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Working for England's World Class Region

Investing in the Green Economy – Options Analysis and Design Study

Prepared for: South East England Development Agency

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Executive Summary

Background
A key theme running through recent Government policy is a transition to a low-carbon economy. In recognition of this and the considerable associated economic and social benefits which this transition will realise, SEEDA has commissioned a project team of BRE, Forum for the Future and Business Support Kent to undertake an options analysis and design study into investing in the 'Green Economy'.

The project team investigated the potential for SEEDA to invest in an Ecological Funding Escalator (EFE) which would support place-based carbon-reduction initiatives. The potential for the EFE to provide three primary services was investigated:

1. Business development support
2. Project development and early-stage finance
3. Regional Carbon Compensation Fund (RCCF)

The aims of the research were to:

1. Review and evaluate the demand for funding and support that place-based carbon reduction groups require in the development of carbon reduction projects.
2. Provide recommendations for appropriate support (financial and non-financial).
3. Quantify the demand for a RCCF.

Findings
Research into place-based low-carbon projects identified four main project types:

1. Community renewables projects - energy generation from renewable sources, e.g. wind, solar, hydro and anaerobic digestion
2. Combined heat and power installations and district heating
3. Social housing refurbishment
4. Private housing refurbishment

Each project type has different economic, environmental and social returns; some reduce carbon more cost effectively than others, while others have greater social benefits. An EFE should be able to support all types of place-based carbon-reduction projects and throughout the course of this research a wide variety of projects and associated groups were researched. Early on in the project it was recognised that considerable interest in community renewables projects exists in the South-East and in turn these projects have considerable potential to deliver both social and environmental benefits. A decision was therefore taken to make the development and support of community renewables projects the focus of this work.

The project team interviewed a variety of place-based low-carbon projects, project support organisations and project financers throughout the course of this research to formulate their findings and recommendations.

Discussions with a variety of groups involved in running, supporting or financing community renewables projects enabled the project team to identify five stages of development for place-based carbon reduction groups.

- LEVEL 1 – ROUND THE KITCHEN TABLE - A number of local people interested in cutting carbon
- LEVEL 2 – GOING PUBLIC - A group formed or existing group expanding to meet this need –
- LEVEL 3 – ENTHUSIASTIC ACTION - Established group - likely to be working on behavioural change and could develop low cost place-based refurbishment project
- LEVEL 4 – THE PROJECT -adopted a project, created a company/business plan, raised capital for a feasibility study – ready to build
- LEVEL 5 – RAISING THE MONEY, seeking funding for investable project
- LEVEL 6 – 'SUSTAINABLE' COMMUNITY BUSINESS

Three primary financial barriers were also identified:

1. The up-front expenses required to support the initial stages of community renewables project development
2. The inadequate financial returns in the short and medium term for typical community renewables projects
3. The inability to raise equity due to a lack of 'investability' - often a symptom of a lack of appropriate organisational structure, successful 'track record' and the inadequate returns noted above

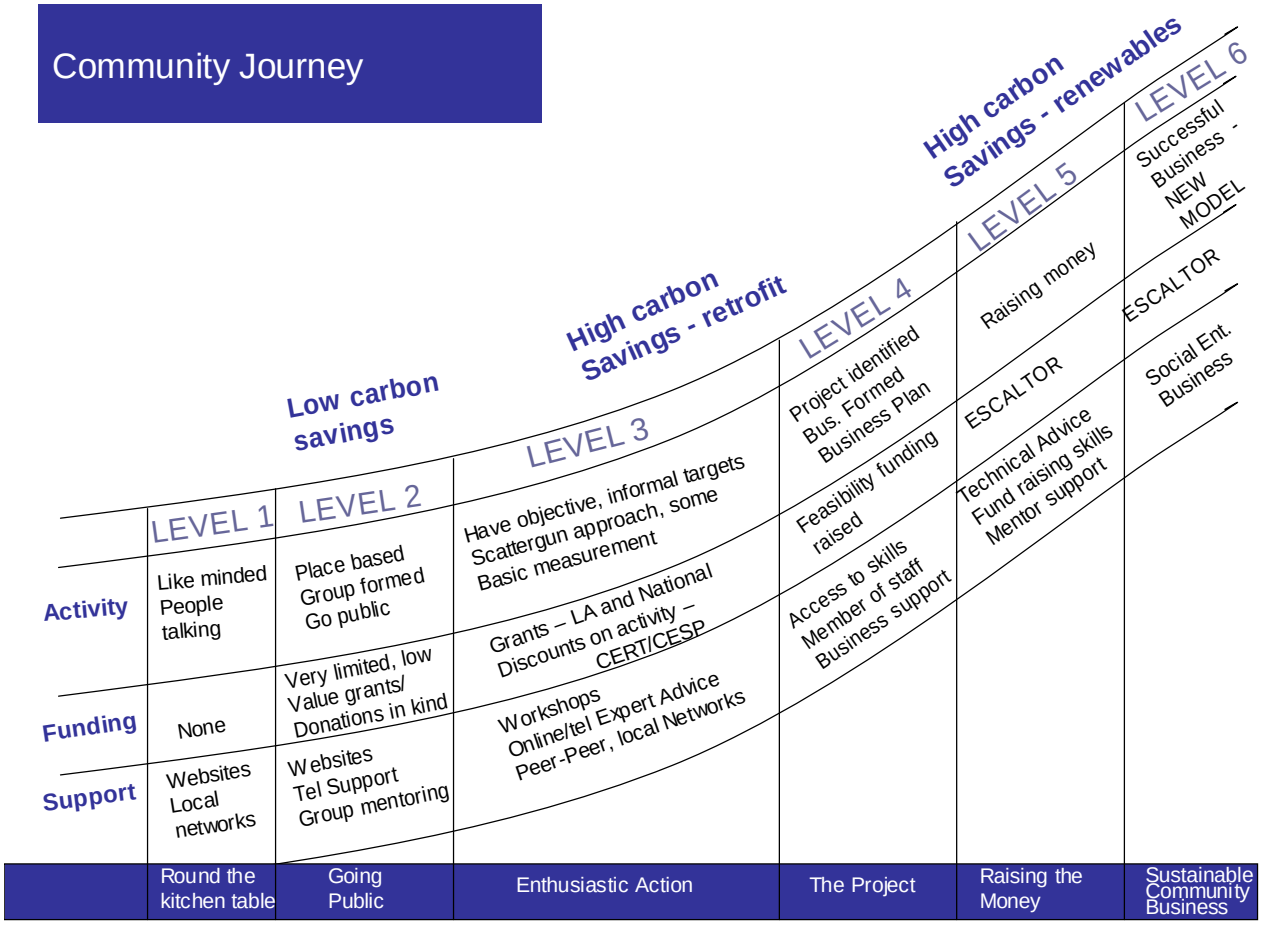
It is believed that the RCCF approach is not appropriate for SEEDA for two reasons:

1. The carbon offsetting/compensation model, whereby projects receive a payment for every tonne of emissions they reduce, is not an effective way of funding community renewables.
2. There is insufficient voluntary and compliance demand for emission reductions from UK projects, due to the lack of a formal mechanism to account for such reductions, to generate enough revenue to ensure the ongoing financial viability of the RCCF.

A more promising approach would be a fund which generates financial returns from its support of such projects. There are a variety of forms that these investments could take, for example direct equity in projects, or the underwriting of commercial investment for a fee – the key quality of the fund should be its ability to take advantage of these different investment options and choose the most appropriate for the project and organisation.

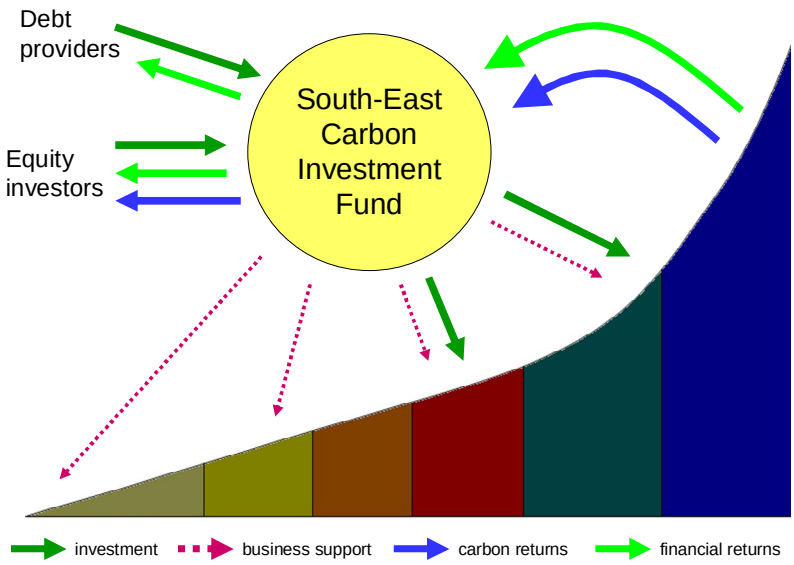
As funding is by no means the only barrier to success for community renewables projects SEEDA correctly identified the need for an Escalator to provide appropriate non-financial support to place-based initiatives. We believe that it is a key success factor for any fund that the administration and delivery of appropriate non-financial support is undertaken by the same entity that administers the financial elements of the fund.

Figure 1: The place-based carbon reduction group development journey



During the process of providing support services, those place-based groups which demonstrably progress from one stage to another are precisely the sort of groups that are likely to be good risks from an investment perspective (Figure 2).

Figure 2: The escalator and the investment fund



Contents

1 Background

The Climate Change Act 2008 committed the UK Government to an 80% reduction in CO_2 emissions on 1990 levels by 2050. The challenge for the UK therefore is to deliver against this ambitious and unprecedented target whilst simultaneously growing the economy, and enabling individuals and businesses to fully realise their potential unhampered by potential carbon related constraints.

In July 2009 the UK Government published a number of documents which outlined the initial strategy to deliver against this target. Amongst these '*The UK Low Carbon Transition Plan*' in particular detailed plans for developing a low-carbon economy in the UK and identified the need for considerable investment of capital into low-carbon projects.

In recognition of both this policy context and the associated benefits of investing in the Green Economy the South East England Development Agency (SEEDA) have requested that BRE, Forum for the Future and Business Support Kent (the Project Team) undertake an options analysis into how they can best support the development of place-based low-carbon initiatives.

The benefits of investing in the green economy

- Carbon reductions
- Energy security
- Help the UK Government achieve legally binding carbon reduction targets
- Economic development and job creation
- Enhanced community development and cohesion

A place-based carbon-reduction initiative exists to deliver projects which will lead to reduced carbon emissions for a specified location. Such projects can be either community led, 'bottom-up' initiatives or 'top-down' institutionally led, for example through a Local Authority. A key criterion of such place-based projects is that they are not purely commercial in their focus and have a commitment to social enterprise and development. Place-based groups which lead such initiatives are subsequently likely to be charities, some form of social enterprise or from the public sector.

This intrinsic association with a place has the potential to provide considerable added-value. Typically a place-based initiative should be created as a reflection of the needs of the locality, taking account of specific cultural, technological and economic needs and opportunities.

1.1 An Ecological Funding Escalator

A mechanism SEEDA has suggested for the delivery of this investment in place-based initiatives is an 'Ecological Funding Escalator' (EFE). It was suggested that the EFE would consist of three elements:

1. **Business Development Support**

Support services for place-based carbon reduction groups that wish to develop into formal enterprises that develop specific place-based carbon reduction projects for which they need to raise funding.

2. **Project Development and Early-stage finance**

The provision of financial support to place-based carbon reduction groups – taking into account existing financial support mechanisms and how any EFE could compliment these.

3. Regional Carbon Compensation Fund

The development of a South East orientated fund in which individuals and organisations could invest in return for an 'offset' of carbon emissions. The money raised being used to support place-based carbon reduction initiatives.

The role of the Project Team therefore was to undertake research into the potential to develop such an Escalator. This report represents the output of this research and principally covers:

- The four types of place-based carbon reduction projects that have been identified as having the most potential for the EFE.
- The development stages of place-based carbon reduction projects and groups.
- The factors which influence the organisational and financial success and failure of place-based carbon reduction initiatives.
- The financial barriers facing place-based carbon reduction groups and projects with a special focus on community renewables projects.
- The potential role of carbon compensation / offsetting within a project funding mechanism
- Our recommendations for how SEEDA should go forward with the development of an Ecological Funding Escalator.

A note on language

Place-based carbon reduction initiatives – is a catch-all, overarching term for place-based activity.

Place-based carbon reduction groups – are the informal groups which come together to investigate the potential of developing place-based projects.

Place-based carbon reduction projects – are the actions that are taken by the place-based groups

2 Project Context

This section outlines the four main types of place-based carbon reduction projects. It describes how these are best achieved in relation to a top-down or bottom-up approach within a locality, and the scale of investment in each project. It shows that commercial sources of finance favour larger, top-down projects. It shows how there is a need for policy intervention to enable smaller, bottom-up projects that have important social, environmental and economic benefits to be supplied with finance and support to reach their potential. Later sections go into detail on what the support needs of place-based groups are, the options for delivery of these and the main factors are that control the success of groups and projects.

