite and develop co-operative enterprise in the UK – the 'develop' reflects our role of providing the space to think and plan strategically about where we are now, and where we go next, as a movement.

One of the focus points for this is the Co-operative Business Development Panel, a nominated group of individuals from across the co-operative movement which seeks to promote and aid the development and growth of co-operatives in new fields and in new areas of the economy.

To explore the potential for co-operative solutions for renewable energy and household energy reduction, Co-operatives UK with the support of the Co-operative Business Development Panel has convened a round table of practitioners and commissioned this independent report. This report is designed to identify good practice and point to emerging opportunities for co-operative and social enterprise development. We hope it will provide a source of inspiration and guidance for anyone with an interest in practical solutions and policy options for sustainability and social justice.

Ed Mayo,  
Secretary General, Co-operatives UK

## Introduction

Since the 1990s a promising undercurrent of co-operative energy services has been developing internationally. This encouraging development is now feeding a healthy and rapid growth in some countries of community and co-operative ownership of energy services – especially in relation to local sources of supply such as district heating, combined heat and power (CHP) and renewable energy (wind, solar, biomass and biogas). Denmark, Sweden and Germany have led these developments and now other European countries are moving in this direction.

In the UK wind energy co-operatives and community owned CHP are developing steadily and taking on board lessons from northern European countries. The Climate Change Act 2008 established the Department of Energy and Climate Change and set up binding carbon reduction budgets. This work by the last Labour government has been further developed by the Coalition through the Renewable Heat Incentive and the Green Deal proposals. Action on carbon reduction and support for community energy projects is also high on the agenda of the Scottish Parliament, the Welsh Assembly and the Northern Ireland Housing Executive.

The government's target of a 34 per cent national reduction in carbon emissions by 2020 is a daunting challenge. There is no precedent for such a reduction. The 2006 Stern report highlighted that only annual reductions of one per cent have been achieved in periods of severe economic downturn.

The UK track record has been going in the opposite direction as national emissions have actually increased by 17 per cent since 1990.<sup>2</sup> Stern's latest estimate is that an annual investment of two per cent of GDP will be needed to stabilise emissions. In the UK this would currently be a £28 billion yearly investment.

The Coalition promises to be the "greenest government ever" and the Energy Security and Green Economy Bill's Green Deal sets out an ambitious vision and a range of new measures for a low-carbon future. There appears to be scope for many different approaches to cutting carbon and to tackle other government goals to reduce fuel poverty.

The co-operative and mutual sector has a strong history of innovation in the field of community energy. Do the new programmes provide a springboard for scaling up the provision of co-operative energy services?

To investigate this strategic opportunity, Co-operatives UK convened an expert round table event on 18th November 2010. This paper provides a summary of the findings from this consultation event and offers as well an outline strategy of how different forms of co-operative energy services could be developed in the UK – particularly in relation to renewable energy and housing retrofit<sup>1</sup> work.

A number of good examples of co-operative and mutual energy services are provided from England, Scotland, Wales and Northern Ireland. The argument made is for the development of a sustainable social justice strategy with a dual focus on ways and means to link up co-operative and mutual solutions to cut carbon and to reduce fuel poverty.

### **Action Research Case Study: Community Energy**

The Co-operative Group and Co-operatives UK are joining forces to work on a new piece of research to support the development of community renewable energy in the UK. The research – *Community Energy* – has been commissioned by The Co-operative Group in direct response to the renewable energy practitioner round table held at Co-operatives UK's offices in November 2010, and on which this report builds.

With increasing levels of local innovation in the field of community renewable energy, the research project will involve working in partnership with existing renewable energy co-operatives to examine current practical and policy challenges.

The action research project, *Community Energy*, which will be completed in March 2012, will address the urgent need to understand how to support new co-operative and community-owned initiatives to network, share learning and develop a coherent voice in the energy policy debate.

Paul Monaghan, Head of Social Goals and Sustainability at The Co-operative Group, said:

"The UK has challenging carbon reduction targets and to meet these we need collective solutions.

"Through our support for community renewable energy groups we know that there is huge commitment to finding locally owned solutions to climate change. It is important that the co-operative sector works together to understand how these groups can be encouraged and supported."

## The success of co-operative energy services internationally

As we look forward to what a fully developed co-operative energy services sector might look like in the UK, it is important that we take stock of the many international success stories built on the co-operative model.

The capital requirements for co-operative energy supply businesses involve large infrastructure costs. In Scandinavia and the USA, innovative partnerships with government have supported the development of co-operative energy services in two specific areas:

- to meet the higher cost investment requirements of rural communities
- to develop decentralised forms of energy generation and supply.

The lessons from this joint venturing experience with the public sector are important to consider for their potential applicability to the UK in the twenty-first century – specifically in relation to the challenges ahead to cut carbon emissions year on year and to reduce rising levels of fuel poverty.

Utility co-operatives have been especially successful in Scandinavian countries with Denmark and Sweden pioneering electricity co-operatives over a century ago and Finland taking a lead to develop phone co-operatives.<sup>2</sup>

The success of Denmark in becoming within a generation the most energy secure country in Europe stems from a unique set of policy decisions that moved the country to a distributed supply system. In the mid 1970s many countries strategically reviewed their national energy policy in the wake of the Opec Oil crisis. France decided to invest strategically much more in nuclear power through the highly centralised, national structure of EDF.

Denmark moved strategically in the opposite direction. The plan they implemented has steadily led to a decentralised model of energy services based on both offshore and onshore wind energy and more efficient localised forms of energy generation and heat capture including district heating, Combined Heat and Power (CHP) and biogas. Community, co-operative and joint venture municipal and co-operative ownership structures in Denmark have steadily been developed over the past thirty years as an accountable and democratic system for co-financing, dispersing and localising both energy generation and supply grids.

In Britain energy supply services developed in a different way that marginalised the opportunity for energy co-operatives.

The UK adaptation in the late 1970s was in fact initially a two-pronged plan. At the time, the Callaghan government decided to invest more in nuclear energy but also formulated a Marshall Heat Plan to develop a local heat market based on ambitious CHP investment plans - beginning in the largest cities, including Birmingham, Manchester, Leeds, Sheffield and Glasgow.<sup>3</sup> This plan was not pursued by the incoming Thatcher government, and in the early 1980s, additional proposals for Britain to develop the nation's unrivalled wind and wave energy potential were not taken up as the market in North Sea oil and gas expanded.

Co-operative energy systems are tailor made for decentralised systems of delivery. In countries where co-operative energy solutions have thrived, they have succeeded by tackling energy supply problems where private sector investors cannot secure a commercial rate of return because the capital investment requirements are too high and the price the energy market will bear is too low. In the USA it was apparent to President Roosevelt in the 1930s that rural areas could not be electrified and unemployment overcome without a partnership approach. Roosevelt sent a task force to Scandinavia to study rural electricity co-operatives.<sup>4</sup>

The solution introduced in 1935 under the New Deal legislation was a joint venture between the US government and a new network of rural electricity co-operatives that were given access to low cost quasi-equity finance. To develop this social economic model and to create rural employment, the government provided access to low-interest public loans, initially for ten years. In 1944 this subsidised finance was extended and fixed at 2% over 25 years.<sup>5</sup> This patient financing enabled a multi-state network of rural power supply co-operatives and rural distribution co-operatives to collaborate to build the mutual systems and infrastructure to deliver energy services across rural America.

Today over 900, mainly rural, energy co-operatives own 40% of national power lines and provide light and power to 42 million people in 47 states.<sup>6</sup> 11% of the power supplied is from renewable energy sources. Most of these energy co-operatives are members of Touchstone Energy, a co-operative federation founded in 1998.

Rural electricity, renewable energy and CHP all have high upfront capital costs and longer-term rates of return on investment. Co-operative organisations in partnership with local authorities and other public sector bodies can address this issue by seeking patient capital from their consumer owner members and from other sources.

Co-operatives UK collaborated in 2004 with the Department for Trade and Industry to research the success of the energy co-operatives sector in Denmark and Sweden. This study revealed four key factors underpinning the popular and growing success of co-operative and community-driven energy services in Scandinavia.<sup>7</sup>

1. Support to communities from technical advisors and practitioners to transfer know-how.
2. Commitment of government and local authorities to community involvement and ownership models and to a co-operative approach with many small units of delivery.
3. Education and information to promote public familiarity with the range of co-operative structures and energy services.
4. Multiple bottom line perspective to develop a public consensus that the price of energy should not be the only driver of energy policy.



### **International Case Study: Toronto Renewable Energy Co-operative**

In 1998, the newly incorporated non-profit Toronto Renewable Energy Co-operative was in the midst of an ambitious undertaking never before tried in Canada: to build a community-owned wind energy project in urban Toronto, Ontario. Although already a fact of life in countries like Denmark and Germany by the late 1990s, the idea seemed uncomfortably foreign to many Canadians.

Today, Toronto's downtown skyline boasts an idiosyncratic image in the form of a 750 kW wind turbine. Structured as an equal joint venture between the Windshare Energy Co-operative and Toronto Hydro, the project was innovative on a different level altogether. Once the turbine project was completed and connected, interest came from all over Ontario and North America about how to replicate this model. TREC continued to grow starting LakeWind, a 10 MW wind farm outside Toronto, and SolarShare, a large SolarPV project west of Toronto.

The TREC Board, recognising what they had created, set out to establish a new entity that could represent the interests of these emerging initiatives, whilst helping guide their activities. Thus out of TREC emerged OSEA, the Ontario Sustainable Energy Association, an umbrella organization that represents the interests of small renewable energy developers and pushes policy to assist the development process. OSEA later went on to inform the feed in tariff model used in Ontario's Green Energy Act, the most robust and ambitious green energy legislation in North America.

TREC now is taking its experience and lessons to other co-operatives across Ontario and Canada. The co-op is creating a series of TREC Services dedicated to the set-up and management of new and existing renewable energy co-operatives. By offering legal and financial templates/models and software developed for managing co-operative members and securities, TREC hopes to prevent co-operatives from reinventing the wheel. TREC's goal is to help renewable energy co-operatives focus their resources on expanding their projects instead of administration and member management.