2.1 Carbon reduction projects

Place-based initiatives can contribute significantly on a national level to carbon reduction in a number of different ways.

We have identified four main types of renewable energy, low carbon energy generation and energy efficiency project. These types of projects have great potential to reduce the UK's carbon emissions. Energy generation has the realistic potential to reduce emissions by 60 million tonnes by 2020 and housing can contribute 22 million tonnes of reductions. These areas can be impacted upon by place-based initiatives effectively as they do not require centralised coordination or technology shift.

The four projects types discussed in detail below are:

1. Community renewables projects - energy generation from renewable sources, e.g. wind, solar, hydro and anaerobic digestion
2. Combined heat and power installations and district heating
3. Social housing refurbishment
4. Private housing refurbishment

2.1.1 Community Renewables Projects

Overview
Renewable and low-carbon heat generation are possible at the household (microgeneration) scale (typically generating 1-2.5kW per device, costing up to £25,000). However, greater efficiencies of generation from larger installations can be achieved with projects at the community scale (where project capacity ranges greatly from 5kW for a community building solar PV to 50MW for a rural wind farm). This scale will qualify for the feed in tariffs (FITs) that are designed to boost earnings for renewable projects to give returns on investment of 6-8% (actual returns can differ greatly depending on design and other factors). The FIT technologies include:

- Wind;
- Solar photovoltaics (PV);
- Hydro;
- Anaerobic digestion;

- Biomass and biomass combined heat and power (CHP)

Case study: Low Carbon West Oxford (LCWO)
The idea of LCWO is 'to pilot a community renewables building society'. This is based on small-scale renewable energy projects with a pipeline of £1.4 million in urban West Oxford. The revenues will be used to support low carbon living in West Oxford with the vision of achieving an 80% reduction in emissions in West Oxford by 2050. The group was established in 2007 after summer floods in the area, merging with the West Oxfordshire Community Action Group. Their focus has been on leasing roofs for installations of solar PV. They also plan to install a small hydro generator at Osney Weir and wind turbines on land in the area. The activities of LCWO have won many plaudits. They are finalists in the Big Green Challenge and winners of the Low Carbon Communities Challenge. This has provided them £500,000 as a grant and the rest is being raised via an Independent and Provident Society share issue and bank loans. They have gained pro bono expertise from local consultancies and lawyers.

These projects are high-profile and visible, providing a sense of energy security. To increase the community involvement and cohesion, installations can be joined using the electricity grid in local areas into a 'micro-grid'. This allows energy to be generated and bought within a community, providing a sense of self-reliance and community resilience. The savings can be easily counted and quantified to enable carbon credits to be verified. As LCWO have shown, financial returns can be channelled into further reduction projects in the community, such as household energy efficiency.

2.1.2 Community Combined Heat and Power and District Heating

Due to the typical scale of finance and heat load required to make a combined heat and power (CHP) project viable these projects are typically institutionally led (top-down) as opposed to community led (bottom-up) projects (see Figure 3). In particular, Local Authorities have developed the most successful examples of these projects, for example in Woking (see case study) and Aberdeen. Local Authorities have the advantage of being responsible for the operation of a range of large buildings with differing heat and electricity demand profiles and being able to raise low cost debt finance due to their credit rating.

A primary benefit of CHP projects is the efficiencies which are achieved and the resulting carbon savings; typically community CHP systems are installed to replace large carbon intensive oil fired heating systems.

Due to the institutional support and scale of these projects, if structured properly, they can be an attractive investment for commercial finance (see Figure 3).The number of possible installations is limited by the distribution and heat load of urban localities as due to the pipe network they need, they are most cost effective in dense, high heat load locations.

Case study: Thameswey Energy, Woking, Surrey
Woking Borough Council established a wholly-owned Energy and Environmental Services Company, called Thameswey Group, which enters into public/private joint ventures to tackle climate change across both public and private sectors. Established in 1999, Thameswey Group has generated savings of nearly £4.9 million for the Council, and further savings for householders and businesses in the Borough. Schemes include the first town centre private wire CHP/absorption cooling district energy system in the UK. The site exports a minimum of 30% surplus power to sheltered housing residents and other local authority buildings. They have now started similar projects outside Woking, which increases funds available for projects in Woking that are not commercially viable. Success is built on the entrepreneurial spirit that establishing a company requires and the political will of the Council's leaders. Financially they raise capital from debt markets using the borrowing powers of the Council. Thameswey are sharing their learning with community groups via Forum for the Future's Climate Finance initiative.

2.1.3 Social Housing Refurbishment

The energy efficient refurbishment of social housing projects has considerable benefits in thermal comfort for those members of the community who directly benefit from the programme and in generating financial savings for those in fuel poverty. A further benefit can arise through the employment of local contractors to undertake the work. Considerable carbon savings can be accrued from social housing refurbishment projects; the worse the condition the housing stock, the greater the savings. A potential problem exists however in guaranteeing the actual volume of carbon savings that will be achieved due to the inability to account for user impacts such as heating homes for longer or to a higher ambient temperature.

A considerable number of potential projects exist, and funding for this work is typically sourced from utility companies through the Certified Emission Reduction Target (CERT) scheme (and in the future Community Energy Saving Programme) and government grants. These projects are also often top-down initiatives led by the property owners. This has the benefit of one decision maker for many properties but can miss opportunities to involve the residents fully. There is currently a major barrier to large scale financing of social housing retrofit as rents cannot be increased to recoup up front costs, even if the increases are less than the savings in energy bills. Efforts are currently being made to rectify this.

Case study: Gentoo Green, Sunderland

Gentoo is the primary Registered Social Landlord in Sunderland with a housing stock of 29,500 homes. Many of Gentoo's tenants are in fuel poverty or are classed as economically vulnerable. Having upgraded all of its housing stock to Decent Homes Standard in 2005, five years ahead of target, Gentoo committed itself to a further round of home improvements to its own "Decent Homes Plus" standard. Measures included in these refurbishments included installation of modern kitchens and bathrooms, some energy efficiency measures and modernisation of interiors.

Of the 1,500 Gentoo homes that were already due to be refurbished to meet the Decent Homes Plus standard, Gentoo selected 173 homes to participate in the Retrofit Reality project. Homes participating in Retrofit Reality benefited from the following measures:

- **Solar thermal panels** these reduce carbon emissions by using the sun's energy to heat water used in the kitchen and bathroom rather than fossil fuelled boilers
- **A rated condensing combination boilers** which provide space and water heating at a much higher level of efficiency than conventional boilers
- **Double glazing** to reduce energy loss via single glazed windows
- **Energy efficient showers** saving energy on the heating on water
- **External insulation** to reduce heat loss through the walls for homes with solid walls which make cavity wall insulation impossible

Different homes received different measures based on technical feasibility and cost effectiveness in reducing carbon emissions. All homes received at least one measure in addition to the standard energy efficiency measures that would have been installed to meet Gentoo's own Decent Home Plus Standard.

According to calculations undertaken by BRE, the project reduces emissions by around 230 tonnes per year or 2,300 tonnes over 10 years, with an average emission reduction of just over 1.3 tonnes per home per year.

2.1.4 Private Sector Refurbishment

The potential to deliver carbon savings through the refurbishment of private dwellings in the domestic sector is enormous, and the political will of the UK Government now matches this opportunity, as demonstrated in the Heating and Energy Saving Strategy. The primary barriers to realising these carbon savings are:

- Motivating home owners to act
- Helping homeowners to understand what actions they can actually take to reduce their energy use
- The up-front financial cost and hassle of undertaking the refurbishment work
- Lack of industry capacity to deliver

Much work has been carried out in the UK and other countries to develop an appropriate financing and delivery model to assist homeowners who do want to act and to encourage more households to do the same. One such model being trialled in the UK is 'Pay As You Save' (PAYS) (see Section 5.5.3 for an explanation of PAYS).

One way in which a SEEDA fund could help finance savings in the private domestic sector would be to fund the capital cost of refurbishment to be paid back against anticipated energy savings. In order to ensure the security of SEEDA's loan it would be important to make repayments not dependent on actual energy savings realised.

Case study: Refit West, Bristol City Region
Refit West is a Community Investment Company managing a "one-stop shop" service of loan providers, advisors and builders for private housing retrofit in the Bristol City region. It was established by Forum for the Future to design and establish a large scale private sector housing whole-house retrofit service. It focuses on raising demand from householders, raising capital and running a £10 million loan fund and managing the delivery of measures with a consortium of contractors. Its aim is to cut the energy bills and CO_2 emissions of 1000 homes by a minimum of 30%. That means an average saving of £400 on each household's energy bills and a saving of two tonnes of CO_2 – 2000 tonnes a year once the project reaches its target. They are currently at the stage of starting 10 demonstration retrofits. The novelty of this market, high running costs at small scales and the unproven demand have been barriers to raising the large scale of debt finance required for the loan fund to operate. However, there has been substantial interest in the scheme from financial institutions. Forum for the Future are keen to share the learning with other communities and local authorities interested in establishing retrofit loan funds.

2.2 Matching project type, organisation type and finance sources

The choice of project type affects the nature of support and finance required by place-based organisations. The factors affected by project type are:

- Finance required
- Available funding sources
- Reliance on larger institutions (e.g. utilities, local authorities, RDA)
- Scale of project

The ways that these factors relate to the viability of these projects is shown in Figure 3. This shows the ideal project size in terms of finance required for different project types and the ideal mix of grass roots community groups and larger institutions for the project types. Commercial financial institutions (e.g. banks and pension funds) are most attracted to projects that are large (at least £500,000) and preferably with a significant financial interest from a local authority or large enterprise. This is because of the large overheads in the due diligence for carbon reduction project financing and the security that large institutions bring.

Therefore, current provision of finance is dominated by commercial finance which is concentrated at the large project / large institution end. The Cooperative Bank would be at the community end of this and

Royal Bank of Scotland at the large institution / large project. Supplies of semi-commercial finance required by smaller scale and community-led projects are limited, particularly in the community energy and PAYS retrofit project types. Public policy intervention should concentrate on expanding the reach of commercial sources of finance down into the space that is shown as semi-commercial.

The Feed-in-Tariffs will make community energy more commercially viable. However, commercial finance has not yet developed finance packages for sub-£500,000 projects. This means that large CHP projects and large community energy projects have a greater potential to attract commercial finance, the greatest barrier to their success is the support of the relevant Local Authority.

The benefits of encouraging place-based groups to undertake projects that fit this currently semi-commercial space are great. These projects have large potential for social, economic and environmental benefits (See Table 2). There is though a market failure that needs to be addressed in new ways as public intervention has concentrated on using piece-meal grants for this scale of project. Funding would be better utilised to support new models that are appearing (e.g. Green Valleys, CoRE and the in development OMNI Empower Fund) that operate on a semi-commercial basis. Using public money to underwrite and provide subsidies are other ways to attract commercial finance to these semi-commercial projects. There is a role for small grants to enable behaviour change programmes in local communities. Forms of delivery for domestic PAYS retrofit are being developed during 2010 and 2011. It is clear that to achieve the scale required for commercial investment PAYS will need to be delivered through large loan funds with a mix of community and large institutions involved. Social housing retrofit currently has a legal barrier to recovering costs from tenants, therefore it is unsuitable for semi-commercial financing until actions to rectify this are successful.

Analysis presented in later chapters on a potential role for carbon credits in this system shows that while placing a financial value on carbon savings achieved by such projects can improve the attractiveness of *some* projects, if the savings are assigned to the right investor, very few projects can be financed only on the basis of the carbon savings they achieve. Therefore, carbon credits are not explicitly depicted as a source of investment in the diagram below. However they can potentially increase returns of some projects. The exception is social housing. Since social landlords cannot currently capture the value of energy savings created by such projects for legal reasons the only possible source of semi-commercial finance would be the sale of associated carbon reductions. For that reason, social housing is also not shown in the diagram as there is currently no formal system for accounting for such carbon reductions that would be recognised by investors as a basis for calculating financial returns.

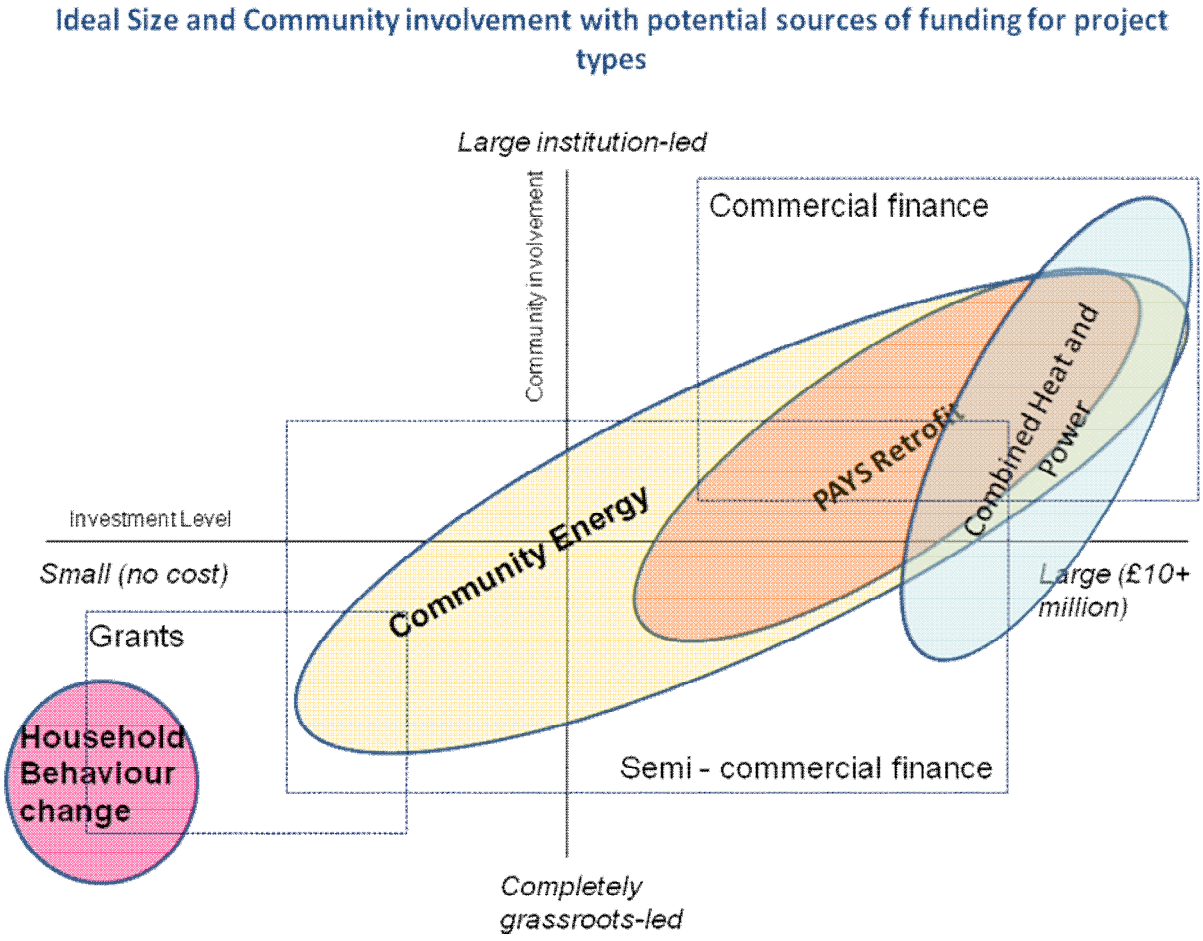


Figure 3: This shows the ideal mix of community ownership and project finance size for the four project types (with domestic energy split between behaviour change and PAYS funds) in the coloured ovals. The boxes show which parts of this are covered by different types of finance.

2.3 Wider Benefits of Project Types

There are very significant economic, environmental and social benefits from public intervention to stimulate the green economy: job creation, gross value added to the economy, enterprise creation community cohesion and empowerment, capacity building, carbon, resource use and waste reduction.

The potential to realise benefits varies between the project types. These non-financial returns are also not necessarily aligned with financial rates of return, which reveals the current market failure. Of the project types, domestic refurbishment has the most potential to save carbon, create economic growth and jobs. This is due to the scale of the opportunity (millions of homes, each of which has to be treated separately) and the requirements for skilled workers to survey and install energy measures. These projects are based on energy efficiency and insulation measures that have the lowest costs per tonne CO_2 saved and the greatest potential to generate financial savings. In terms of financial returns, large-scale, area-based refurbishment programmes should create commercial returns on investment; new mechanisms such as PAYS are being created in the UK to enable this to happen. Social housing is similar in that there are large opportunities for blanket refurbishment, however funding them commercially is not currently viable because

a change of law is needed to enable landlords to recoup the financial savings and in turn get a return on their investment.

Community renewables projects could be introduced into every community in the South East, saving carbon, creating tens of thousands of jobs and stimulating local clean-tech businesses and suppliers. Community energy and refurbishment projects also have the greatest opportunity to raise awareness of energy use and generation, which can be a catalyst for further behaviour change. Individual CHP projects are the most commercially developed and there is significant scope for many urban areas in the South East to develop community scale CHP. Due to the previously mentioned specific requirements of large-scale CHP however, the opportunities for these projects and associated benefits is more limited than for community renewables projects.

Table 2: The four different project typologies, sources of finance and returns on investment

Project Type	**Financial Return on investment**	***Social, Environmental and Economic Returns***		
		Feasible carbon savings across South East	**Cost per tonne of CO2 abated**	**Regional Jobs creation potential**
Community renewables	Poor to Good	Medium-High	High	Medium-High
Combined heat & power	Medium – Good	Medium	Medium	Low-Medium
Social housing refurbishment	n/a – cannot capture returns	High	Low-Medium	Medium
Private sector refurbishment	Poor to Good	High	Low-Medium	High

2.4 Opportunities for place-based, community action in the South East

This research project has mapped over 205 individual community groups in the South East working on 'green projects' with a further 376 being identified through the Energy Saving Trust. The descriptor of 'green' has been used to encompass a wide range of activities including waste management, recycling, climate change awareness and mitigation, and low carbon activity including renewable energy projects. The research has not included groups working primarily to improve the quality of the local environment such as Britain in Bloom or similar biodiversity/natural environment groups. It has not incorporated other strong socially focused community groups.

The majority of the more established 'green' groups were part of wider community movements such as those listed below. There are however a significant number, over 20% of those who responded to an online survey commissioned through this research, that work independently of umbrella organisations; however many value their links and partnerships with other groups.

It is anticipated that the total number of 'green' community groups across the region will in truth be higher as many smaller groups, with lower profiles and a less networked approach are 'invisible' beyond the local sub region.

'Green' Community Organisations operating in the South East of England

Transition Towns- 26
Greening Campaign -100 (140 nationally)
Community Action Groups – 24
Energy4All – 1
Freegle – 44 (213 nationally)
South East Rural Communities Council members – 6
Energy Saving Trust - 376

Specifically for this research project an online survey was carried out during November and December 2009 into 'green' community groups in the South East. The Survey was supported by Climate South East and their members, and additionally the Greening Campaign, Community Action Groups, the South East Rural Communities Council and Transition Towns. The survey was sent both directly to community group members and virally through networks and contacts. It is estimated that over 300 community groups in the South East were reached. A total of 101 responses were received, a high participation level which demonstrates the interest and commitment of the groups contacted.

The survey provides a snapshot of views from a wide range of groups. It was specifically targeted to draw out general barriers and issues as well as more specific points around the formation of businesses, acceptance of funding structures and to assess the appetite of groups to develop more focused action.

See Appendix 2 for an overview of the results from the Community Groups Survey.

3 Methodology

The timescales for the delivery of this project were very tight. In recognition of this it was necessary to be as effective and efficient in the collection and analysis of data as possible. In delivering this project the following process was undertaken:

1. Mapping of organisations active in the low carbon arena
    - Place-based groups
    - Support organisations
    - Funding bodies

2. Contact with relevant organisations
    - Face-to-face interviews
    - Phone interviews
    - Online survey

3. Analysis of findings
    - Individually
    - Project team

4. Identification of key learning points
    - Organisational support requirements
    - Place-based group development path
    - Funding requirements of groups
    - Requirements of funding organisations

5. Financial analysis of existing place-based carbon reduction projects

6. Development of potential Ecological Funding Escalator structure

7. Financial models to support place-based carbon reduction projects

3.1 Mapping of organisations active in the low carbon arena

Primarily a desk-based exercise this process enabled the project team to share their collective knowledge of the UK carbon reduction arena. A map was produced which identified place-based carbon reduction projects, appropriate support organisations and low-carbon project funding sources. This process helped the project team to develop a common, comprehensive understanding of the project context at the very start of the project.

The map was subsequently used to identify the organisations the project team would contact and seek input from.

3.2 Contact with relevant organisations

The project team assigned an order of importance to each of the organisations identified in the mapping process. This identified those organisations which we most wanted to gain input from and whether we

would attempt to make this through a face-to-face meeting or via a phone call. Responsibility for contacting organisations and arranging meetings was then distributed within the project team as most appropriate.

An online survey was developed which was sent to an estimated 300 place-based organisations via local support organisations.

3.3 Analysis of findings

The analysis of findings was an ongoing process taking place as new information was gained from our interviews. Due to the project team consisting of three different organisations, initial analysis of data took place within each of these organisations before being subject to a second, more thorough analysis with the project team.

3.4 Identification of key learning points

This two-stage approach to data analysis maximised the efficiency of the data analysis process enabling the project team to quickly identify the key points that need to be learnt from in the development of the Escalator and communicated within this report.

3.5 Financial analysis of existing place-based low-carbon projects

In order to establish the best ways to financially support place-based carbon reduction projects it is necessary to understand the basic financial requirements of a variety of projects representing a range of locations, funding structures and technologies.

Investigation of the potential to develop a Regional Carbon Compensation Fund for the South East was a key component of this research. Subsequently detailed analysis was undertaken into three existing place-based carbon compensation funds.

3.6 Indicative structure for an Ecological Funding Escalator

Using the findings from discussions with place-based carbon reduction groups, support organisations and funders a structure for how the Ecological Funding Escalator could best support place-based carbon reduction projects in the South East was developed.

3.7 Recommendations for financial models to support place-based carbon reduction projects

Analysis of the financial models of existing place-based carbon reduction projects, existing carbon compensation funds and interviews with funders enabled us to make indicative recommendations for the most effective way in which SEEDA can financially support place-based carbon reduction projects.

4 Development of place-based carbon reduction groups

Place-based low carbon groups share many development challenges with social enterprises in other fields and with start-up businesses. However, they also have particular traits and requirements that set their needs apart. For example, they often set huge ambitions to attract and retain a critical mass of volunteers and momentum. This puts an emphasis on visioning, and continued communications and community engagement and is a diversion away from business development. On top of the usual challenges of setting up a business, groups must also stay on top of a rapidly shifting policy and regulatory context - which may be critical to business viability - and find it hard to learn from similar examples because they either do not exist or are geographically remote.

It will be the role of the Ecological Funding Escalator to provide support to groups to enable them to address these conventional business development challenges while recognising the unique qualities and issues associated with a volunteer community led initiative. Table 5 highlights some of these unique qualities of place-based carbon reduction groups as well as the issues that they face.

Table 5: Characteristics of the Community Group

Community group/ social enterprise profile 	§ **Hunger for replication -** socially and environmentally motivated vision and goals create a strong appetite for sharing the learning and dissemination. § **Hugely ambitious and unfocused for a reason -** in order to attract and retain a critical mass of volunteers and momentum, early organisations must set compelling goals and allow individuals to pursue their own passions to keep them engaged and contributing. Early goals are often most effective when they are 'visible', quick and relatively easy: everyone achieves. Such success appears to provide a firmer foundation for more complex future development. § **Anxiety about profiteering –** groups often don't know about intellectual property matters and are sceptical that both professionals getting involved in the business and external profiteers may take advantage of all their hard work. Groups want to remain in control. § **Culturally, a social / environmental not a business mentality** - which creates inertia particularly in early development stages. § **Cycles of poor forward / contingency planning cause inertia and extreme busyness** as they try to 'do it all' in individuals' spare time. § **Individual entrepreneurs are central to success** - that are business minded, well connected and experienced in start-ups - not organisations per se. § **Local knowledge and legitimacy to broker community solutions but little connection with strategic goals** – keen to connect with local and regional priorities, but this is often a step too far for busy individuals in their spare time. They often don't know useful resources, e.g. heat and energy maps or climate impact risk registers, exist. § **Keenness to 'reach out' into communities, particularly to more disadvantaged areas –** groups tend to be keen to involve people beyond the 'usual suspects' around the carbon agenda. The main challenge for them is finding effective ways of doing it.
In relation to the low carbon field	§ **Time-consuming search for national / international examples -** of entrepreneurs and groups who have 'done it before' so that South East groups can get to the right answers. § **Public sector 'customers' are particularly important –** particularly as a large 'first customer' to kick start new business models. § **Being in an innovative field requires particular ways of working -**

	o partnership working more so than in other fields of social enterprise o collaboration with universities on research/ feasibility assessment o horizon-scanning/ planning for uncertainty to address regulatory/ policy changes o specific skill sets – or access to those skill sets – to act on opportunities: engineering, legal, renewable technologies, finance, experience of negotiating planning and other regulations § **Coping with uncertainty at the edge of viability -** Operating at the edge of viability. Searching for business models that are on the edge of viability, whose viability can be dependent on regulatory, legal/ policy changes. § **Often kick-started by a local 'trigger'** such as local flooding events in 2007 which was the case for Low Carbon West Oxford and OVESCO.
In relation to South East Region 	§ **Regional pioneers want to collaborate locally and globally -** social enterprises have strong local roots and identity and are keen to link up with other organisations on a local basis, but because they're pioneers, they must look harder for ideas, support, and learning exchange. § **Funding and 'political clout' are drivers for place-based knowledge exchange –** as more established groups appear to want to join with other likeminded groups to make their voices heard. Many of the most successful groups have also engaged with and understood local funders needs and drivers. § **Impetus for regional collaboration is likely to grow over time -** at an early point in the curve of low carbon social enterprise development, regionally specific communications are not needed. As more pioneering practice establishes in the region, this will change.
A variety of group types with different development trajectories	§ **Community Groups with potential to engage in the low carbon agenda** – thousands of place-based groups exist across the South East of England. Many are topic specific, linked to a community institution such as the school, village hall, local societies or interest groups such as Britain in Bloom. Many of these entities fit within some form of loose grouping [e.g. PTAs, Women's' Institute] but are not actively targeted. They are often well organised and contain many characteristics of groups who have been successfully working on low carbon and have potential to engage with 'low carbon'. § **Independent 'Green' Community Groups –** often started by a passionate or concerned individual, who are well networked in the community. Research indicates that at minimum of 23% of all groups in the South East Region are independent. They can be highly successful, but are often defined by local individuals with high levels of knowledge and excellent networking. § **Grass Roots Community Clusters –** generally started by a person or people with a passion, they offer membership, networking, experience and, often, structural guidance. Some of the most dynamic groups in the South East have, or are part of, Community Clusters. They appear to gradually outgrow this support in their growth and expansion. § **'Created' Community Groups** – an example of this is the Energy Saving Trust's Green Communities group, but several larger local councils offer support. Knowledge transfer is linked to the umbrella organisation's targets/ needs and can be well resourced.