[www.trec.on.ca](http://www.trec.on.ca)

## Summary of round table event findings

The round table event convened by Co-operatives UK and the Co-operative Business Development Panel brought together over 30 national experts in the co-operative and mutual sector, including a range of organisations working in the fields of renewable energy and housing retrofit.

A key purpose of the event was to explore what roles the co-operative sector plays now – and could play in the future – in shifting models of energy production, supply and use through collective, collaborative solutions.

### Strengths and weaknesses of co-operative energy now

The discussion focused initially on identifying the current strengths and weaknesses of the co-operative sector's delivery of renewable energy and housing retrofit measures. Below is a summary of the key findings:

Strengths	Weaknesses
Specialist knowledge and innovative practitioner networks in some areas of energy services	Lack of focus, cohesion and direction – fragmented effort by small organisations that is too slow to make a difference
The co-operative brand and over 10 million members – plus lobbying and campaigning skills	Lack of co-ordination, forums for communication and back office help
Developed models for community renewables, advice and support, legal structures, volunteer involvement, share raising, Greener Together, etc	Lack of infrastructure to scale up, lack of common standards along with isolated good practice and poor replication
Trust in co-operatives and mutuals and growing interest in community based schemes	Lack of mechanisms to avoid unnecessary competition
Sources of finance capital and models for raising funds ethically and socially – Co-operative Financial Services, Co-operative and Community Finance, Plunkett, Energy4All, etc.	Lack of joined-up systems for retrofit work
Allied bodies such as Friends of the Earth, TCPA, Renewable Energy Association, Transition Network and Low Carbon Communities Network	Lack of funding models for small co-operatives, for retrofit work and poor access to development finance. Lack of methods for raising construction finance
Democratic and participative structures for communities and growing track record in other fields: Supporters Direct, Making Local Food Work, etc	Lack of awareness in the UK of the potential of co-operative and mutual models – low profile and poor image holding things back

## Opportunities

Small group discussions explored the question: What are the opportunities and the priorities for action?

This discussion elicited a diverse range of thoughts and suggestions around key market development issues faced by the co-operative sector. The key issues are market entry gaps, positioning, opportunities and niche areas for targeted development. The findings were:

Opportunities - market entry and positioning
<p><b>Co-operative alternative</b> Energy companies are not trusted and are more unpopular with consumers than banks.</p>
<p><b>Negawatt model</b> Energy companies have a commercial interest in energy supply and not in energy savings – a co-operative business model focused on cutting energy as a priority alongside green generation could be a unique offering.</p>
<p><b>Democratic energy services provider</b> An attractive 'Unique Selling Point' with most of the big six energy companies being foreign owned and otherwise remote.</p>
<p><b>Selling and procurement</b> Specialist consortium assistance to co-operatives and social enterprises, public sector bodies and social housing organisations.</p>
<p><b>Integration of local energy services creatively</b> Retrofit and renewable energy.</p>
<p><b>Open source model</b> To equip local communities with off-the-shelf templates and documents</p>

### Opportunities – markets and niche areas

<p>Research and design consultancy Hydro, solar, biomass and anaerobic</p>
<p>Co-operative model and accreditation for installers Solar photovoltaic, wind, retrofit, etc.</p>
<p>Specialisation in effective retrofit packages for the fuel poor (low and moderate income groups)</p>
<p>Co-operative development finance mechanisms – for renewable energy and housing retrofit</p>
<p>Co-operative maintenance service for renewables sites</p>
<p>Specialist and accredited advisory and information service network</p>

There was a consensus that the strategic issues are how the co-operative movement can enter and develop the market for green energy services, and how existing local enterprises can be better co-ordinated and supported. With regard to green energy services, now is the critical time to develop a winning strategy and an effective plan of action. The priorities focused on how to link the key elements to a robust system for up scaling a broad range of services to meet the needs of both households and organisations. A number of the key suggestions were made about where to begin the work:

- **Social landlords:** working with this sector provides an opportunity to develop a model and services that can effectively address the rising fuel costs of their tenants and to achieve a model(s) that can tackle fuel poverty problems. A start can be made with the housing co-operative sector. Services could include: bulk buying, advice and consultancy and technical assistance.

- District heating and CHP: distributed energy services that are linked with co-operative and community governance structures. This market and micro-grids should grow.
- Builders and Installers: scope for establishing a federation of solar panel installers as a co-operative, wider range of training and skill development opportunities and accreditation/certification.
- Central co-operative service: for information provision, co-ordination, bulk buying and back office services for consumer groups and smaller co-operatives and social enterprises.
- The final discussion considered: How are we going to achieve our goals and what might a road map look like?

### Priorities for action

The participant groups brainstormed a wide range of ideas, drew up a list of the key ones and voted for their priorities. These fell into three main categories and the voting preferences and favoured next steps were as follows:

#### Co-ordination and collaboration services

National information sharing service ★★★★★

Provision of legal agreements ★★★★★

Support to replicate local projects ★★★★★

Community share issues – linking up, networks for good practice, validation of environmental return, underwriting by larger investors ★★

Establishing working groups to address specific issues ★

Access service for feasibility work and advice ★

Promoting the co-operative option through allied organisations (eg. Transition Town groups, Friends of the Earth, etc) ★

Approved technology list and kite mark ★

Campaigning (eg to ensure co-operative sector can access market on a level playing field) ★

#### New co-operative energy services

Energy Services Co-operative (ESCo-op) – for promoting a scaled up approach, to develop affordable warmth, to support retrofit and to help federate smaller organisations ★★★★★

Retrofit service package linked to community loan fund lenders specialising in housing repair (Wessex Home Improvement, Street UK, London Rebuilding Society) ★

One-stop package of measures including household advice, schedule of measures, finance provision and ethical supply chain of installers and materials ★

Co-operative energy supplier – to provide energy and contract with co-operative retrofit and other sector specialists (eg. Carbon Co-op, Household Energy Service, etc) ★

Hub and spokes model: to link up co-operative and mutual providers to cut carbon and promote the efficient use of energy ★

#### Finance service development

Work on a risk capital fund to support the co-operative sector – feasibility study ★

Work on capital investment funds that could link with the Green Investment Bank, Big Society Bank and utilities ★

Star rating reflects voting preferences where 5 equates to a total of 20 votes.

## Reflections on the draft report

Following the round table, a number of participants commented on the key tasks for effective action to be instigated to develop the foundations for co-operative energy services.



Steven Glynn of the Sustainable Change Co-operative suggested four important and fundamental starting points:

1. The need for 'mapping what is already out there in terms of services offered by co-operatives and then thinking about how we can strengthen what can be offered.'
2. The need for 'a clear exploration and explanation of why a co-operative approach is desirable. Why is it different, what distinguishes it?'
3. The 'need to develop a clear concise communicable message that practitioners can buy into and can unite groups in a shared idea that can provide a strong underpinning for action.'
4. The 'importance of collaborating with organisations outside the co-operative sector (eg Carbon Leapfrog)' that share the same transformative mission.

Mark Wells of Sheffield Renewables pointed to key areas of co-operative advantage.



"Co-operative approaches can generate additional non-monetary value [and] this should be given deeper consideration, as this is an area where we enjoy a clear advantage over traditional commercial organisations. This could include community empowerment or behaviour change."

Keith Richardson of Community Renewable Energy (CoRE) felt that working together and co-operation among co-operatives should be a goal, but:



"This is not straightforward as many of us are in competition. I think the best way of doing this is therefore to look at issues where the benefits of co-operation outweigh the disadvantages of working with competitors. I think issues like finance, joint development of IPS [legal structures] or joint responses on RHI [provide common ground]."



Mary Anderson of CAG Consultants called for a partnership model among key organisations.

"I like the idea of a multi-partner initiative akin to 'Making Local Food Work'. This could not only cover renewables/CHP but also energy efficiency and behaviour change work, building on Co-operatives UK's experience of Greener Together."

Jonathan Atkinson of The Carbon Co-op called for the building of a broad-based and common agenda to develop green energy services and the strategic "need for greater collaboration between the Co-operative Group, the larger societies and the rest of the co-operative movement."





Ewan Jones of the Energy Savings Co-operative felt the biggest challenge faced was working out effective ways for larger co-operatives to partner effectively with a broad

network of smaller organisations with the vital local knowledge and connections.

'Big organisations, such as the Co-operative Group, bring capability, financial and brand strengths to bear that can deliver leverage unimaginable to individuals. Ground-up organisations have local understanding, connections and energies essential for unpicking challenges as complicated as the energy demands of the UK's existing building stock.'

Michael Jacobs of the London School of Economics played a leading role as a government Special Advisor on climate change policy to the Brown government. He agreed that the partnership between the large and small organisations is crucial to get delivery right but he worried that the opportunity emerging would be missed due both to a lack of robust strategic planning and to an inability to develop effective and intensive co-operative partnerships. He highlighted the real risk of a tragic missed opportunity due to an over emphasis on a bottom up approach.<sup>8</sup>



'Most of the co-operative movement's activity in this field is very small-scale. This is unsurprising, and deliberate: most of it has been the product of local enterprise and innovation arising within, and with a focus on specific communities. However four problems arise from this:

First, there is a lot of wheel-reinvention going on, in which separate community-based groups encounter the same problems and struggle to achieve similar solutions.

Second, finance is very difficult to obtain, and is expensive, because the risks and due diligence/ transaction costs of individual schemes are high.

Third, there is no collective voice or lobbying activity to ensure that the policy frameworks currently being put in place by DECC and Ofgem are supportive of co-operative enterprises.

Fourth, the opportunity to benefit large numbers of people, particularly those in fuel poverty, will be missed if activities cannot be quickly scaled up in size. Scale is neither the objective of most of the locally-focused co-operative activities currently under way, nor likely to be achieved by their bottom-up business model; it almost certainly requires a more top-down approach.'

Michael Jacobs stressed that the overarching challenge faced is how to introduce co-operative energy solutions into the three separate energy services fields, namely:

1. supply retail energy to households and other organisations;
2. providing energy efficiency advice, services and installations to households; and
3. generating electricity and heat supply, particularly through renewable sources at community and households scale.

There are examples of good practice in these fields that the co-operative and mutual sector in the UK is developing. Reviewing these is essential in order to consider the potential ways to weave and wire the strands together in the strategic ways called for by round table participants.

## Sustainable Social Justice – the climate challenge and the fuel poverty challenge

To meet the legally binding targets under the Climate Change Act 2008, the focus of the coalition government's plan is to redevelop the country's aging energy generation infrastructure and to upgrade the thermal efficiency of the nation's building stock.

The entire stock (domestic, industrial, commercial and office buildings) accounts for 55 per cent of national carbon emissions – 30 per cent from housing and 25 per cent from other buildings.<sup>9</sup> Energy efficiency measures and low carbon technologies are essential to secure the government targets of a 34 per cent carbon reduction below 1990 levels by 2020 and an 80 per cent reduction by 2050. As successful regeneration projects have shown, economies of scale and cost-effective delivery can be achieved through local area based action that actively involves residents, community and business stakeholders.

In recent years fuel poverty has been rising, not falling. Between 1996 and 2004 fuel poor households in England dropped from 6.5 million to less than 1.2 million but with rising fuel prices since 2005, fuel poverty has increased almost five-fold to 5.5 million. This is one in five households and the highest level in 15 years.<sup>10</sup>

The government estimates that a one per cent increase in the price of energy pushes a further 40,000 households into fuel poverty.<sup>11</sup> In the second half of 2011, four of the big six energy companies have announced fuel bill increases ranging from 10% to 18%.<sup>12</sup> National Energy Action forecast that these rising energy charges and increased unemployment will lead to UK fuel poverty to ongoing rises in fuel poverty in 2012. Additionally in the transition period to the Green Deal, the Warm Front energy efficiency grants programme has been cutback by two thirds from £345 million to £110 million a year. In 2010-11 Warm Front provided retrofit measures for 170,000 households, but will only assist 57,000 households this financial year and 50,000 next year.<sup>13</sup>

The feed in tariffs (FITs) revenues available to those in a position to invest in photovoltaics are funded through energy bills but exclude the fuel poor generally from the benefits.<sup>14</sup> Citizens Advice has indicated that the measures to reduce carbon emissions from the home through levies on fuel bills are forecast to add £125 to £250 by 2020 to the average UK consumer's fuel bill.<sup>15</sup> The average current yearly levy is £88 per household – equivalent to 7.8% of a current dual fuel bill for gas and electricity of £1127.<sup>16</sup>

CAG Consultants have indicated there is no agreed policy or strategy to limit a 'double injustice' from this surcharging system – where those who struggle to heat cold, damp homes and pay the most relatively for fuel, appear at risk of securing the least from government proposed carbon emission reduction programmes.<sup>17</sup> The Committee on Climate Change report (December 2008) forecast that the increase in energy prices to meet carbon budgets for investment will consign a further £1.7 million to fuel poverty by 2020.<sup>18</sup> Using government data, research by Policy Exchange has shown that the levy on energy bills for both domestic and commercial customers will rise by 2020 to £16.3 billion a year – equivalent to a 4% rise in the basic rate of income tax.<sup>19</sup>

How might the joint objectives of reducing carbon emission and reducing fuel poverty be integrated via co-operative solutions?

The New Economics Foundation (nef) has proposed a new social settlement called Green Well Fair.<sup>20</sup> This suggested policy framework builds on their previous proposals for a Green New Deal embracing social, ecological and economic objectives. If used to underpin the joint pursuit of a green economy and social justice, the goals of a national Green Well Fair strategy would include:<sup>21</sup>

1. Carbon reduction success by 2020.
2. Well-being: ending fuel poverty by 2016 and creating 'good work'.
3. Sustainable development: decentralising and democratising the economy.

Nef has shown how a 'Green Well Fair' strategy could be delivered through a local green new deal framework. This research illustrated how key green economy mechanisms could be aligned systematically including: green municipal bonds, energy services companies, community development finance, interest-free loans, green Individual Savings Accounts, and incentives like feed in tariffs.<sup>22</sup>

Most of these mechanisms have already been developed and are in operation. The challenge appears to be how to link them up. The next section examines practice from across the social and community enterprise movement to identify where the co-operative sector should learn from and build on business models already in existence to inform a strategy toward tacking fuel poverty and cutting carbon.



## Policy spotlight: The Energy Security and Green Economy Bill

The core of the Energy Bill is the provision of a Green Deal aimed at revolutionising the energy efficiency of British properties – both domestic and commercial. The government’s key proposal is the Green Deal plan, a financing mechanism that allows energy consumers to repay the investment through their energy bills.

The finance to be provided is not a conventional loan as households and businesses contracting to take on the plan are only responsible for the repayments for the time they are the bill-payer of the property. When the bill-payer moves out, any balance outstanding will be transferred to the incoming bill-payer.

To provide consumer protection, Green Deal plans will be vetted and must include eight pre-requisites, the first being The Golden Rule: the expected financial savings must be equal to or greater than the costs attached to the energy bill.

The Green Deal has been structured for operation and delivery by firms who can mobilise the capital funds for investment and who can secure government approval. These include the major energy suppliers and other private sector corporations that are gearing up to become involved included Tesco, Marks & Spencer and B&Q.<sup>23</sup>

The government is seeking to develop a competitive market in the provision of three customer-facing roles in the value chain, including: advisers, installers and plan providers. In addition to the energy companies and major retailers, the government is encouraging home improvement companies, builders’ merchants, energy efficiency companies, housing associations and local authorities to provide one or more of the three core services.

In introducing the bill, the Energy Secretary Chris Huhne has forecast the creation of 100,000 jobs within five years and billions of pounds of investment. The implementation date for the first Green Deals has been set for autumn 2012.

Green Deal finance has been structured to fund energy efficiency measures primarily. The intention is that other policy interventions such as the Renewable Heat Incentive (RHI), the feed in tariff and the Energy Company Obligation will complement the Green Deal in providing incentives for generating low carbon energy and heat as well as subsidising funding for increasing the energy efficiency of less well off households.

The government marketing strategy is to promote the Green Deal through a broad range of participating organisations, including: energy companies, supermarkets, local authorities, home improvement stores, landlords, estate agents, local builders, energy efficiency installers and advisers and local community groups. The Green Deal has been designed to be flexible and to allow customer acquisition to be secured through sub-contractors and other agents of larger providers.

To secure carbon reduction targets by 2020, the Green Deal will need to upscale investment and housing retrofit action year on year. Skills training for upwards of 100,000 workers in the supply chain is a huge challenge. The big six energy companies will be the main drivers behind Green Deal .

The government aim is that loan interest charges for Green Deal finance will be low. Current projections estimate that Green Deal plan finance charges annually will range from interest rates of 6% to 8% or more. To address the financing challenge, PwC has been leading an initiative with a consortium of businesses to establish a Green Deal Finance Company as a non-profit lender able through economies of scale to establish a loan aggregator to lower the lending charge to households.

Independent assessments are indicating that such high charges will not enable the Golden Rule to be achieved – certainly not for low income households but also for many better off households as well.<sup>24</sup> The government's calculations assume that 85% of the savings from the improvements will be made in cash savings and 15% in extra warmth and comfort.

The trade off range between cash savings and comfort can frequently be the inverse of these figures. The Confederation of British Industry has concluded that commercial interest rates without subsidy will not work and that as a result the Green Deal could become a 'lame duck'.<sup>25</sup>

The Green Deal has been designed to provide trusted, accredited installation of energy efficiency measures for households and businesses. Installers will need to be accredited and comply with an official quality mark covering product and material certification, warranties covering both materials and installation and Codes of Practice covering complaints and consumer redress.

All Green Deal providers (finance providers, advisers and installers) will need to be approved by meeting specific criteria and comply with Codes of Practice set out in the Energy Bill.

The government explicitly states that the Green Deal can be shaped and developed by different umbrella bodies and has offered assistance to enable market entry for different approaches when the scheme begins:

'Green Deal is a market framework which offers considerable flexibility for a range of business models to compete. We will work with the relevant stakeholders to encourage a diverse range of business models.....to enter the market in 2012.'<sup>26</sup>

There appears to be a superb opportunity for the co-operative sector to develop a consortium model or other umbrella co-delivery framework to take up this challenge and at the same time to develop a trusted model of co-operative energy services.

A fuller overview and analysis of the Green Deal can be found at appendix two.

## **Pioneering the Community Green Deal: The Carbon Co-operative model**

The government's proposed Green Deal model seeks to provide a mechanism for large scale roll out of domestic retrofit measures across the UK by providing a framework for assessment, finance, delivery and repayment. Current government thinking appears to rely heavily on major utility companies and high street retailers to deliver key elements of the Green Deal with voluntary and community, social enterprise and co-operative entities playing a relatively minor supporting role.

The 'Community Green Deal' model was developed by URBED (an employee-owned co-operative) on behalf of the Homes and Communities Agency and a consortia of West Midlands housing associations called SHAP (the Sustainable Housing Action Partnership). It envisages an intermediary organisation or consortium of social landlords and Local Authorities - a community green deal 'delivery body' - to aggregate demand in order to achieve economies of scale and arrange large-scale sources of low cost finance.

On the ground engagement to deliver retrofit programmes street by street and home by home would take place through local 'Community Green Deal Associations' – which could be mutual societies. Their role would be vital in order to build trust and carry out promotion in order to achieve a high level of take-up and to work with contractors to minimise the disruption associated with retrofit programmes.

This approach is being rolled out in Manchester in the form of the 'Carbon Co-operative' with the support of Manchester City Council and the Co-operative Enterprise Hub. The model features two linked member co-operatives. The Carbon Savings Society (CSS) will seek to raise finance through community shares and bonds, creating an income stream from renewables such as solar PV to cross-subsidise whole home retrofits. Its sister organisation, The Carbon Co-operative, will aggregate local demand, providing its member households and communities with trusted whole home retrofit services and using its enhanced purchasing power to drive down costs and ensure quality.

[www.carbon.coop](http://www.carbon.coop)

## Co-operative and community models of good practice

During the round table discussions a number of innovative approaches to energy service provision, retrofit delivery and community renewable energy were highlighted.

Current areas of development activity in the UK include:

- Community development loan finance for housing improvement
- Energy service companies for social housing tenants
- Community combined heat and power (CHP)
- Co-operative capital innovation and rural opportunities
- Co-operative energy supply – the challenge and opportunities
- Consideration of emerging models of good practice can inform discussions about what a co-operative energy services strategic plan should look like and where the next steps are.