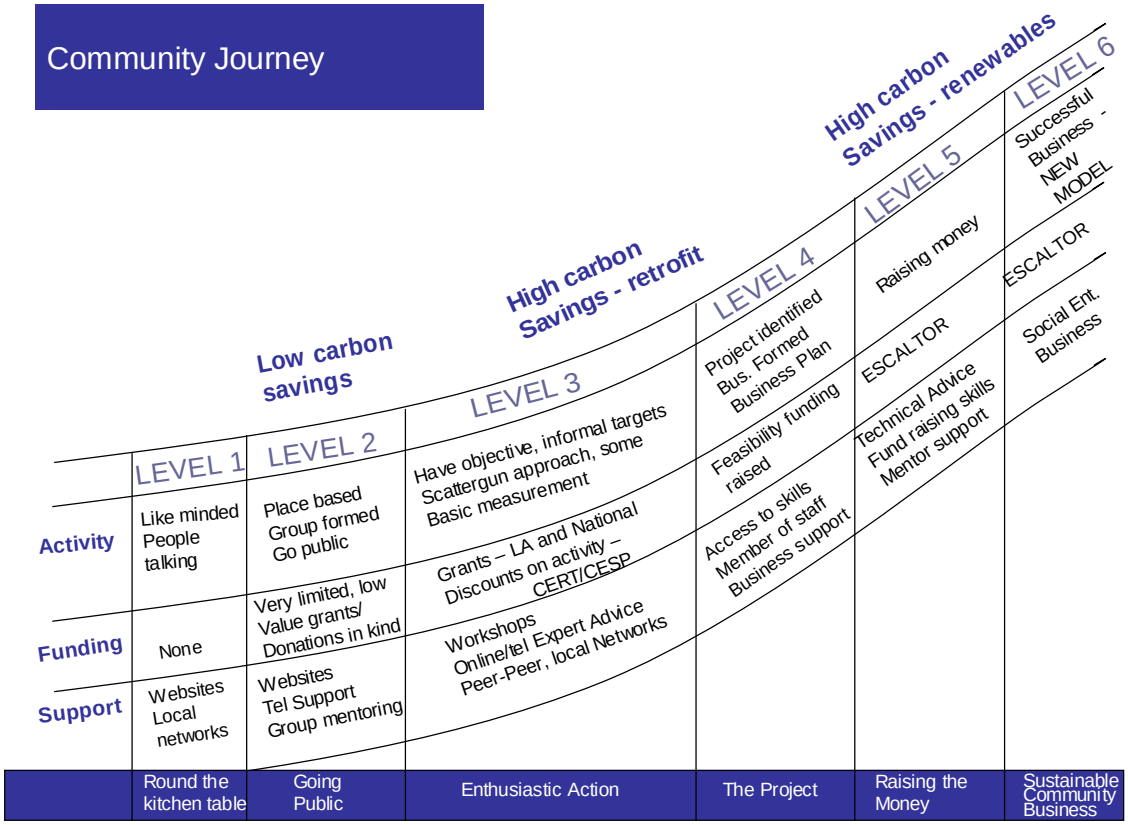
4.1 Community Journey

From the in-depth discussions that we have engaged in with place-based groups during this research and through analysis of the survey results it is possible to form an understanding of the typical development journey that a community follows in developing a place-based carbon reduction group. This development journey has 6 development stages outlined in Table 6 and Figure 4.

Table 6: The six stages of place-based carbon reduction group development

Level	Name	Description
1	Round the kitchen table	A number of local people have got together and are talking because they share an interest in cutting carbon
2	Going public	A group has been formed or an existing group has been expanded to take undefined action
3	Enthusiastic action	An established group - likely to be working on low-cost action such as behavioural change. Seeking small scale, ad-hoc funding
4	The project	The group is now a formal undertaking and has adopted a single project to pursue which requires a feasibility study and funding
5	Raising the money	Actively seeking funding through the promotion of their project prospectus
6	Community business	The first project is up and running and they are either: 1. Maintaining this successfully 2. Back at Stage 4 pursuing the next project 3. Looking to share their learning and develop a business helping other communities develop projects

Figure 4: The place-based carbon reduction group development journey



4.2 The 6 Levels of Community Development

Being able to accurately position a place-based group in its development journey is of considerable importance to the Ecological Funding Escalator because this will determine the level of support they the group receives from the Escalator. The Escalator does not want to be providing costly support to a group which is not ready for it; alternatively it does not want to be providing low-cost, basic support to a group with a well-defined investable project in need of specialist services.

Having assessed and synthesised the research material from communities in both the South-East and across the UK it has been possible to identify the following for each level of group development:

- Identity – what gives the group its identity, what would you see looking from he outside at the group?
- Actions – what activities are group undertaking?
- Barriers – what are the primary barriers that the group faces at this level impacting upon their development?
- Support – what type of support does the group require at this level?
- Progression Indicators – what are the key factors that will enable the group to progress to the next level of development?

Level 1 – Round the Kitchen table

<table>
<tr><td>IDENTITY
People with a common interest talking informally</td><td>ACTIONS
Finding people with similar views, informal meetings</td></tr>
<tr><td>BARRIERS
Can not agree on what to do
No dynamic leader or champion</td><td>SUPPORT
Information online
Word of mouth
Networking opportunities
Links with existing place based activity e.g. WI</td></tr>
<tr><td colspan="2">PROGRESSION INDICATORS
They are organising formal meetings
They are managing to attract more people to meetings
Ideas for realistic action in the community are forthcoming</td></tr>
</table>

Level 2 – Going Public

IDENTITY	**ACTIONS**
• The group gives themselves a formal name • They go public • They have no funding • They have picked an issue on which to take action • They have a loose objective, but no formal plans on how to realise this	• A loose objective is developed • A simple campaign about their objective is publicised • Communications typically through the local press
BARRIERS	**SUPPORT**
• Lack of public buy in • Getting interest and support - getting beyond 'getting your best friend to the meeting' • Knowing how to get the message out – the right approach • Not knowing your audience and what turns them on	• Information online – word of mouth • Platform for networking – events/online • Links with existing place based activity e.g. WI
PROGRESSION INDICATORS • They have an ever growing number of people actively involved in their conversation • They realise they have a need for funding to realise objectives	

Level 3 – Enthusiastic Action

IDENTITY	**ACTIONS**
• Have a clear overarching objective • They are part of a broader '*Movement*'. They are aligned with other groups or organisations (Transition Towns, Local Authority etc) • One to three people driving / leading • They have informal targets for action	• Low cost ad-hoc / opportunistic projects – typically footprinting their 'place' and developing a carbon baseline against which to take action • Identifying local opportunities for carbon reductions • Engaging with the community / getting publicity • Engaging regularly with other groups and organisations • Behaviour change and low cost retrofit is being promoted • Raising fund in the community and sourcing other ad-hoc funding (typically <£10,000)
BARRIERS	**SUPPORT**
• Lack of focus - scattergun approach • Ideas too grandiose • Struggling with time if as most of groups members will be volunteers • Needing to keep all engaged – often cause for scattergun approach • A lack of time and professional skills	• Online, telephone guidance (EST, other movements, practical help) • Guidance on quick carbon wins • Networking opportunities with other groups primarily to learn about fundraising and communications • Peer to peer support preferred

• Not realising their own limitations • A lack of awareness of resources which can help • A lack of awareness of potential projects and quick win carbon savings • Not knowing how best to communicate	• How to undertake local low level fund raising – grants, local businesses • Facilitation of community groups to avoid conflicts • All support must be compatible with limited volunteer time
PROGRESSION INDICATORS • Realising that they can do more but not being able to due to lack of knowledge and or resources • The ability to raise local low level finance • The community presence is strong with a high level of local engagement – both the public and institutional support (Parish Council, Local Authority, etc)	

Level 4 – The Project

IDENTITY • Adoption of a single carbon reduction project – the big idea • Primarily volunteer led so far • They are researching in the process of becoming a formal 'undertaking' • They begin to own physical items • They are run by a committee rule with strong leaders • They have access to most of the core skills which are required to be successful	**ACTIONS** • Form an entity (Co-Op, Community Interest Company etc) • Receiving professional support • Undertaking the development of a feasibility study for the project – raising / raised capital to fund this • Have a list of actions / action plan • Strategic / pragmatic choice of project
BARRIERS • Time is needed to manage the commercialisation of the group • Tension around commercialisation of the group - people uncomfortable with conventional business activity • IP panic (people or organisations outside the group wanting to take IP) • A lack of governance and structure • Not the skills to match the ambition	**SUPPORT** • Upfront capital of up to £100K • Access to professional skills – business, technical, legal, financial-marketing, communications • Project planning • Part-time / full time person - interim or employed • Need to build capacity of group to learn and manage skills • Mentoring from other groups • Capacity building
PROGRESSION INDICATORS • Adoption / Identification of a place based project(s) – early development of a pipeline • Leadership / Group has business connections with a core skills base aligned with those required for project success • Access to professional support • Commitment • Have been able to develop this far on their own • Created a business structure	

Level 5 – Raising the money

IDENTITY	**ACTIONS**
• A formal undertaking • Have prospectus and business plan for the project • They have volunteer leadership but some paid staff • Access to and use of professional support • Widely recognised locally as exemplars – they have status with Local Authority etc	• Raising money – pitching to investors / community / Local Authority / banks • Undertaking meetings with the local community
BARRIERS	**SUPPORT**
• Getting in front of potential funders • Knowing the right pitch for the audience – public / banks / private / Trusts • Commercialisation – not willing to meet investor requirements • Cold feet – losing their nerve when faced with the scale of the project / undertaking / commitment	• Debt / Equity in the project • Fund raising skills • Support from mentor / peers
PROGRESSION INDICATORS • Do they know the audience for funding • Willingness to amend thinking to reach end goal • Keeping their nerve • Future ambition to grow	

Level 6 – Sustainable Community Business

IDENTITY	**ACTIONS**
Either: 1. Maintain the project successfully with no further ambitions for growth 2. Back at Stage 4 pursuing the next project 3. Looking to share their learning and develop a business helping other communities develop projects	Either: • If '2' then back at Stage 4 OR • If '3' researching the business proposition through which they will share experience and knowledge
BARRIERS	**SUPPORT**
• If '2' then are there any more projects in the locality and do they have the will and enthusiasm to go through the process of project development and fund raising again • If '3' is there someone who is prepared to / wants to take on the full-time role of developing this new business proposition (remembering that typically the leaders of the group thus far have been volunteers)	• If '1' mainstream business support • If '2' as for Level 4 • If '3' contact with other groups / individuals pursuing similar objectives

4.3 The role of the Ecological Funding Escalator in supporting pipeline groups

The key support role of the Ecological Funding Escalator will be to work with established and dynamic groups and assist with their development through Levels 4 and 5 of the Community Group Journey. It will operate as a 'slip-stream' for high potential, more commercially aware, entrepreneurs and organisations to set up their first, successful project and an underpinning business model. After this point, it should work with existing services to help these businesses grow. To maximise the investment, it is important for the escalator to address both the start-up and expansion of social enterprise.

Any resource and investment working with people and organisations at stages 1-3 should aim to create an 'incubator' for innovation by: streamlining the disparate support and information that is already available, strengthening generic support for social enterprise and boosting existing informal as well as formal networks. The priority is to strengthen existing, successful platforms for bringing people, ideas and information together so that they are kept up-to-date and live.