### Community development loan finance – Housing improvement services

ART Homes was set up in 2000 in Birmingham as the first Community Development Finance Institution (CDFI) in the UK in the home improvement lending market. As a model, it was inspired by the success of a pioneering CDFI in Chicago, Neighborhood Lending Services (NLS).<sup>27</sup>

Over the past ten years ART Homes has advanced over £41 million of loans to low- income homeowners. It has operated in partnership with over 20 local authorities – mainly in the West Midlands, Merseyside, South Wales, Edinburgh and Glasgow. Initially an independent CDFI, ART Homes became a subsidiary of Mercian Housing Association within the Circle Anglia Group and is currently in the process of transferring its business to another CDFI.

Under their trade body, the Community Development Finance Association (CDFA), six CDFIs in England and Wales are operating revolving loan fund services to tackle housing disrepair and fuel poverty. In addition to ART Homes, the CDFA members providing home improvement finance include Street UK Homes, Wessex Home Improvement Loans, Parity, London Rebuilding Society, Lancashire Community Finance and Robert Owen Community Banking Partnership.

Street UK is a national CDFI based in Birmingham that provides back office services for a growing number of regional CDFIs and additionally for local authority home improvement schemes. The Home Improvement Trust in Nottingham operates as a national advice and financing intermediary in partnership with the Dudley Building Society.

Martin Hockly of Street UK Homes sees a growing niche market for CDFI home improvement finance and for future partnerships with mainstream banks.

"Affordable home improvement lending is the big new field for CDFI lending. The volume of loans is still low but all the set up work for legal compliance has been done now with the Financial Services Authority and the Office of Fair Trading. Local authorities are now looking at CDFIs as potential partners to assist them to invest previous grant funds as low-cost home improvement loans. Not easy for the banks to get engaged at the front-end because the outreach work needed by CDFIs and local authorities is labour intensive, but the banks are interested in the potential opportunities for refinancing the lending by CDFIs."

A key objective of the CDFI lenders is to share emerging good practice and to find more effective and efficient ways at the sub-regional level to work with local authorities, approved building contractors and home improvement agencies. The CDFIs are steadily working towards 'one-stop' shop delivery models co-ordinated by local home improvement partnerships.

For example, Wessex Home Improvement Loans (WHIL) has developed a robust model of best practice in the provision of home improvement lending linked to technical advice and support. Through its joint partnership with the local authority and West of England Care and Repair, WHIL has found creative ways to package its lending service with specialist home improvement advice services and welfare benefit checks. This integrated service, backed by the council, gives households the confidence to borrow with an assurance that loans will be affordable, that their income has been maximised and that the vetting of builders by a service partner will lead to a high quality repair or improvement.

This home improvement partnership system is working effectively and WHIL has a four-year lending track record with no bad debt. Loans made are on a shared interest basis with homeowners paying 4% and the local authority providing capital contributions and an approximate 3% service charge to WHIL for operating the service. Finance is tailored to the repayment capacity and age of the borrower and loans include: capital repayment, interest only and rolled up interest (for those over 65 years of age) products. WHIL has extended its one-to-one partnership service to 19 local authorities in the South West.

In seeking to develop finance that could operate under the Green Deal, London Rebuilding Society, Street UK Homes, WHIL, Parity and Robert Owen Community Banking Fund are working with local authorities on 'green loan' products for carbon saving measures. Street UK Homes and London Rebuilding Society are involved additionally in pilots with the Energy Saving Trust on green loans. Depending on the different CDFI 'green finance' product, these loans are available to low-income homeowners and in some circumstances to assist private sector landlords to retrofit properties.

The London Rebuilding Society partnership with the Energy Saving Trust is the most ambitious 'green' finance pilot. It is called SHIMMER - short for 'Smart Homes: integrating – monitoring, money, energy and research'. 22 low-income households are involved in the trial with an average 'green retrofit' investment package of £12,500.

The focus of SHIMMER is on tackling fuel poverty and in particular is exploring ways that feed in tariff income can be used creatively. As the households are on means-tested benefits, direct income from FITs would have to be declared to the Department of Work and Pensions and would reduce benefits pound for pound. To overcome this, SHIMMER is experimenting with ways to share the financial benefits and FITs income through discounts and vouchers for households. Another aim of SHIMMER is to provide households their own bespoke energy management system linked to smart metering.

Warren Garrett of London Rebuilding Society describes fully the benefits.

“We are testing out an innovation that provides a house specific and household specific system of money and energy management. Energy savings is converted into cash so that the homeowner or tenant can see both how much they are spending each week and in which areas they can achieve compounded savings. For example, the system provides a transparent and bespoke Energy Savings Plan for each household and shows the 10 best energy savings measures. Savings made in money can be handled in different ways. It can be used to create a financial cushion to budget for higher winter bills or other future costs. It can be built up through savings points on a loyalty card which is part of our system and used to gain discounts. Helping households claiming unclaimed benefits or tax credits is a core feature. Further developments can link the service to a community bank account for securing a direct debit discount for energy, for accessing a Social Tariff, or for paying Council tax and budgeting for other bills.”

In aggregate, the six CDFIs and ART Homes have provided £85 million in home improvement loans. In addition, the Home Improvement Trust has advanced over £30 million under its House Proud partnership. The mutually owned CDFI housing finance sector has grown fast over the past two years. However sources of capital have come primarily from local authorities and the decline of funding for private sector housing renewal since April 2011 is putting at risk the future development of this sector, just as the CDFIs are proving the potential. In 2010-11 the private sector renewal budget for local authorities was £317 million, this year funding is not ring-fenced and thus discretionary.<sup>28</sup>

Evidence from the more established CDFI sector in the USA indicates how much further their community finance partnership approach with local authorities could be developed. There are 230 members of NeighborWorks America working in 4400 urban and rural communities across the USA.<sup>29</sup> They provide:-

- advice to homeowners about disrepair problems and the available packaged solutions;
- surveying work, home improvement scheduling and access to grant assistance;
- identification of suitable local contractors to carry out the approved works;
- monitoring of the work of local contractors and carrying out inspections before work is signed off and paid for.

A leading practitioner is Neighbourhood Housing Services in Chicago and its affiliated CDFI, Neighborhood Lending Services (NLS) which specialises in a wide range of affordable home lending. NLS has advanced over \$419 million in loans to 169,000 homeowners and leveraged an estimated \$1.1 billion of investment for Chicago's low-income neighbourhoods.

Since 1991, the NeighborWorks America network has assisted 1.8 million low-income households and since 2001 they have directly invested or leveraged the reinvestment of \$18.1 billion in the local communities they serve.

In seeking to develop a national strategy for tackling housing disrepair, a Fit For Living Task Force set up by Housing Associations Charitable Trust has investigated how the good practice of home improvement agencies, local authorities and CDFI lenders can be developed under a new action plan with an initial focus on England. It has developed a national framework to expand the development of Home Improvement Partnerships linked to regional CDFIs and to develop a model that could offer an adapted form of the Green Deal by extending the green loan piloting work.

### Energy service companies for social housing tenants

The past ten years has seen growing interest in different forms of energy services partnerships to tackle issues of fuel poverty and carbon reduction. An unsuccessful effort to set up a Birmingham Energy Services Company (ESCO) by ART Homes inspired a second successful initiative in the West Midlands. Richard Baines, the architect member of the ART Homes team has worked with Black Country Housing Association to develop Energyextra. This energy services partnership has been trading for nine years and has 15 housing association and local authority members. It currently provides energy advice, discounted energy efficient appliances and energy from a preferred supplier (Scottish and Southern Energy) for 40,000 tenants. Energyextra is now the largest energy services partnership for retailer consumers in the UK.

Dundee City Council established a similar preferred supplier arrangement with Scottish and Southern in 2001.<sup>30</sup> Like Energyextra, these affinity deals provide between £10 and £30 per tenant signed up and generates a useful revenue stream.

This is attractive to the energy companies as it costs them £50 to £60 to sign up new customers through other forms of marketing and sales. Dundee has 14,000 tenants and it uses the affinity deal income to fund free energy advice services and some grant-funded measures.

The challenge of financing major improvements to high-rise Council housing and public sector buildings is another critical area where fresh thinking is needed. Here the scope for the development of community ESCOs, structured as an Energy Savings Co-operative has real promise.

Richard Murphy and Colin Hines of Finance for the Future have researched collective investment mechanisms for a green economy including the untapped potential for a system of local authority guaranteed 'green bonds'. Municipal bonds are commonplace in the USA but have been a missing instrument for social investment in Britain. Until the mid 1980s, local authorities had powers to raise finance directly from local rate payers for the construction of Council housing, for acquiring vehicles for local authority bus services and for public sector buildings. A small revival of this mechanism has taken place in recent years with the raising of more than £200 million of bond finance by London Transport to fund improvements to the underground.

To help meet local authority needs for green retrofit, Finance for the Future has devised a Guaranteed Energy Trust (GET). This is how it would work:

- the GET would have central technical and financial expertise to help local authorities;

- the GET would vet projects and recommend them to the Public Works Loan Board;
- the Public Works Loan Board would arrange bond issues to pay for the work;
- like in the USA, to offset any risk, the bonds would be guaranteed by a private system of insurance such as monoline insurance;
- the bonds would be tax-free up to an agreed limit to attract local green investors – an adapted ISA product could work;
- rent increases to pay for energy efficiency measures would be allowed by government;
- local CHP schemes would be allowed special energy tariffs;
- projects would be built by private sector partners under GET directed contracts.

Although not using an ESCO model, Birmingham City Council agreed a £100 million proposal with funders in October 2010 to establish Birmingham Energy Savers as a 'green new deal' scheme. Its dual purpose is to cut carbon and to reduce fuel poverty by installing photovoltaics and upgrading the energy efficiency of 10,000 homes. Under the funding partnership, banks will provide £50 million, the Council £25 million and energy companies £25 million. Income generated from the first phase will pump prime funding for the next phase of retrofit with a long term plan of raising £2 billion to upgrade 200,000 homes city-wide and cut carbon 60% by 2026.<sup>31</sup>

### Community Combined Heat and Power

Conventional power stations lose 45% to 65% of the heat they generate. Combined heat and power (CHP) systems can heat an entire neighbourhood or a small town while achieving energy efficiency levels of 89% and uniquely providing reliable sources of 'green energy.'

CHP community (or district) heating is an energy supply system utilising a shared boiler plant for either a block of flats or a number of buildings. Ironically the first American commercial power system established by Thomas Edison in 1882 was a CHP plant that captured and recycled waste heat generated to provide warmth for buildings in the district.<sup>32</sup>

CHP schemes are challenging to adapt for domestic housing as they require a strong base load of demand for both heating and power. Concentrated levels of local demand are ideal and CHP projects are commonly developed for heavy industry, large shopping centres, hospitals and prisons.

About 11% of electricity is provided across the European Union by CHP. The range per country varies widely from 2% to 60% with Denmark generating the latter percentage.<sup>33</sup> CHP is widespread in other Scandinavian countries and in the Netherlands.

As Denmark and Sweden have shown, major economic and carbon savings can be made by bulk buying fuel for community heating and linking the district system to renewable sources of energy, including biomass, biogas and geothermal. Community CHP uses efficient boilers to generate electricity and captures heat for distribution through a local heat grid of highly insulated pipework.

Woking District Council has developed the largest mixed CHP scheme in Britain through an ESCO, Thameswey Ltd and a linked public/private joint venture Thameswey Energy Ltd. The local authority is the sole owner of Thameswey Ltd. but operates this ESCO with the financial and technical support of its private partner, a Danish ESCO that specialises in green energy. Set up in 1999, Thameswey Ltd. was the first local authority scheme nationally to develop an off-grid 'private wire' network to supply electricity to customers.



Two award winning community heating projects are showing the scope substantially to cut carbon and fuel poverty.

Though Barnsley's last coal mine was closed down twenty years ago, the city has been reliant on coal-fired boilers for heating its public buildings. The local authority burns 6,500 tons of coal a year and generates 15,000 tons of carbon dioxide.

In recent years Barnsley has been implementing a plan to switch the fuel stock from coal to biomass. Its first project provides space and water heating for 166 flats in three blocks and is the largest communal biomass heating system in the UK. Local tenants have had their heating bills cut by 40% and carbon reduction of 1300 tons has been achieved.<sup>34</sup> The project has pump-primed the local development of Silvapower, a dedicated woodchip supply business sourced from tree waste which saves landfill disposal. Barnsley won the Ashden Award for Sustainable Energy in 2006 and has inspired the development of similar biomass community heating projects in Sheffield.

Aberdeen adopted a comprehensive Affordable Warmth Strategy in 1999 to tackle the thermal inefficiency of its 26,500 council houses. Community CHP is at the heart of the council's strategy. To establish the energy services company, the local authority established an independent, community-owned, not for profit company, Aberdeen Combined Heat and Power Company Ltd. Feasibility and business planning research for community heating identified 35 local district areas in the city where clusters of buildings (residential, public sector and other) could be retrofitted to upgrade insulation levels and supplied by CHP.

The first project in Stockethill retrofitted four multi-storey blocks and 288 flats.<sup>35</sup> 98% of residents were council tenants and 70% were in fuel poverty. Funding was a mixture of 40% grant funding and 60% bank lending. Two further local district schemes have been established in Seaton and Hazlehead. Thus far 14 multi-storey blocks and 8 public buildings have been connected to CHP services. Buildings connected have seen emissions reduced by approximately 56% and fuel bills cut by up to 50%.<sup>36</sup>

The tenants pay for heat and power through their rent and the community-owned CHP company provides local accountability. Because heat is not a regulated energy service and payments are incorporated into the rent, a major economic advantage of Community CHP is that no VAT is payable.

Aberdeen won the UK Housing Award in 2008 for Outstanding Achievement in Housing and the community CHP company won the 2008 Guardian Sustainability Award in the Innovation and Progress category.

### **Co-operative capital innovation and rural opportunities**

Rural areas in Scandinavia and the USA provided the seedbed for the development of successful co-operative energy services and continue to expand their markets. In the past ten years rural communities in Britain have been at the forefront of community and co-operative forms of investment action.

Rural areas are well placed to take a lead as they have access to a diversity of renewable energy resources from wind to hydro and from wood to biomass. Economic and Social Research Council research has highlighted the vibrancy of community energy projects in Britain.<sup>37</sup> Their investigation profiled over 500 community energy ventures nationally – far more than the researchers expected and the majority in rural areas.

Rural communities are often not linked to gas supplies and sometimes poorly linked to electricity. Finding creative ways to plug this energy services gap has driven community renewable energy innovation over the past 15 years in many rural areas of Scotland, Cumbria, Cornwall, the Midlands, the North East and Wales.

Community ownership of shops, pubs, wind farms and micro-hydro schemes have successfully used Industrial and Provident Society (IPS) legislation to raise local share capital and other forms of loan stock. Between 1990 and 2006 three to four community share issues occurred a year. Since 2007 the community share issues have increased considerably with 28 share issues in 2009 alone.<sup>38</sup> Share issues for community energy projects are an increasingly successful method for raising local risk capital.

Baywind Energy Co-operative was formed in 1996 to provide community ownership of the Harlock Hill wind farm in Cumbria.<sup>39</sup> The Swedish renewable energy company, Vindkompaniet provided initial development expertise.

However it was the co-operative that raised £1.2 million in capital through a share issue to build two turbines on the site. With this track record, Baywind subsequently raised a loan from the Co-operative Bank to acquire three further turbines on Harlock Hill from Vindkompaniet. In 2001 a further share issue raised £670,000 for a wind turbine at the Haverigg II site.

The minimum shareholding for Baywind Energy is £300 and the maximum is £20,000 per investor. Baywind Energy Co-operative supplies green electricity to power about 1300 homes a year and has paid an average 7% annual return to its 1350 members.<sup>40</sup> The co-operative has established the Baywind Energy Conservation Trust to promote and fund local energy education, energy advice and energy efficiency action. A guaranteed income of 0.5% from the Harlock Hill site resources these community energy services.

Baywind set up Energy4All in 2002 as a technical advice and development service to promote co-operatively owned energy projects. Energy4All is owned by the growing number of renewable energy co-operatives it has supported. There are now seven members and between them they have raised over £13 million in share capital. One of the larger members is Westmill Wind Farm Co-operative in South Oxfordshire. It has raised £4.4 million from over 2,300 investor members.<sup>41</sup>

Developing community energy co-operatives is extremely difficult. In a successful effort to make things easier, Energy4All has formed a partnership with Falck Renewables in Scotland to engage local communities near to big commercial wind farms and to help them buy a stake in these projects. This partnership approach has established four successful wind co-operatives in the north of Scotland.<sup>42</sup>

Community hydro schemes in rural areas have used Industrial and Provident Society (IPS) share issues to raise local finance and to develop ownership by local social investors. Torrs Hydro in New Mills in Derbyshire has been a pioneer and has raised £126,000 through two community share issues in January 2008 and March 2009.<sup>43</sup> To establish its 70kW community energy project on the weir where the rivers Sett and Goyt meet up in New Mills, it packaged the share funds with grants and loans of £100,000, including finance from the Co-operative Bank and a grant from the Co-operative Fund.

Community and social investors in Baywind Energy Co-operative and Westmill Wind Farm Co-operative have been offered the opportunity to invest over £500 and secure Enterprise Investment Scheme (EIS) tax relief to enhance their financial return. Baywind Energy Co-operative investors claiming EIS have increased their return to 8.2% or more.

Renewable energy projects lock up community investment in capital equipment. This restricts the capacity for such projects to repay the capital funds of the investors quickly. To compensate for this, Baywind Energy Co-operative and Westmill Wind Farm Co-operative have offered their investor members transferable shares at a good return.

Unlike IPS withdrawable shares, transferable shares are not exempt from Financial Services Authority (FSA) regulations that accompany a public share offering. This increases the cost of the share issue considerably. For example, to promote their prospectus and to raise £4 million, Westmill Wind spent £150,000 in professional fees (legal, accountancy and managerial) and marketing costs.<sup>44</sup> The 2011 Budget announced that from April 2012 the annual EIS investment limit for individuals will be increased to £1 million and the annual EIS capital raising limit for qualifying companies will rise to £10 million.

For smaller share issues like Torrs Hydro, withdrawable shares are more attractive as they are exempt from strict FSA regulations. The Torrs Hydro scheme did not secure HMRC approval for EIS. However a similar community energy project in Yorkshire, Settle Hydro, has negotiated approval to offer EIS tax relief to investors putting in over £500 on condition that these shares are transferable.<sup>45</sup> Out of 158 social investors, 33 applied for EIS shares. However, alongside the Budget announcement on EIS changes came the restriction that smaller scale community renewable energy schemes (those below 5MW) which apply for financial assistance under the feed in tariffs (FITs) will no longer be eligible for EIS tax relief.

Water Power Enterprises (H2Ope) advises and promotes community hydro projects. Both Energy4All and H2Ope projects are established using Industrial and Provident Society legislation, the former wind projects as bona fide co-operatives and the latter hydro schemes as societies for the benefit of the community. The difference being that the societies for the benefit of the community are non-profit distributing with surpluses ploughed back into the scheme or used to regenerate and promote the environmental sustainability of the towns and areas where projects are developed.

Rural housing is often hard to insulate and improve because of solid walls, exposed sites and the age of many buildings. These 'hard to treat' buildings provide a major challenge as they are much more costly to upgrade and relevant energy measures are more expensive. Investment payback periods are long and there is a need for innovative finance. There could be scope for Community Development Finance lenders operating regionally to collaborate with other community energy service developers to provide Green Deal solutions.

In many rural areas of Denmark a range of renewable energy projects work collaboratively to provide decentralised energy that is owned and managed either by communities or farmers including:

- Community owned wind power
- Community district heating powered by biomass and biogas
- Farmer owned biogas and biomass production

There is considerable scope for rural community energy partnerships like these to be developed in Britain to tackle the hard to heat and hard to treat problems of rural housing stock.