The Escalator must understand regional needs and targets and at the same time be sensitive to local grassroots needs. To develop this function it is envisaged that the Regional Carbon Fund operating in tandem with the Escalator (section 6) will provide a degree of proactive account management the function of which could be as follows:

- Develop strong working relationships with South-East grassroots organisations and the Energy Saving Trust to create a platform for sharing knowledge about the fund
- Work through existing organisations and directly to independent community groups to run specific 'Escalator' workshops. These would aim to reach the most active groups and offer clear guidance on the routes available to finance and manage community energy projects.
- Get to know and gain the trust of groups with potential and interest to develop through Levels 4 and 5 and achieve escalator funding
- Provide a 'gentle push and shove' service, keeping up to date with how groups are developing
- Brokering existing 'expert' support either from private businesses, funded providers or product providers to help groups develop as a business entity, move through feasibility, planning and funding stages and into operation
- Offer and manage a mentoring service with people drawn from existing community groups to provide peer to peer advice
- Be available on the phone or in person to talk to groups and help move past barriers

An entrepreneurial approach also needs to be built into the role, format and design of the Escalator Fund as new and currently unseen opportunities for further commercial development are likely to arise.

Appendix 3 identifies the characteristics of place-based carbon reduction groups, their needs at different levels of development and the key barriers faced.

5 Financial development of place-based low-carbon organisations

The Invitation to Tender for Investing in the Green Economy requested an "analysis and recommendations of appropriate interventions that will provide adequate support and funds to accelerate development of low carbon projects". As noted above, we have identified four categories of place-based low carbon projects:

1. Community renewables projects - energy generation from renewable sources, e.g. wind, solar, hydro and anaerobic digestion
2. Combined heat and power installations and district heating
3. Social housing refurbishment
4. Private housing refurbishment

Each of these types of project has different financial requirements. Following discussion with SEEDA, we have focused our analysis below primarily on community renewables projects.

With respect to social housing refurbishment, the internal organisational dynamics are completely different since such projects are developed on a "top-down" basis rather than being developed on a "bottom-up" basis by local groups that become more formally structured over time. Such projects are also not particularly capital intensive in comparison to standard social housing refurbishment budgets so there is no need for particular financing structures to be developed.

Combined heat and power and district heating projects also generally follow a more top-down approach because of the need for such projects to identify large commercial or public sector heating loads. There is a brief discussion of the primary barriers facing these projects below, which relate to decision-making at local authority level rather than financial barriers per se.

It is likely to be the case that, from a group formation perspective, the development of private housing refurbishment projects on a "bottom up" basis will follow similar stages as community renewables projects. However, as argued elsewhere in this report, such projects do not yet have as clearly defined financial models as community renewables projects and so we have not attempted to delineate the stages of development, timelines, budgets and financial barriers at the same level of detail.

5.1 Community renewables projects

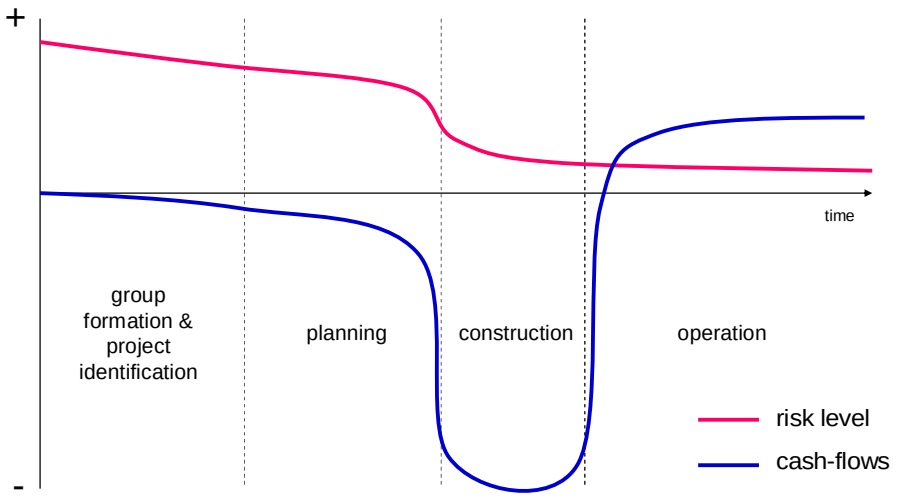
Four Stages of Development

In general, there are four stages in the life-cycle of a community renewables project:

1. Group formation and project identification
2. Planning
3. Construction
4. Operation

The risk profile and the financial requirements of the project at each stage are illustrated below.

Cash-flows & risk profile of early stage community renewables projects



5.1.1 Group formation and project identification

- This period covers the creation of a place-based group that decides to take collective action against climate change and the process of selecting a project to develop. This corresponds to stages 1 to 3 of the escalator process described in Chapter 4.0.
- The financial requirements of this stage are very low since the group is still informal and entirely non-professional. Small amounts of funds may be required for publicity, communications and some administrative support.
- The risk levels at this stage are at their highest. Risks mostly relate to internal group dynamics, including problems of leadership, lack of consensus, lack of relevant skills and failure to agree on an appropriate project.
- The major external risk in this stage is failure to agree terms with the owner of the property on which the project is to be developed. The property owner may refuse to grant permission for the project, may demand unreasonable financial terms or may even take the idea and implement it without the group.

5.1.2 Planning

- This period covers the evolution of the project from a viable idea to an investable project that has secured funding and which is ready to draw down capital to pay for installation of the renewable energy generation equipment.
- This is the most problematic stage for community renewables projects. This is because, as can be seen in the diagram above, the project now requires significant funding (ranging from a few thousand pounds to up to £100,000) even though the project risks remain high, for example, planning permission may be denied or lease negotiations may break down. This means that conventional commercial sources of finance are unwilling to fund this stage of such projects.
- In order to make the project investable, the project proponents have to undertake the following tasks, many of which require fees to be paid and/or professional staff to undertake them:

- Feasibility study – demonstration of the ability of the proposed project to generate the required amounts of electrical power and to deliver it to the regional power grid in a realistic and cost-effective way.
- Planning permission – persuasion of local planning authorities to grant permission for the construction and operation of the project.
- Environmental permitting – this may include archaeological, geological, hydrological and audio surveys to demonstrate that the project will not have adverse impacts on the local environment.
- Formalisation and incorporation of group structure – selecting the appropriate legal structure (e.g. CIC, mutual, charity, company limited by guarantee) and executing the relevant documentation.
- Execution of property lease – formal agreement of the legal terms with property owner for the use of the owner's property to generate renewable energy.
- Business planning – developing the documentation required by investors to demonstrate the returns that they will earn.
- Fund-raising – securing investment which can take various forms including: a public offering to local people, sale of equity to investors, grants and loans from commercial and semi-commercial sources.

- From an internal group dynamics perspective, this stage can cause severe internal stresses. Stresses are related to two related processes:
  - *commercialisation* – Conversion of a local community group into a formal entity in which various individuals and organisations hold an economic interest can crystallise tensions within a group about the relative value of contributions to the project. It can also be hard for those who have contributed time and effort to the group out of a sense of the common interest to see organisations and individuals with limited commitment to those goals benefit financially from the project.
  - *professionalisation* – Completing the above tasks to the level required for the success of the project not only requires professionals such as consultants, engineers and lawyers to undertake the tasks, but probably also requires professional management of the process. Transferring control from volunteers to a professional staff can be experienced as disempowering and disheartening for group members.
- Each of the above tasks has specific risks attached to it. For example, surveys may uncover geological problems fatal to the project or inadequate wind or water resources or the feasibility study may reveal that grid connection fees are too high for the project to be viable. More significant in general are issues relating to planning permission, whether related to educating local planning officers about the true value of wind turbines or responding to objections from concerned neighbours.

5.1.3 Construction

- This stage starts once the finance is secured and contracts for installation and construction are put in place and lasts until the project is commissioned and commences power generation.
- While there are several risks around this stage of the project, community renewable projects as a whole are not particularly risky and such risks are no different from standard financial and physical risks related to small-scale engineering projects.

5.1.4 Operation

- Once the project is in operation, the main risks are related to the actual performance of the project relative to expectations. The primary issues are:
  - Does the equipment perform to specification?
  - Are the environmental conditions (e.g. wind-speed, sunshine or water-flow) as predicted?
- If the project performs as expected, then revenues should accrue in line with the business plan and operating and maintenance costs should not exceed budget forecasts.

- From a financial perspective, the key issue is whether the project generates enough revenue to cover both operating costs and to service its debts. If not, the viability of the project will be questionable. Once these costs are met, then shareholders can determine when and how dividends should be paid.

5.2 Typical budgets and timelines

Community renewable projects can cost anywhere from £50,000 to several million pounds, depending on the technology and the power generation capacity. The costs quoted below are based on projects reviewed for this research. They are for illustrative purposes and are not meant to be exhaustive or definitive.

The smallest scale installations for PV, micro-hydro and wind turbines of under 20kW in capacity might start at £50,000 per installation but such projects are not likely to be able to attract commercial funding unless they are part of a larger project.

Medium-sized projects or schemes, such as PV arrays above 100kW or 50kW micro-hydro schemes involving Archimedes' screws may cost around £400,000-600,000 to install.

Larger wind turbines of 800kW-1.5MW may cost around £1.3-1.6 million per turbine, while anaerobic digestor plants are likely to have a minimum capacity of 500kW with installation costs of at least £2-2.5 million.

Timelines for the smallest PV projects are likely to be at least a few months to allow for negotiation and execution of a lease, securing planning permission and installation. The smallest scale micro-hydro schemes might take a year and a half. This would cover negotiating a lease, securing planning permission, obtaining an abstraction license and perhaps 3 months on site to build the project.

Developers of the largest scale schemes should be prepared for their schemes to take 3-4 years from the moment at which a community group decides on the project that they wish to promote until it starts to generate electricity. Significant time will be taken up in the early stages obtaining funding, setting up a formal legal entity to own the project and simply understanding the legal and financial processes that the project will need to follow. Planning permission can cause major delays as can permitting.

Below are the published budgets for three community renewables projects. The first two were recently awarded funding though the Low Carbon Communities Challenge:

- Low Carbon West Oxford is seeking up to £1.4 million for a package of projects which combine solar PV, wind turbines and micro-hydro. It is currently anticipated that grants of up to £640,000 will be received while a local share offer will generate £140,000, leaving around £625,000 to be financed through debt.

- Community Renewable Energy (CoRE) is a company limited by guarantee based in Berwick-upon-Tweed which develops renewable energy projects that are part-owned by local communities. It is seeking £8.75 million in funding for a combination of two wind projects with 3 turbines between them and an anaerobic digester plant. They envisage that just under 50% of that will be provided by commercial lenders, while the remainder will be provided through share offers and a loan of working capital from the ESCO that CoRE is establishing.

- West Mill Windfarm secured £7.6 million in funding, £4.6 million in equity, the remainder as a loan from Cooperative Bank, to construct five 1.3MW wind turbines in Oxfordshire. This project was developed with the support of Energy4All (see below).

5.3 Financial barriers facing community renewables projects

The Invitation to Tender hypothesised that a key financial barrier to community renewables projects is accessing early-stage finance and that many of them "are financially viable and can raise significant capital sums, once planning permission has been obtained and the business case established." We believe that the situation is somewhat more complex.

While access to early stage finance is a major issue for many projects, their financial viability is more questionable in the short to medium term. These projects can struggle to deliver adequate returns to equity investors over 5 or 10 years even if returns over the longer term are very healthy. This limits their ability to raise equity finance, which in turn means that they need high levels of debt. This is a problem for commercial lenders who want to see projects borrow a maximum of 50-60% of their capital costs. It also means that they face a relatively high debt burden in early years of the project, further limiting returns to equity investors in these years.

From a financial perspective, any fund for community renewables in the South East will have to address the following financial barriers faced by such projects.

5.3.1 Up-front expenses related to the planning stage

One significant challenge facing projects is securing funding for the planning stage from a viable idea to an investable project that has secured funding and which is ready to draw down capital. Many of the tasks associated with this stage (as listed above) require the services of a professional and it may require a professional to manage the whole process.

We discussed with several informants their estimates of the cost to get projects through this stage. The lowest up-front cost came from an organisation developing micro-hydro schemes which budgeted just £3-5,000 for up-front costs incurred prior to receiving planning permission. This equals around 6% of the costs of a small project.

For larger scale projects, estimates of up-front costs ranged from 5-15% of total project costs. As projects get larger the relative proportion in up-front costs may shrink but one developer of larger projects estimated an average cost of £100,000 per project to get it to investability. Other developers mentioned a cost of £60,000, once fees for feasibility studies, environmental surveys, drawing up legal agreements and applying for planning permission were taken into account.

The financial returns from properly structured community renewable projects should be sufficient to ensure recovery of these costs in addition to the costs associated with the construction phase.

The problem in obtaining commercial funding for this type of work is that at this stage there is not normally yet a project in which to invest, nor even a formal legal entity to develop the project. Most groups that have got through this stage have done so by chasing down grants on a piecemeal basis, seeking philanthropic backing from local businesses and wealthy individuals, by obtaining professional support on a pro bono or at cost basis, by relying on volunteers and by large volumes of persistence and commitment. This is not, however, a recipe that is likely to be successful in scaling up community renewables projects to a much greater level.

Three possible solutions were offered by informants to overcome the problem of up-front expenses:

- Grant funding – Some informants suggested that the best way to assist in the development of community renewables projects in the South East would be to provide grants towards their up-front costs. In order to replenish the overall funding pot for such projects, claw-back provisions in the grants

would enable them to be recouped, with or without interest or an additional fee, either on completion of financing or from project revenue or net income.