In Mid Wales, the Robert Owen Community Banking Partnership has set up a Zero Interest Loan Fund with capital from Powys County Council. Energy advice to households is provided by the West Wales Eco-Centre and the members of the Community Banking Partnership include the regional CDFI and three local credit unions. The Community Banking Partnership is also working on a community hydro scheme on the Severn in Newtown in partnership with the Household Energy Service and Cwm Harry Land Trust (a project involved with household food waste collection, anaerobic digestion/biogas, community food growing and community composting).

Community Land Trusts (CLTs) are also being developed in many rural areas of Britain for affordable housing, workspace, community facilities and community gardens.<sup>46</sup> CLTs are using Industrial and Provident Societies to promote community ownership and some like Gloucestershire Land for People in Stroud have been involved in developing the growing number of Community Supported Agriculture projects (at least 140 under development in England alone).<sup>47</sup>

A number of Community Land Trusts either have or are seeking to develop community renewable schemes. The Isle of Gigha Heritage Trust in Scotland was established in 2001 through a £4.15 million community buy out of the island.<sup>48</sup> Since then, the CLT has improved the existing housing stock on Gigha and built 18 new affordable homes and a community wind farm.

Ongoing work on rural projects like these has highlighted the need for specialist forms of finance. There is a financing gap for CLTs, for community self-build housing, for co-housing projects and for diverse forms of co-operative housing. The growing size of this gap has been highlighted by the report of the Commission on Co-operative and Mutual Housing.<sup>49</sup> The Commission is trying to address this issue through a working party seeking to establish a Special Purpose Vehicle to provide finance for CLTs, co-operative and mutual housing.

Collaboration in the co-operative sector is developing. A growing network of social enterprises focusing on carbon reduction solutions and using co-operative methods is being established. The founding members include individuals from CoRE, Hook Norton Low Carbon, Bioregional, Household Energy Service, Stroud Community Agriculture / Stroudco Food Hub, The Big Lemon, National Energy Foundation and Sharenergy. Currently they are developing a trade body called Local United to act as a 'social venture intermediary' for supporting and accelerating the development of other low carbon social enterprises. Local United intend to focus on four sectors: community energy services (renewable energy, demand side management, and housing retrofit), community supported agriculture/allotments, recycling and environmental transport.

## Co-operative energy supply – the challenges and opportunities

Average household energy bills have more than doubled from £572 in January 2003 to £1250 in January 2011.<sup>50</sup> The biggest annual rise was in 2008 when oil prices rose to \$140 a barrel. Household energy prices rose that year by up to 50% for gas and 28% for electricity. The sharp increases have sparked new interest in energy co-operatives.

Unlike shareholder corporations, co-operatives and mutuals are owned by their stakeholder members. Thus their focus is not on shareholder profitability but on member service at the most economical cost. There are a growing range of European utility services that are either co-operatively or mutually owned and many operate at a significant scale.

Welsh Water was converted from the private sector to mutual ownership in 2000 with a successful bond issue of £1.9 billion.<sup>52</sup> Glas Cymru, the owner of Welsh Water, is a company limited by guarantee without shareholders. The mutual structure saves the company and its consumers money because bond finance can be much cheaper than equity – especially for a utility with a local monopoly. In a capital intensive sector like the water industry, it is estimated that every 1% savings in capital costs can reduce bills by 5%.

In its recent bond issue in March 2010, Glas Cymru raised £140 million over 13 years at 1.85%. Over the past ten years the balance sheet of the mutual has grown from £1.9 billion to £3.7 billion.

As an outcome of the peace process, Mutual Energy in Northern Ireland was formed in 2005 and used the Glas Cymru model. It operates both the gas transmission and electricity transmission companies in Northern Ireland.<sup>52</sup>

So what are the opportunities and the challenges for developing energy co-operatives in the UK on a bigger scale? There are different potential areas of the energy market where co-operative solutions can be introduced.

The energy supply market is structured this way:

**Generating companies** producing electricity from coal, oil, gas, nuclear, wind and hydro sources. Also corporations producing gas from the North Sea – a market dominated by British Gas and the major oil companies.

**Transmission companies** responsible for managing and maintaining the electricity infrastructure of high voltage power lines and other companies responsible for the gas transmission and storage systems.

**Distribution companies** that transform high-voltage electricity to low-voltage power and additionally manage and maintain local cables, transformers and substations.

**Supply companies** that buy electricity in bulk, gas at wholesale prices and retail both fuels to consumers.

A typical household bill breaks down roughly into the following cost proportions:

- 75% for generation costs
- 5% for transmission costs
- 13% for distribution costs
- 7% for supplier costs

Supplier margins are quite tight and affinity deals can normally only secure a small price reduction. Bigger savings can be made through the services of an energy broker. Large corporations, including the Co-operative Group, buy their own energy this way. Wholesale prices can be 26% to 45% below domestic gas and electricity prices. So hence the major savings that large users of energy can achieve by bulk buying supplies.<sup>53</sup>

Achieving similar savings for domestic households through bulk buying is more difficult because of the costs of account management and billing. However research by the Co-operative Party has shown that savings of 10 to 20% for households is achievable through an energy co-operative.

There are at least four ways to build consumer ownership and secure significant savings through co-operative models.

**Energy supply company:** in order to gain approval to operate, such firms need to demonstrate to the regulator, Ofgem, the capacity to provide services to 50,000 or more customers. Midcounties Co-operative obtained an energy supply license and launched Co-operative Energy in February 2011.<sup>54</sup> Midcounties is the third largest co-operative in the UK with 430,000 members and annual sales of £780 million. The initial aim of the co-op is on capturing a small but significant and growing share of the retail market with a low price offering, a consumer ownership uniqueness, a dividend and a strong proportion of energy from renewable sources.

**White label supplier service:** this can be done through a partnership with an existing energy supply company. Ebico was established in 1998 and operates as an ethical, non-profit energy company in partnership with Scottish and Southern Electricity (SSE). Its mission is to help reduce fuel poverty by offering households lower priced gas and electricity with no standing charge. This service can achieve energy bill savings for low-income pensioner households and other small households. SSE operates the connection service and the billing for Ebico.

In 2008 New Illinois Co-operative Energy (NICE) was formed in a similar way to Ebico. The NICE energy supply partner is Southwestern Electric Co-operative which operates in another American region and has a 70-year track record.<sup>55</sup>

**Energy brokerage:** there are some interesting European good practice models of how this can be done. Woonenergie in the Netherlands acts as an energy broker for Aedes, the Dutch national federation of housing associations. Woonenergie buys energy at wholesale prices, operates the marketing and customer services for 60,000 tenant households and sub-contracts an energy supplier to handle the billing.<sup>56</sup> Annual savings to tenant households is about 60 euros.<sup>57</sup>

In Belgium a charity, ACW, helped households in the province of Limburg to set up an energy brokerage in 2003 with the aim of achieving savings for its members comparable to the economies available to large corporate customers of energy companies.<sup>58</sup> Grass roots action, community meetings and door-to-door promotion led to a 75% take up in some areas. In the first year savings of 15-20% were achieved. ACW has mobilised a strong volunteer network and the model has spread to other Belgian provinces. Over 15,000 households have joined and average savings of 250 euro have been reported. ACW has expanded its service to focus on the collective purchasing of energy efficiency measures, solar thermal and photovoltaic installation.

**Energy bulk-buy groups:** in rural areas many homes are off grid and dependent on paraffin heating oil and wood. The Energy Co-operative in south-eastern Pennsylvania was sponsored in 1979 by a successful food co-operative to bulk-buy heating oil.<sup>59</sup> It now provides this service for 6,500 members. Annual membership fees range from \$30 for businesses and \$15 for households. No fee is charged to low-income, retired and disabled members. The success of the bulk-buy service and membership growth enabled the Energy Co-operative to secure an energy supply license in 1998.

In Northern Ireland credit unions are seen as ideally placed to develop bulk-buying services for communities to budget and secure low cost sources of fuel with an energy co-operative linking up credit union provision.

Initiatives like these or similar ones are developing in Britain as the case profiles in this review illustrates. Community Energy Direct has been promoting the growth of local energy co-operatives. A good example is the Edinburgh Community Energy Co-operative which was formed in late 2007 with additional support from Co-operative Development Scotland. The mission of the co-operative is to give residents in Edinburgh a vehicle to develop renewable and low-carbon energy solutions in the city. Transition Edinburgh is an active supporter of the co-operative.

## **Behaviour change case study: Greener Together**

Greener Together- the co-operative way was part of the Greener Living Fund, sponsored by the Department for the Environment, Food and Rural Affairs (Defra) and ran to March 2011. The core focus was to reduce environmental impact through individual behaviour change in the areas of energy, waste and personal transport. Greener Together was led by Co-operatives UK, with the Confederation of Co-operative Housing (CCH) and the Plunkett Foundation who supported over 40 co-operative and community owned business to work with their individual members and customers.

2,026 people joined the project. 42 co-operatives actively participated; ranging from large co-operative retail members such as Midcounties Co-operative, to Banna Housing Co-operative with only four members. As a result of Greener Together, 472 tonnes of CO<sub>2</sub> emissions were saved and an impressive 19 tonnes of waste were diverted from landfill.

Phil Beardmore, from the Confederation of Co-operative Housing, said:

"Greener Together has shown that it is possible to persuade people to adopt pro-environmental behaviour. Many of the participating co-operatives have succeeded in getting significant numbers of their individual members to change their behaviour and achieved carbon dioxide savings of up to half a tonne each. That's almost as much as you would save by insulating the wall of your home, but at no cost.

"Those co-operatives that have succeeded have done so because they've approached environmental behaviour as a membership engagement issue and not simply a building issue or an environmental issue. You don't need to be an expert on solar panels or wind turbines to do this, you just need to be good at persuading people to do things and holding their hand to support them to make lifestyle changes.

"We shouldn't underestimate the difficulty in persuading people to change their lifestyles, but what Greener Together has shown is that people will adopt pro-environmental behaviour if the messenger is someone they know and trust. The co-operative model is an instrument for social change as well as economic change. The implication of this for future environmental policy and initiatives such as the Green Deal, is that there is a hugely important role for community organisations such as co-operatives in delivering our low-carbon future."

[www.greenertogether.coop](http://www.greenertogether.coop)



## Conclusions

Energy co-operatives are major providers of energy services in a number of countries. Their long history in the USA, Sweden and Denmark, and their success in providing democratic and decentralised energy services, provides both inspiration and guidance on how Britain can transform and make energy services locally accountable. The growth in recent years of community energy projects across the UK is indicative of the untapped potential.

As the Scandinavian experience shows, energy co-operatives can work equally well in both rural and urban areas. The proven success in Denmark highlights how co-operatives are uniquely able to cut carbon, save money and provide a democratic network. Key to developing integrated green energy services in Sweden and Denmark has been horizontal partnership development through close collaboration with local government and local businesses.

The successful development of CHP and district heating services across Denmark over the past thirty years has confirmed that community co-operatives and local authority partnerships are critical to success. Additionally and equally important is an enabling public sector policy framework. Denmark's 1979 Heat Supply Act was key to setting targets, providing incentives and mobilising investment to develop local heat grids and a distributed energy system that is highly resilient.

Denmark had no fossil fuels and growing public concerns about rising oil costs were a key driver for decentralisation and for the development of the nation's vast wind resources as well as its biomass and biogas infrastructure. With energy prices soaring and North Sea oil and gas declining in the UK, the necessity to deal with energy security issues in root and branch ways is evident.

So what lessons can be drawn from the success of Denmark in developing green energy services using co-operative methods? Four facilitating structures appear to have been critical:

1. The 1979 legislation which provided a supportive regulatory environment to decentralise and distribute energy services;<sup>60</sup>
2. A 25-year energy plan passed in 1996 called 'Energy 21' which aimed to ensure that 'the energy sector is well rooted in a democratic, consumer-orientated structure...robust in relation to market developments' with an emphasis on consumer ownership and consumer democracy.<sup>61</sup>
3. Direct engagement of communities in ways that informed, educated and supported households, small businesses, farmers and local authorities to collaborate to take successful action.
4. Incentive schemes like feed in tariffs and access to low-cost, patient sources of capital that was secured through local authority guarantees and finance underwriting.

The results indicate what can be achieved with a focused approach and a 25-year strategic energy plan that mobilises joint effort at local and regional level.<sup>62</sup>

**CHP and District Heating:** 60% of Danish space heating is provided from these sources and frequently uses municipal and local waste sources for fuel. 300 of the 400 district heating networks are consumer owned, and in the bigger cities, most of the rest are municipally owned.

**Wind farms:** 23% of the country's wind capacity and over 3200 turbines are owned by investor co-operatives with 100,000 plus members - usually local citizens. Among the largest wind farms, the local authority ownership stake is significant in many areas.

**Biomass fuel:** farmers and co-operatives manage this fuel supply chain and own the majority of the 120 wood and straw fed district heating plants. Local authorities have enabled these rural district heating networks to be developed and they have also facilitated access to low-cost finance by providing guarantees and underwriting support.

**Anaerobic digestion:** farmers and co-operatives own more than 20 large digester plants and local authorities have been key partners in developing the waste management infrastructure and in underwriting investments.

The findings from Co-operatives UK's expert round table highlighted the rather isolated examples of good practice in the UK and the lack of a shared vision and a long-term strategy. The lessons from Denmark offer the elements to develop a British road map.

The UK almost pursued a decentralised energy path in the late 1970s but at the time there were no relevant precedents to help win over the public. This is no longer the case and public opinion today can be mobilised. Moreover many policy and regulatory support structures are in place such as the Climate Change Act, the FITs, RHI and the forthcoming Green Deal.

The findings from the round table highlight a lack of investment from conventional funding sources for community energy projects. The overview of good practice points to the importance of social financing systems.

Though projects are still in an early stage of development, there is a steadily growing network of CDFIs and community CHP schemes where low-cost investment capital is being secured from local authorities and other sources. The German success with green retrofit which is being achieved at scale requires low-cost loans of 2.65%. This is similar to the 4% shared interest rate that Wessex Home Improvement Loans has developed with 19 local authorities in the South West. Indeed the average CDFI home improvement loan costs are low and range from 3% to 5%. Might this be the model that the DECC Green Deal proposals are missing – at least for meeting the needs of fuel poor households when combined with ECO grants?

Research by the New Economics Foundation (nef) has suggested the scope for CDFIs and credit unions to develop interest-free loan mechanisms using fees instead of compound interest.<sup>63</sup> These loan systems have been developed in Denmark and Sweden by JAK (Land, Labour and Capital) co-operative loan funds and co-operative banks that effectively mobilise local savings and use a mixture of paid and volunteer staff for service delivery like credit unions do. Like CDFI home improvement loans, JAK loans are secured by a legal charge to the property and the typical JAK charge for housing finance is low, 2 to 3% in annual fees (including membership, risk premium and administration).

The attraction of JAK co-operative loan systems is that they are not reliant on public investment funds as CDFI home improvement funds are currently. Therefore once established, JAK savings and lending systems can become sustainable and would not be at risk of the vagaries of public policy shifts.

In addition to the successful CDFI financing systems and the potential for introducing a JAK system in the UK, there are a growing number of renewable energy co-operatives and mutuals where risk capital and patient development finance is being secured from communities themselves and from other social investors. A key strategic question is: how can these limited sources of patient finance be leveraged and matched with other sources of capital?

What is clear is that the latent potential for a broader and deeper level of co-operation and mutuality in the energy sector is untapped. In a recent strategic review report on the challenges faced by the co-operative sector to adapt itself to the necessary paradigm shift to a decentralised low-carbon economy, Robin Murray underscores the need for organisational thinking and practice to shift from the dominant idea of economies of scale to the radical idea of economies of system. He calls for a co-operative systems approach that is fully integrated.<sup>64</sup>

“The co-operative economy is stronger at the micro level than at the macro. The emphasis in co-operative development has been on the creation and support of new co-operatives rather than on the expansion of existing ones and on strengthening the inter-connections of the co-operative economy as a whole. Too little attention has been given to how information, know-how and technologies are diffused between co-ops, and to the developments between them. There are notable exceptions, but the conclusion of this review is that strengthening the way co-ops work together as a system is the first priority for a strategy of co-operative development.”

Murray’s findings echo the critical observations of round table participant, Michael Jacobs. Bottom up efforts alone will simply not work. This guidance from Murray is critical and is confirmed by the round table findings and this review.

The requirement to cut carbon emissions by 34% within a decade is unprecedented. With every 1% increase in energy prices, an additional 40,000 households are thrown into fuel poverty. For both the fuel poor and the majority of British households, energy savings co-operatives could meet needs for affordable warmth and widen access to low-cost sources of investment capital to retrofit homes and to develop a green economy. Local authorities, social landlords, urban and rural small businesses and communities themselves can be assisted uniquely with co-operative methods as the Danish success has proven.

Creative, radical thinking and strategic collaboration is what the round table findings indicate is needed for a Sustainable Social Justice agenda to be pursued with a dual practical focus on cutting carbon and reducing fuel poverty. This report indicates that a wide range of the key jigsaw pieces for establishing decentralised co-operative energy services are already under development and delivering services in England, Scotland, Wales and Northern Ireland.

The major challenge appears to be to work out ways to fit these pieces together and for practitioner networks first to agree a robust strategy and then to begin to collaborate on a green co-operative mission to decentralise and democratise energy-savings and energy generation services. One useful consortium that is co-developing a new sector like this is the Making Local Food Work alliance of seven national organisations including Co-operatives UK and the Plunkett Foundation (the lead body).<sup>65</sup>

Research by Brenda Boardman in 2007 for the Co-operative Bank and Friends of the Earth on Low-carbon Zones shows how to link up the existing partial solutions through a partnership model under the leadership of local authorities. The more recent work of nef on prospect for a Green New Deal dovetails well with Boardman's recommendations.

Tackling fuel poverty through a low-carbon zones approach can yield major benefits by even traditional gross value added measures. A University of Durham study in partnership with Neighborhood Energy Action evaluated the regional economic impact of the Warm Zones programme to tackle fuel poverty.<sup>67</sup> The findings highlighted an attractive local multiplier impact of green investment action with a one-year programme of £13.72 million in the North East yielding:

- £11.36 million of gross value added – a regional return on investment of 82 pence for each £1 invested
- 369 full-time equivalent jobs created regionally – 249 direct and 120 additional jobs
- A Sustainable Social Justice agenda led by co-operative good practice and effective local authority partnerships could lead to Green Well Fair outcomes.

The challenge now is to understand how we can turn this existing good practice and ideas into more focused and strategic co-operative energy action.

## Glossary of abbreviations and terms

CCA	Consumer Credit Act
CERT	Carbon Emission Reduction Targets
CDFI	Community Development Finance Institution
CHP	Combined Heat and Power
CLT	Community Land Trust
DECC	Department of Energy and Climate Change
ECO	Energy Company Obligation
EIS	Enterprise Investment Scheme
ESCO	Energy Services Company
FITs	Feed in tariffs
FSA	Financial Services Authority
Golden Rule	The first rule of the coalition government's proposed Green Deal plans. It states that expected financial savings must be equal to or greater than the costs attached to the energy bill.
Green Deal	A core provision in the Energy Security and Green Economy Bill aimed at revolutionising the energy efficiency of domestic and commercial British properties.
GET	Guaranteed Energy Trust
IPS	Industrial and Provident Society
OFT	Office of Fair Trading
Retrofitting	Refers to the addition of new technology or features to older systems. In the context of this report it specifically refers to the process of reducing the energy demand of housing through fitting energy reduction measures such as insulation, double glazing; and to increasing the energy generation of existing homes through fitting of low carbon energy technology such as solar panels.
RHI	Renewable Heat Incentive
ROC	Renewables Obligation Certificate
Solar pv	Solar photovoltaics
SVI	Social Venture Intermediary

## Appendix 1

### List of attendees at the Co-operative Renewable Energy and Retrofitting Round table, November 2010

Name	Organisation	Peter Andrews	Bath Community Energy
Angela Davies	The Co-operative Group	Petra Morris	Co-operatives UK
Anna Eagar	Community Energy Direct	Phil Beardmore	Confederation of Co-operative Housing
Aran Eales	V3 Power	Philippa Roberts	Low and Behold
Ben Norbury	The Co-operative Group	Richard Wilcox	Co-operative Financial Services
Bob Burlton	The Energy Saving Co-operative	Rob Ellis	The Co-operative Group
Charlie Baker	Urbed	Ross Weddle	Community Renewable Energy (CoRE)
Denice Jaunzens	Household Energy Service	Steven Glynn	Sustainable Change Co-operative
Hilary Sudbury	CDA (BRAVE Ltd)	Steve Welsh	H2ope
Hugh Goulbourne	Community Energy	Stuart Major	The Solar Co-op
Jo White	Co-operative Futures	Tom Hooley	V3 Power
Jonathan Atkinson	The Carbon Co-op	Tim Lunel	National Energy Foundation
Keith Richardson	Community Renewable Energy (CoRE)		
Marna McMillin	Energy4All		
Mark Wells	Sheffield Renewables		
Mary Rayner	Co-operatives UK		
Matt Fawcett	The Kindling Trust		
Michael Jacobs	Grantham Research Institute, London School of Economics		
Mike Pickering	Midcounties Co-operative		
Neil Allen	Loop Systems		
Nick Dodd	Urbed		
Pat Conaty	New Economics Foundation		
Paul Cooper	Hook Norton Low Carbon		
Paul Martin	Community Power Cornwall		
Paul Monaghan (Chair)	The Co-operative Group		

## Appendix 2

### Detailed examination of The Energy Security and Green Economy Bill

The core of the Energy Bill is the provision of a Green Deal aimed at revolutionising the energy efficiency of British properties – both domestic and commercial.