- Equity – An alternative to providing grants would be for the provision of up-front funding in return for equity in the project. This offers the prospect not only of overall funding being recouped but actually significant profits being generated over the longer term in compensation for the risks borne for providing up-front funding. The challenge to this approach is to ensure that the funder can liquidate its position in the project since some projects are structured in such a way that investors cannot easily sell their shares or make a significant profit on their share-holding.

- Under-writing – One research informant suggested that a fund be established with the purpose of underwriting equity provided to projects by commercial funders to cover up-front costs. In this case, the commercial provider of equity would pay the under-writer a fee for an insurance policy in case the project failed prior to the start of the construction stage. If the project did not reach the construction stage, the under-writer would be legally bound to pay to the commercial equity provider a substantial proportion, if not all, of the funds it had provided to the failed project.

  The advantage of this approach is that the under-writer could support more projects than would be possible with a grant-based or equity-based approach since it is very unlikely that all of the projects under-written would fail. In addition, it would earn fees for the provision of the under-writing service which could be fed back into the funding pot.

  The disadvantage of this approach is that it is very hard to price the risks of such projects and it would be difficult to set a fee that is both fair but financially meaningful for the under-writing service. In addition, the under-writer would have no ongoing financial interest in the projects it under-wrote and so the funding pot would be unlikely to be self-sustaining.

- Carbon Bond - One final approach suggested by one research informant was for a funding organisation to borrow money from corporates to finance community renewables projects. The principal would be repaid but, instead of interest, all the carbon savings from the projects funded would be aggregated together and passed to the investors to assist them to meet their carbon reduction targets. While this is an innovative approach, its weakness is that there is no way that organisations can use the carbon savings they would accrue to meet either compliance or voluntary targets as there are no systems in place that would certify the value of the savings.

It is important to note that there are a number of organisations already active that are prepared to meet up-front costs on behalf of projects in return for some sort of payback:

- H_2OPE , a CIC based in Todmorden, West Yorkshire, develops micro-hydro schemes based on the Archimedean screw. It will provide up-front funding to projects in return for the project paying back the external costs incurred in the planning stage such as lawyers' or surveyors' fees, plus a fee of £45,000. Half of the fee is charged once the funding has been raised and half is charged once the project is commissioned. They are also examining the feasibility of using a revenue sharing approach.

  H_2OPE puts in place a management agreement with the group with which it works and then provides a formal legal structure for the group as well as undertaking all the work necessary to secure planning permission and relevant permits. It then leads on the finance raising process.

- CoRE will undertake a feasibility study for a community on an at-risk basis. If both parties decide to go forward, they sign a Memorandum of Understanding in which CoRE estimates the costs it will incur through the process and confirming that it will be able to recoup those costs plus make a margin on leading the project development process.

Once the project is ready to receive funding, the community and CoRE set up a jointly owned company and work together to raise equity. CoRE also aims to provide debt finance through its own wholly owned subsidiary, ESCoRE which will also provide operating and maintenance for the projects, metering and billing and market the electricity, ROCs and carbon reductions. CoRE is thus able to recoup its costs from the project development process plus gain an ongoing revenue stream from the services it provides to the project which can then be invested in further projects.

- The Green Valleys is a membership CIC based in the Brecon Beacons that develops high head, low flow micro-hydro schemes. It offers a similar service to H2OPE in that it will support local communities as they move through the process of developing and financing the project. They also pay for the required feasibility studies and seek planning permission and secure abstraction permits on behalf of the projects. In return for taking on this risk and providing these services, The Green Valleys is seeking to retain a 25% equity stake in each project they support and thus receive 25% of net income once operating and maintenance costs are covered.

It is important to note that all three of these organisations are very early in their development with a limited track record. They all have very ambitious plans for growth; however they are somewhat untested.

5.3.2 Inadequate returns over the short to medium term

Many community renewables projects do not deliver returns that would be adequate for commercial investors. It may be that over the longer term, the rate of return from such projects is above an investor's benchmark but that would require an investment beyond most investors' horizons, even those of social investors.

In Low Carbon West Oxford's maximum scenario, for example, which involves 3 PV arrays, two small wind turbines and one micro-hydro scheme, the ten-year rate of return (IRR[1]) for equity investors is only 7%[2]. This is despite a highly geared[3] capital structure in which investors only provide 10% of investment costs, 45% is provided by grants and 45% is borrowed for ten years at a rate of 5%, which is lower than prevailing interest rates for such projects. An interest rate of 6.5% reduces the ten-year IRR to break-even level while a reduction in the level of grant to 35% of project costs creates a negative IRR even when the loan rate is 5%. Over 15 years, however, the IRR rises to a much more attractive 20%.

While it may be that the LCWO business plan and capital structure can be adapted to improve the returns from the project, it may be that a third-party with a longer investment horizon could provide some form of finance that would convert the return profile of LCWO into something more attractive to general equity investors. There may several ways in which this goal can be achieved creatively, through finance which blends features of debt and equity, without sacrificing overall financial returns to the third-party over the longer term.

Finally, the legal structure of such organisations can limit their ability to attract large scale investment. The fact that such projects are structured as social enterprises limits the upside available to equity investors. This is discussed below.

5.3.3 Raising equity

[1] IRR = Internal Rate of Return. IRR measures the profitability of a project by valuing the cash-flows into and out of the project as if they were an investment into a bond with an annual interest payment. So, a project with an IRR of 5% over ten years is equivalent to investing the same amount of capital into a ten year bond that pays an annual interest payment of 5%.
[2] The calculations of IRR are not taken from LCWO's own figures but are inferred from figures presented in LCWO's prospectus with some additional assumptions.
[3] The term "gearing" refers to the amount of debt used to finance project. The more highly geared the project, the greater the proportion of overall project finance provided via debt.

The third major financial challenge for community renewables projects is raising equity. The fact that most organisations developing such projects are non-commercial and have no track record means that they are fairly risky investments. In addition, as noted above, the returns from such projects are frequently not very attractive on a purely commercial basis.

One notable exception to this trend is the community renewables projects developed by Energy4All.

- Energy4All is the most experienced developer in the UK of community renewables projects. To date, it has developed 7 projects and has a number of other projects in development.

- The organisation emerged from the Baywind Coop, an Industrial & Provident Society, formed in 1996 to allow a community in Cumbria to invest in a local wind farm. Baywind has successfully carried out two share offers and raised over £1.9 million between 1996 and 1999 and currently has over 1,300 members, each receiving yearly share interest based upon the profits earned from electricity generation during the year. Preference was shown for local investors, so that the community shares the economic benefits from their local wind farm. Around 40% of existing Baywind shareholders live either in Cumbria or North Lancashire with a wider number from the Northwest Region.

- Baywind established Energy4All in order to spread the model of cooperative ownership of community renewables projects to more communities across the UK. Energy4All itself is owned by the renewable energy cooperatives that it has helped to create. Energy4All has established a strong track record of success. Its seven co-ops have over 7,000 members and there are another 6 under development. The seven operational projects were financed through public share offerings that raised over £13 million along with £7 million borrowed from the Cooperative bank to complete the financing of its projects.

- Energy4All is not itself a project developer. It offers support to develop community ownership initiatives and to establish local co-operatives. It provides guidance on how to raise equity through share issues and access to loan capital. It also provides site monitoring and management services once a project is established. Significantly, and in contrast to organisations such as H2OPE and Green Valleys, Energy4All does not provide up-front risk capital.

The contrast between Energy4All projects and the other projects discussed above is instructive. As can be seen, Energy4All has been extremely successful in raising equity from local investors. It is also striking that the debt-equity ratios of its projects are very different to those of the smaller projects that are the focus of this report. The equity returns generated by Energy4All projects, despite the low level of leverage, range from 5-15% per annum. Average annual returns to investors in Baywind Energy are 5.4% but this includes the first year, in which there was no dividend, and one year in which dividends were lower because of the funds invested to set up Energy4All. Stripping out those two years, the average annual dividend yield rises to 6.33%. These returns are boosted by 20% for eligible taxpayers who took advantage of 20% Enterprise Investment Scheme tax relief on the initial share offering.

In short, the financial returns from Energy4All projects, which are of a much larger scale than other projects discussed above, are sufficiently strong that they do not need high levels of gearing to generate returns for equity investors. This is the reason why Energy4All's projects are often part of large commercial developments and is the likely explanation for why they are able to raise substantial volumes of equity from local investors.

A common feature of smaller-scale, more complex community renewables projects like CoRE and Low Carbon West Oxford is that they are endeavouring to obtain a much higher proportion of their finance from debt and that the returns to equity investors are still potentially quite low over the short and medium term. This, of course, is the very reason why a special financing solution is required for such projects.

5.4 Organisational Structure

The Invitation to Tender for this work hypothesised that "the process of choosing and establishing the appropriate business model [for place-based carbon reduction groups and projects] is complex and a barrier to potential entrepreneurs in creating low carbon 'start ups'." It cited the following possible structures: companies limited by guarantee, industrial and provident societies, companies limited by shares and registered charities.

This research has uncovered projects and groups using all of the above structures. The two most common structures used by groups at stage 4 and above of the escalator are Community Interest Companies (CIC) and Industrial & Provident Societies (IPS).

CICs are a new type of limited company with special additional features, created for the use of people who want to conduct a business or other activity for community benefit, and not purely for private advantage. This is achieved by a "community interest test" and "asset lock", which ensure that the CIC is established for community purposes and the assets and profits are dedicated to these purposes. CICs can be limited by shares, or by guarantee, and the assets and profits must be retained within the CIC for community purposes, or transferred to another asset-locked organisation, such as another CIC or charity. CICs can also only pay 35% of profits in dividends to shareholders and the dividend yield cannot exceed 5% above the prevailing base rate.

IPSs are organisations conducting an industry, business or trade, either as a co-operative or for the benefit of the community. Co-operative societies are run for the mutual benefit of their members, with any surplus usually being ploughed back into the organisation to provide better services and facilities. Societies run for the benefit of the community provide services for people other than their members. An IPS can run a public share offering. Minimum investment levels are £250 up to a maximum of £20,000. While dividends are paid based on the size of the shareholding, control of the company happens on the basis of one member one vote. There will also usually be limitations on the ability of shareholders to realise any return by selling their shareholding.

It became clear through the research that there is no single prescription for which organisational structure is right in general for community renewables projects. The only feedback we had on the relative value of different types of structure was a positive evaluation of IPSs relative, to CICs because of the restrictions placed on the ability of CICs to pay dividends to their investors and hence to raise equity capital. The intent behind these restrictions, along with the asset lock, is clear. Its goal is to enable CICs to access commercial capital while retaining clear boundaries to ensure that the CICs continue to act in the interest of local communities. These restrictions, however, limit CICs ability to attract commercial investors for projects that require greater levels of return, either because they are riskier or because it is more costly for them to access capital due to their smaller scale or greater transaction costs. Some informants suggested that a preferred legal structure for projects is to set them up as IPSs which do not face such restrictions on the levels of dividends paid to investors. They do, however, have limits on the maximum amount that can be invested by any one individual or legal entity.

In addition to purely legal factors, because of the voluntary nature of the groups developing such projects, organisations often choose to structure themselves in such a way as to preclude overall control of the project being ceded to purely commercial interests. An IPS can prevent its shareholders from selling their equity stake in the company for a profit, limit the dividend yield to low levels and have "anti-carpet bagger" provisions in place which mean that members do not benefit personally if the organisation is demutualised or sold off. While this serves the admirable goal of maintaining local control it does mean that it limits the attractiveness of such projects to larger equity investors.

It should be noted that the decision about organisational structure is not all or nothing. Organisations can set up subsidiaries and special purpose vehicles which have a different organisational structure. It is clear,

however, that as organisations progress up the ecological escalator and seek to develop an “investable” project, they will need support to select an appropriate formal structure from an informed source who can advise on the pros and cons of each and which structure might be most appropriate for each project.

It should also be noted that structuring a project as a social enterprise, with the concomitant restrictions on commercial returns, also confers distinct advantages on such projects. In particular, local land-owners, especially those in the voluntary or public sector, are more likely to be comfortable working with a project that has community ownership. It is also likely to make it easier to build relationships with local, regional and national government, which can have positive impacts from a permitting and planning permission perspective and make it easier to access grants to cover up-front costs.

5.5 Private domestic retrofit projects

5.5.1 Choosing the right approach

Place-based low-carbon enterprises have the ability to help local residents reduce carbon emissions from domestic energy use. There are 3 main approaches that they could use:

1. Behavior change through energy advice and awareness raising to reduce emissions by up to 30%
2. Coordinating low cost measures delivered through CERT and grants to reduce emissions by 10-30%
3. Setting up a whole-house Pay As You Save loan scheme to reduce emissions by 30-80%. In practice a PAYS scheme would also incorporate behavior change and low cost measures as part of the package.

The first two approaches require much less finance and can be run on a small scale with volunteer time from community groups and students, as Low Carbon West Oxford and Ashton Hayes have shown. The barriers and complexities of establishing loan funds that require £5,000-£25,000 per household have precluded any community-led schemes being established and this has led to the PAYS pilot schemes. A 1,000 home scheme would require raising around £10 million to loan out and the systems in place to manage the fund.

A place-based enterprise would need to be well-established, staffed by skilled professionals given the skills and resources needed for a PAYS scheme beyond behaviour change and low cost measures approaches. It is possible for smaller community groups to largely independently create significant low cost and behaviour change savings. However, the UK will need the roll out of PAYS schemes on a mass scale to meet the target of all homes having had a whole house makeover by 2030. Place-based enterprises could play a large role in that.

Table 6: Options for private domestic retrofit

Approach	Skills needed	Resources needed
Behaviour change	energy auditing; domestic carbon footprinting; communication.	Time; people; energy monitors; commitment from participants
Low cost measures	Relationships with EST and energy suppliers	Some top-up funding for measures from homeowners or grants
PAYS	Consortium of delivery partners – energy surveyors, local authority departments of planning, environment/climate change, finance raising, loan book	£2,0000 – £20,000 per household, sources of debt/grant finance; considerable time; incorporated company; liability insurance; business

	management, legal, building contractors, suppliers and installers of measures	plan

5.5.2 Carbon Savings and Wider Benefits

Home energy efficiency increases in the UK have been driven by the Carbon Emissions Reduction Target (CERT). As a result, many low cost high carbon saving measures have been installed, such as efficient light bulbs, cavity wall and loft insulation. There are still considerable opportunities for large scale programmes that continue in this approach. The Energy Saving Trust estimates that completing all the cavity wall and loft insulations left undone in the South East could create thousands of jobs, savings of around £300 million and 1.2 million tonnes of carbon per year. These would reduce carbon emission per measure by around 10%.

However, there is even more scope to go beyond these low cost measures to complete 'whole-house' retrofits. These would also install draught-proofing, insulate solid walls and floors, and replace inefficient boilers. This whole-house approach can reduce emissions by 30-80%. The costs for this range from £1500 to £25000 per property. They have payback periods of 5-25 years. With the introduction of Feed In Tariffs and the Renewable Heat Incentive, low carbon energy and heat technologies will fall in a similar cost bracket soon.

What is PAYS?

The level of expenditure needed to do a whole house refurbishment cannot often be borne by the household from savings. There are also considerable difficulties in getting good advice on the right package of measures and a trusted contractor to complete the works.

One solution proposed is to offer householders a 'one-stop-shop' service that arranges cheap loans, surveys and contractors for households within a community. This reduces the costs per property and reduces the worry and removes the up-front costs for the householder. The measures would be selected so that their up-front cost could be repaid together with any interest with annual payments lower than the reduction in energy bills. This is coined Pay As You Save (PAYS), and there are 4 national pilots starting in 2010 to test this concept.

5.5.3 Barriers and support needs for PAYS Funds

The level of financial risk can be diminished by securing loans to the property. The energy savings can be predicted reasonably accurately so the financial risk in a PAYS scheme is predominately in loan defaults and bad debts, as risk from the performance of measures and ownership of them lies with the homeowner. Therefore, key barriers are raising this level of finance and having delivery and management processes that are robust and trustworthy.

It is clear from Forum for the Future's experience with Refit West that place-based enterprises will need assistance from Government to establish a PAYS fund. The role of government would be to guarantee private loans, lend the money or subsidise the interest. They can also assist with procurement and marketing, it may be possible to use council tax billing as a method for managing loan repayments as well.

5.5.4 Recommendations for Support

At this stage, support for place-based enterprises and low carbon community groups should focus on establishing behaviour change and low cost grant and self funded measures based programmes. The results of the PAYS pilots, the roll out of FITS and the RHI over the next 2 years will then inform the role of these organisations on the wider rollout of PAYS. The role of SEEDA in that will be to provide or coordinate local authorities' provision of financial support in the form of loans, loan guarantees, grant to subsidise works interest costs. These measures will enable place-based enterprises to borrow money at the low rates

needed to make PAYS work financially for homeowners. Local authorities could also provide support in the form of expertise, reach into the community and billing.

5.6 Carbon offsetting/compensation

5.6.1 Creating a Regional Carbon Compensation Fund

In its Invitation to Tender for this piece of research, SEEDA envisaged the creation of "a Regional Carbon Compensation Fund (RCCF) which… will offer a mechanism by which organisations and individuals within the Region wishing to compensate for their unavoidable carbon emissions could contribute to a mechanism that invests directly in carbon reduction projects within the South East." The use of the phrase "carbon compensation" is a signal of a desire to provide a mechanism analogous to, but distinctive from, carbon offsetting. The RCCF would "financially underwrite the creation of low carbon enterprises and projects development by providing early stage finance in return for a financial and carbon return." After initial funding, the Fund would need to become self-financing.

In respect of the idea of creating the RCCF, our research focussed on two questions:

1. Is the carbon offsetting/compensation model, whereby projects receive a payment for every tonne of emissions they reduce, an effective way of funding low carbon enterprises and projects?
2. Is there adequate demand for emission reductions from UK projects so that revenue from the sale by the RCCF of emission reductions can make an effective contribution to its ongoing financial viability?

5.6.2 Current Examples of Carbon Offsetting/Compensation Funds

To inform our response to these questions, we researched three carbon offsetting/compensation funds supported by local or regional governments:

Foundation:

Foundation is a fund administered by environmental charity Groundwork and created by the North West Development Agency as part of its climate change action plan. It was established as a mechanism for local communities to reduce their emissions. It was set up explicitly in response to the concern that offset funds were leaving the region to support international projects despite the fact that there were many cost-effective opportunities for reducing emissions within the region. The goal of the fund, as described by Chief Officer Mark Turner, is to make carbon reductions visible by ensuring that they happen in local communities.

The NWDA invested £1.6 million for the first three years of the scheme to be split 35-40% for overheads on running the fund and 60-65% in giving grants. To date, 19 projects have been supported, including PV arrays on schools, CHP for a leisure centre, tree-planting, a cycling project and funding for a credit union to finance energy efficiency improvements in homes. Foundation does not seek financial returns or repayment from the funding that it provides to projects.

Milton Keynes Carbon Offset Fund:

The Milton Keynes Carbon Offset Fund was established in April 2007 in response to Milton Keynes' desire to mitigate climate impacts from the city despite the fact that it is a growth area for new developments. According to policy D4 which was adopted to mitigate the impact of construction, new developments must be 25% more energy efficient than demanded by Part L of the Building Regulations and 10% of energy must be generated from on-site renewables. There are various other environmental impacts covered by

the policy, such as use of recycled materials and A-rated materials from BRE's Green Guide to Specification. In addition, developers must pay a one-off tax at a rate of £200 per tonne of carbon dioxide generated by the scheme each year. This works out at £400 for a typical new home. The money is collected using a section 106 agreement and is payable on completion of the scheme.

The local council's aim was to raise £800,000 per year through the scheme. Funds started to be generated in early 2008. In its first year and half, around £600,000 was actually raised, depressed levels of funding being due to the downturn in construction. Funds are used to retrofit private homes alongside CERT funding. The fund is administered by the local energy agency, United Sustainable Energy Agency, which takes a margin of 10% to cover administration and other expenses. The fund so far has paid for thousands of homes to be insulated and has enabled Milton Keynes to far outstrip all other local authorities in the South East in terms of the number of homes insulated through local authority programmes.

CarbonFREE:

The Fund was established to allow individuals, businesses, community groups – and Eastleigh Borough Council itself – to donate money to local projects that save energy to compensate for the CO_2 emissions resulting from the contributor's own energy use. The Council made a commitment to be carbon neutral by 2012, in its own main operations, and the fund provided the vehicle to compensate for those carbon emissions that were unavoidable. In addition, the Council wished to offer the facility to the entire borough and increase its effectiveness. The Council has so far invested £100,000 into the fund to compensate for emissions from its own main operations. In addition, three of the local bus companies regularly contribute to the fund.

5.6.3 Background to offsetting

Carbon offsetting has established itself as a significant source of revenue for many projects around the world that reduce carbon emissions. In order to benefit from carbon offsetting, a project primarily has to prove two things:

1. that emissions levels following the implementation of the project are lower than they would otherwise have been under a business as usual scenario; and,
2. that the project is only viable if it receives tradable carbon credits which it can then sell

Projects can take many forms, including renewable energy, energy efficiency, capture and destruction of gases with a high global warming potential including methane, HFCs and N_2O. Projects also range in scale from those that reduce emissions by just a few hundred tonnes a year to those that reduce emissions by millions of tonnes per year. In principle, all of the project types discussed in this document could be eligible to become offset projects.

Across the world, the market value of offsets traded each year is of the order of billions of dollars (estimated to be around €24 billion in 2008). However, the vast majority of this trading takes place within the "compliance" markets through which offsets are used to comply with legally binding requirements under the Kyoto Protocol or the EU Emissions Trading Scheme.

Although much smaller in scale than the compliance market, the market for voluntary carbon offsets has also seen dramatic growth. The total value of the global voluntary carbon offset market in 2008 was around half a billion Euros, with over 100 million tonnes of offsets traded[4]. Many leading UK organisations offset their emissions, have pledged to do so or enable their customers to offset the emissions associated with particular products including Royal Mail, Marks & Spencer, Eurostar, HSBC, Barclays, British Airways, easyJet, BSkyB, and HM Government.

[4] "Fortifying the Foundation: State of the Voluntary Carbon Markets 2009," by Katherine Hamilton, Milo Sjardin, Allison Shapiro and Thomas Marcello for Ecosystem Marketplace & New Carbon Finance, 20 May 2009.

There is little reliable data on the total value and scale of carbon offsets sold annually to organisations and individuals in the UK for non-investment purposes (i.e. not to be sold on later for a profit) but it almost certainly exceeds 1 million tonnes and could range as high as 3 or 4 million tonnes.

There are various standards against which carbon offset projects are certified. The three major standards are:

- United Nations Clean Development Mechanism (CDM)
- Voluntary Carbon Standard (VCS)
- Voluntary Gold Standard (GS)

5.6.4 The difficulties of carbon offsetting in the UK

It is not possible to earn carbon credits from projects located in the UK under any of standards listed above. This is related to Kyoto accounting rules whereby the UK government would be required to reduce the stock of carbon credits it holds to ensure its Kyoto compliance by the same amount as was issued to any projects. If it did not do this, then the project would be "double-counted," i.e. both the project and the government would be able to claim the benefit of the emission reduction. This is because the emission reductions achieved by the project would reduce the number of credits the government it is required to buy or hold to meet the UK's targets.

Various local and regional governments have expressed a desire to capture some of the expenditure currently going to support offset projects located in India, China and other developing countries and to redirect it towards projects within the UK. Likewise, many British organisations committed to offsetting or with a carbon neutrality target would like to support projects within the UK.

To date, however, there has been no mechanism that enables offsetting to take place in the UK. One of the major stumbling blocks to progress is the fact that the Government is adamantly opposed to offsetting within the UK. The government is, however, broadly supportive of the creation of a financial mechanism for the voluntary support of such projects which does not involve the issuance of carbon credits and formal carbon offsetting. BRE and Forum for the Future are currently leading a project, in collaboration with other NGOs, government agencies and leading corporates to develop such a mechanism.

5.7 Effectiveness of Carbon Offsetting to deliver SEEDA's requirements

Carbon offsetting is premised on the fact that certain projects to reduce carbon emissions are not viable without a revenue stream related to carbon reductions (i.e. additionality). Certain projects may not generate any revenue at all apart from selling carbon reductions. In such cases, the revenue from selling carbon reductions would have to be sufficient of itself to ensure their financial viability. In the field of international carbon offsetting, this is true for projects at opposite ends of the spectrum in terms of their sustainability and the volumes of reductions they generate. Small projects to distribute clean cooking stoves which displace kerosene burners have no revenue stream and can be funded on the basis of the emission reductions they achieve. Likewise, projects to capture and destroy emissions of industrial gases with a high global warming potential serve no other economic purpose, and hence have no associated revenue stream, apart from the generation of carbon credits.

Renewable energy projects, however, do already have a revenue stream from the sale of electricity. In order to qualify for carbon offsetting, it must be the case that these revenue streams do not generate a sufficient return in order for them to attract the investment necessary for their development. A fairly typical example is a run-of-river hydro scheme in China which has an IRR of 8%. This is below the investment

benchmark of 10% and hence it can be demonstrated that it is not economically viable based solely on the value of the electricity it can generate. The addition of revenue from the sale of offsets, however, raises the IRR to 12%, thus exceeding the investment benchmark. Since the project is dependent for its viability on the sale of offsets, it thus qualifies to receive them.

It is important to note that in this type of project, while the project depends for its viability on the revenue stream from the sale of the offsets, the revenue from the sale of the electricity must be sufficient to cover payments to lenders, operating and maintenance costs and generate positive returns. The revenue from carbon offsetting is only sufficient to boost the level of returns from the project to make it more attractive to equity investors. The project cannot be financed on the basis of carbon reductions alone.