The government's key proposal is the Green Deal plan, a financing mechanism that allows energy consumers to repay the investment through their energy bills. The finance to be provided is not a conventional loan as households and businesses contracting to take on the plan are only responsible for the repayments for the time they are the bill-payer of the property. When the bill-payer moves out, any balance outstanding will be transferred to the incoming bill-payer.

To provide consumer protection, Green Deal plans will be vetted and must include eight pre-requisites. These are:<sup>67</sup>

- **The Golden Rule:** the expected financial savings must be equal to or greater than the costs attached to the energy bill (ie the retrofit improvements should lead to bill savings that offset the loan charges completely).
- **The measures must be approved** and the claimed bill savings must be those accredited through this process.
- **Accredited adviser:** the measures installed must have been recommended by an approved advice provider who has carried out an objective assessment.
- **An accredited installer** must install the measures.
- **Consumer Credit Act advice** that is appropriate and takes account of individual circumstances must be given by the Green Deal provider to households.

- **Current energy bill-payer consent** must be secured expressly by the Green Deal provider and additionally from other relevant parties.
- **Green Deal contract disclosure** must be given to subsequent bill-payers (eg new owners or tenants) along with energy performance information.
- **Collection of the Green Deal charge** must be carried out by energy suppliers and passed on within the regulatory safeguards for collecting energy bills – including protections for vulnerable consumers.

The Green Deal has been structured for operation and delivery by firms who can mobilise the capital funds for investment and who can secure government approval. These include the major energy suppliers and other private sector corporations that are gearing up to become involved included Tesco, Marks & Spencer and B&Q.<sup>68</sup>

The government is seeking to develop a competitive market in the provision of three customer-facing roles in the value chain, including: advisers, installers and plan providers. In addition to the energy companies and major retailers, the government is encouraging home improvement companies, builders' merchants, energy efficiency companies, housing associations and local authorities to provide one or more of the three core services.

In introducing the bill, the Energy Secretary Chris Huhne has forecast the creation of 100,000 jobs within five years and billions of pounds of investment. The implementation date for the first Green Deals has been set for autumn 2012.

Green Deal finance has been structured to fund energy efficiency measures primarily. The new Renewable Heat Incentive (RHI) has been designed to fund renewable energy measures for heating (space and hot water) while other micro-generation technologies come under FITs. Both these programmes are seen as complementary to Green Deal finance. However this means that energy bill repayment through the Green Deal cannot be utilised for the repayment of investment by households in renewable technologies. It is anticipated that the Green Deal adviser's property assessment will extend to an appraisal of these technologies and their carbon savings appropriateness.

For fuel poor households, the government acknowledges that the projected carbon savings from measures installed is likely to be less because extra benefits will be taken in warmer homes rather than cash savings on bills. To meet the Golden Rule, these households will require a higher level of investment per property for major measures.

To secure extra funds to achieve this, the government has announced the replacement of the Carbon Emission Reduction Targets (CERT) programme obligation on energy suppliers with a new Energy Company Obligation (ECO). It is expected that this programme will be in place from 2013 and funded by a fuel bill levy with an annual budget of £1 billion a year.

A core focus of ECO will be to provide funds to assist those on lower incomes to heat their homes affordably. Though the full details are still being negotiated, it is expected that ECO will also provide assistance to assist better off households to meet the Golden Rule for expensive measures (eg insulation for hard to treat properties with solid walls which were not previously provided for under CERT).

Existing grant programmes, including: CERT, Warm Front and the Community Energy Savings Programme (CESP) will expire at the end of 2012 and be replaced by ECO. For eligible households, ECO can be combined with Green Deal finance to provide a larger single package of finance measures.

The government marketing strategy is to promote the Green Deal through a broad range of participating organisations, including: energy companies, supermarkets, local authorities, home improvement stores, landlords, estate agents, local builders, energy efficiency installers and advisers and local community groups. The Green Deal has been designed to be flexible and to allow customer acquisition to be secured through sub-contractors and other agents of larger providers.

To secure carbon reduction targets by 2020, the Green Deal will need to upscale investment and housing retrofit action year on year. Skill training for upwards of 100,000 workers in the supply chain is a huge challenge. The big six energy companies will be the main drivers behind Green Deal and it appears that they will control ECO as they do CERT.



In September 2010, British Gas announced a £30 million investment plan to train and employ a green workforce of 3,700 by the end of 2012.<sup>69</sup> It has established the British Gas Energy Academy and already recruited 1000 new staff to enter its programme. Other energy companies are working on their plans. Most notably the British Gas strategy is a fully comprehensive 'energy services' model to supply a unified household package including energy supply, energy efficiency, domestic renewables, smart meters and maintenance.

Landlords can take up Green Deal plans with no upfront capital costs. The approach to landlords is reliant upon voluntary action but the government has reserved the right from April 2015 to regulate and enforce action, if necessary, following a performance review of the uptake of the programme. In any event, tenants will be able to request energy efficiency improvements from 2015. However in cases of serious disrepair and hazards, local authorities will be able to use their enforcement powers to compel private landlords to improve the worst properties. The focus in this area before 2015 will be on properties with Energy Performance Certificate ratings of Band F or G. The Energy Saving Trust has reported that the average cost of such an upgrade to a Band E would be around £3,000.

Green Deal finance through energy bills is not the only option. Consumers are free to finance work as they wish but the attraction of being able to pass on the liability for payment to future bill-payers is expected to increase the take-up of Green Deal finance. The government is expecting that banks, building societies and other consumer finance providers will be involved in the provision of Green Deal finance. Energy companies can also provide finance packages. The government projects that the private sector will provide at least £7 billion of capital.

Before they can operate, Green Deal finance providers will need to have a Consumer Credit license from the Office of Fair Trading (OFT). Additionally they will need to comply with affordability guidance that DECC will jointly publish with the OFT. Under the provisions of the Consumer Credit Act (CCA), consumers will be able to repay the Green Deal early. The government is proposing an exemption from CCA compliance where the act would normally apply to unincorporated enterprises, including self-employed people and partnerships.

As Green Deal finance is not secured to the property but through the energy bill, finance providers will look to energy companies for the collection of their credit repayments. Accordingly default on Green Deal charges will be treated just like any default on energy bill payment and energy legislation will be amended to allow for energy supply disconnection in extremis. For vulnerable consumers, suppliers will be prohibited from disconnecting households in the winter months (October – March).

The government aim is that loan interest charges for Green Deal finance will be low. What the likely charges are to be is still under discussion with banks and the investment community. However given the secured system of repayment, government has indicated that it would expect to see interest rates at the lower, current consumer credit range. Current projections estimate that Green Deal plan finance charges annually will range from interest rates of 6% to 12%.

Independent assessments are indicating that such high charges will not enable the Golden Rule to be achieved – certainly not for low income households but also for many better off households as well.<sup>70</sup> The government's calculations assume that 85% of the savings from the improvements will be made in cash savings and 15% in extra warmth and comfort. The trade off range between cash savings and comfort can frequently be the inverse of these figures.

The Confederation of British Industry has concluded that commercial interest rates without subsidy will not work and that as a result the Green Deal could become a 'lame duck'.<sup>71</sup> Ed Matthew of Transform UK has highlighted the success of the German system of 'green retrofit' where households can borrow up to £72,000 at an interest rate of 2.65%. The loan costs are so low because KfW, the public sector development bank, provides loan guarantees and the government provides interest rate subsidies.<sup>72</sup> The German system is being used to upgrade about 100,000 homes a year. According to Transform UK, the experience in Germany has shown that these incentives are essential to secure an uptake of measures by building owners.

The Green Deal has been designed to provide trusted, accredited installation of energy efficiency measures for households and businesses. Installers will need to be accredited and comply with an official quality mark covering product and material certification, warranties covering both materials and installation and Codes of Practice covering complaints and consumer redress.

All Green Deal providers (finance providers, advisers and installers) will need to be approved by meeting specific criteria and comply with Codes of Practice set out in the Energy Bill. These include:

- Appropriate levels of qualification, training and necessary competence (in relation to advisers and installers).
- Abiding by rules related to the marketing of the Green Deal to avoid unfair or misleading sales practices.
- A process for handling consumer queries and complaints before reference to an independent body for resolution if necessary.
- Required levels of insurance provision to provide warranties for the work carried out and to give consumer protection against faulty advice or installation measures.

The government explicitly states that the Green Deal can be shaped and developed by different umbrella bodies and has offered assistance to enable market entry for different approaches when the scheme begins:

'Green Deal is a market framework which offers considerable flexibility for a range of business models to compete. We will work with the relevant stakeholders to encourage a diverse range of business models.....to enter the market in 2012.'<sup>73</sup>

There appears to be a superb opportunity for the co-operative sector to develop a consortium model or other umbrella co-delivery framework to take up this challenge and at the same time to develop a trusted model of co-operative energy services.

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