Out of the four project types identified in this report, three of them conform to this model, i.e. they have revenue or value streams which are the basis for the financial viability of the projects. These project types are:

Project type	Primary revenue streams
Community renewables	sale of electricity (Feed-in-Tariff/ROCs)
District heating	sale of electricity (Feed-in-Tariff/ROCs) sale of heat
Retrofit of private homes	Value of reductions in gas and electricity bills

In the case of retrofit of social housing, the registered social landlord (RSL) is not able to capture the value of the reductions in energy bills which means that these projects would not have any other revenue stream apart from the value of the carbon reductions. These projects are discussed further below.

5.7.1 Community Renewables

In the case of community renewables, the value of the carbon can have a significant impact on the financial returns to the project, but only if:

a) the value of the Feed-in-Tariff is not disproportionately high relative to the volume of emission reductions generated
b) the "carbon returns" are allocated to the right investor – most likely the equity investor:

The analysis below uses three prices of carbon:

- £8 the average price of VERs sold to UK consumers for offsetting
- £15 the average price of CERs sold to UK consumers for offsetting
- £25 the low end of the Government's estimate of the cost of carbon for sectors outside the EU ETS. Also, the highest quoted price that corporates stated they would be prepared to pay for offsets in our research

Below are two illustrations of the financial impact that selling carbon reductions could have on renewable energy generation equipment:

- Technology type: Micro-hydro
- Generation capacity 16kW
- Total cost £50,000
- Debt terms £35,000 for 5 years at 6.5%
- Annual output 85 MWh
- Annual reductions 45.5 tonnes of CO_2

Price per tonne	*Project IRR*[5]		*Equity IRR*[6]	
	5 year	*10 year*	*5 year*	*10 year*
£8	+1%	+1%	+3%	+1%
£15	+2%	+2%	+6%	+3%
£25	+4%	+3%	+10%	+6%

- Technology type: Wind turbine
- Generation capacity 800kW
- Total cost £1,400,000
- Debt terms £980,000 for 10 years at 6.5%
- Annual output 2,000 MWh
- Annual reductions 1,082 tonnes of CO2

Price per tonne	*Project IRR*		*Equity IRR*	
	5 year	*10 year*	*5 year*	*10 year*
£8	+1%	0%	+3%	+2%
£15	+2%	+1%	+6%	+4%
£25	+3%	+2%	+10%	+7%

As can be seen, adding in the value of carbon to renewable energy projects does not boost the overall returns of the project significantly. It can, however, add significantly to the returns to equity investors, especially in the early years of projects when debt servicing takes up a high proportion of project income. It could thus be a way to boost returns to equity investors in the early years of the project.

Adding in a value for carbon does not always have such a strong effect on rates of return. In the case of Low Carbon West Oxford, for example, it takes a carbon price of £40 per tonne to raise the equity IRR by 1%. This is because solar PV accounts for over half of the project's capital cost. While generous Feed-in-Tariffs may enable solar PV to be financially viable, the low level of associated emission reductions means that carbon savings are not of significant value. By contrast, large scale projects such as those developed by Energy4All also do not require payment for the carbon reductions that they achieve since ROCs and FITs should be sufficient on their own to generate adequate returns.

The case with domestic retrofit of private housing and district heating will be similar. Both types of project will depend for their primary financial viability on the value of the energy they sell or the energy savings they achieve. Given current energy price levels, putting a financial value on the carbon reductions achieved by renewable energy generation, renewable heat, CHP or energy efficiency will not determine the viability of such a project in and of itself, but it might sweeten the returns for the appropriate investor who is seeking to claim the carbon reductions against a voluntary emissions reduction target.

Despite the fact that, in theory, assigning a value to the carbon reductions achieved by community renewables projects can add to the return achieved by equity investors, we do not believe that providing funding through a carbon offsetting fund is the appropriate way to finance such projects. The primary reason is, as explained above, that there is no agreed mechanism to account for the value of carbon reductions achieved by such projects, even for voluntary purposes. At the moment, therefore, assigning a value to such reductions is a highly speculative endeavour, especially in contrast to Feed-in-Tariffs which offer a highly predictable form of return on investment. No bank, therefore, would be willing to offer finance to a project which is only viable on the basis of the carbon reductions it achieves, unlike carbon offsets certified by the UN under the Clean Development Mechanism.

[5] Project IRR measures the IRR as a project as a whole if it were to be financed 100% on an equity basis.

[6] Equity IRR measures the IRR achieved by equity investors after payments to lenders.

5.7.2 Social housing refurbishment

The only type of project that more easily fits a carbon offsetting funding model is retrofit of social housing. As mentioned above, this is because there is no additional revenue stream associated with such projects because the RSLs are currently unable to generate any additional revenue from the energy savings that they create for their tenants through retrofitting their homes.

In terms of pricing, such projects can deliver emission reductions at a fairly low stated price. Milton Keynes charges developers £200 per tonne of emissions to offset, but this covers a 20 year lifespan so it translates to a price of £10 per tonne of emissions reduced. Another housing association we have contacted cited a price of £13 per tonne of emissions reduced. Gentoo Green, which is developing a carbon reduction project in Sunderland involving retrofitting housing that has already achieved the Decent Homes Standard, cites costs per tonne for different measures ranging from £10 all the way up to £1,000.

It must be borne in mind, however, that the method for deriving the cost per tonne is very different from the method used to derive the price of a tonne of emissions achieved through a conventional carbon offset project. The baseline for determining the volume of emission reductions achieved is the existing energy efficiency rating of existing homes as calculated by the SAP methodology. The amount of reductions achieved is equal to the implied carbon saving as determined by the SAP methodology from improving the SAP rating of the home by installing the relevant measure. There is, however, no retrospective verification of the actual emission reductions achieved. Instead, the implied annual carbon reduction based on the SAP model is multiplied by the number of years for which the carbon reductions are expected to be achieved and the full credit for the carbon reductions is, in effect, given up-front.

There are also issue relating to “double counting” with respect to such projects. For example, Milton Keynes uses the money provided by the offset fund to double up on CERT funding provided by the energy companies. This makes the home insulation offered a lot more attractive because it is much cheaper, which is why Milton Keynes has insulated far more homes than any other local authority in the South East. However, it also means that the tonnes of reductions claimed by Milton Keynes are also being claimed by the energy companies.

It could also be argued that additionality is dubious for projects in RSL properties which help to get them to Decent Homes Standard, which is already a legal obligation. Nevertheless, despite these caveats, it seems that carbon offsetting/compensation is a suitable way to fund green retrofits in the social housing sector.

5.8 Demand for UK emission reductions?

Just as with the carbon offsetting market, there are two possible sources of demand for project-based reductions in the UK:

- voluntary - demand from companies and individuals wishing to offset their emissions on a voluntary basis
- compliance – demand from organisations that need to offset or compensate for their emissions in order to meet some legally binding requirement

5.8.1 Voluntary demand for UK projects

When discussing the voluntary market, the main focus has to be on companies rather than individuals. This is because for most offsetting organisations, demand from individual consumers accounts for a very minor part of the volume of offsets that they sell, perhaps less than 5%. The only exception to this is where a company with a recognised brand creates an offsetting scheme which it promotes to consumers, primarily to offset emissions associated with travel, e.g. airlines, car companies and travel agents. But, in order to reach the customers of such companies, it is necessary to persuade such companies of the value and viability of supporting UK projects.

BRE has undertaken research with companies to gauge voluntary demand for UK carbon reduction projects. All of the companies interviewed had plans to invest in projects that reduced carbon emissions outside their direct operational footprint, either in the form of carbon offsetting or UK-based renewable energy projects. All of the companies that were engaged in offsetting or had commitments to offset emissions were very supportive of the idea of fulfilling at least part of their offsetting commitment by supporting carbon reduction projects in the UK.

Several of the companies that we interviewed had made the commitment to offset in the belief that they would be able to find projects in the locations where they operated or where their customers were living and had opted to switch to international offsets only when it became apparent that offsetting in these locations was not currently feasible.

Some of the companies expressed a willingness to switch their entire offsetting commitment to UK-based projects while others felt that it was important to ensure that a significant proportion of their offsetting came from international projects. Willingness to support UK projects correlated largely with the proportion of customers and supply chain based in the UK.

It was striking that all the companies reported that there had been very little customer feedback about the type of offsets that the companies should be supporting, in terms of location or project type. Companies did however report that where there was customer feedback, customers had articulated a desire to support projects based in the UK.

The issue of pricing did not emerge as the crucial issue which we had believed it would be. Pricing was of more significance for companies that paid for the offsets themselves rather than passing it on to the customers. Most surprisingly, several companies stated that the value of supporting local projects was so strong that they would prefer to pay the same amount for emission reductions in the UK and offset less than all of their emissions instead of offsetting all of their emissions from international projects.

When asked what would be required in order for the companies to switch their offsetting from international projects to the UK, there was a great deal of consensus across the companies interviewed. All of them stated that they would need a recognised standard that would enable them to communicate to their customers and stakeholders that adequate quality assurance procedures had been applied to the carbon reduction projects they were supporting. The key criterion for a “recognised standard” would be one that was endorsed by NGOs recognised by their customers.

BRE and Forum for the Future are currently developing a coalition of companies, NGOs and government agencies to develop such a standard. We do not envisage that standard being in place for at least six months at the earliest.

Based on this research, we believe that it would be premature at this point to launch an RCCF which tried to emulate the carbon offset approach and which depended for its financial viability on voluntary demand for offsets from companies. This has been confirmed by the experience of Foundation and Carbon FREE.

To date, Foundation has yet to attract corporate donations of sufficient size to make a difference to its financial viability. To some extent, some of this is to do with time – Foundation is still less than a year old. It is also a function of the fact that Foundation was launched in the midst of a severe recession.

Similarly, there have been very limited personal or corporate donations into CarbonFREE. This may be due to a lack of a promotional budget. There are concerns over the perceived lack of social value of the projects the fund has been supporting and the lack of visible projects on community buildings. The reasons for this have been that projects supported to date have been the lowest cost per tonne, primarily home insulations measures for private households. The issue has been raised that residents that could have afforded the measures have gained them for free and that they are already subsidised by the energy suppliers under CERT.

In terms of its ability to raise money, Foundation sees itself to some extent as falling between two stools. On the one hand, it is not a carbon offsetting organisation because it does not yet have a full pipeline of projects which are accredited to a recognised standard from which companies can choose to buy a defined number of tonnes. On the other hand, while it emphasises the local social benefits of its projects, it is not a social welfare charity to which companies might donate for purely CSR benefits. For CarbonFREE, by contrast, local private and business donors are more interested in local social benefits of projects than carbon reductions. This is at odds with the council's aim to become carbon neutral via the Fund at the lowest cost possible.

Other challenges identified by Foundation and CarbonFREE in obtaining voluntary donations are:

- Lack of clarity about the legal or regulatory status of carbon reductions achieved through the projects. In particular, companies want to know whether they can use these reductions to meet public reduction or offset targets. The government has expressly stated that UK projects cannot be used as part of a carbon neutrality claim. There are also complications relating to government incentives for funding such projects. For example, if Foundation match-funded a project with the Low Carbon Buildings Programme or CERT funding who gets to claim the carbon reductions?
- Lack of bandwidth, i.e. a difficulty in getting companies to spend the time understanding something that is new and different to offsetting, especially in the midst of a recession.
- Concerns about being among the first companies to sign up – this is an inevitable barrier faced by any new business that does not launch with key clients already in place.

5.8.2 Compliance demand for UK projects

In the carbon offset market, trading volumes in the compliance market where countries and companies are buying offsets for compliance with targets for Kyoto and the EU ETS respectively far outstrip volumes in the voluntary market. The same situation applies with regard to demand for UK project-based reductions.

The best example of how demand can be generated for through a compliance model is the Milton Keynes carbon offsetting fund. Despite the recession, the Milton Keynes fund has generated over £600,000 in a year and a half. Other local authorities are working on similar policies such as Brighton & Hove and Ashford. If such policies are adopted widely across the South East then, if development resumes at the expected scale as the recession comes to an end, the volumes of funds generated could run into the tens of millions per year. At such time, an RCCF could administer such funds on behalf of local authorities and begin to invest in such projects on a more speculative basis. However, this depends on local authorities having the political will to enact the appropriate planning regulations which can take 3-4 years to push through. Milton Keynes has provided information on its scheme to many local authorities but far fewer have carried through this interest into policy, presumably because of the time and political will involved.

The other source of compliance demand for project-based carbon reductions is Carbon Emissions Reduction Target (CERT) CERT and Community Energy Saving Programme (CESP) funding. CERT is an obligation introduced by the government on energy suppliers to achieve targets for promoting reductions in carbon emissions in the household sector and combating fuel poverty. Launched in April 2008 as the third stage of the Energy Efficiency Commitment (EEC) the current phase of CERT commits energy suppliers to spend £1.5bn of their profits on energy efficiency through to 2011.

All qualifying energy suppliers must meet individual targets for the reduction of CO_2 emissions in homes. The target is for CERT to achieve CO_2 savings of 154 Mt CO_2 (million tonnes of carbon-dioxide equivalent). Energy suppliers have to achieve these savings through the installation of energy efficiency measures in people's homes. Over 40% of these measures must be fitted in the homes of low-income families, those with disabilities and the elderly.

The Government have announced that a subsequent phase of the scheme will run from 2011 however the details of this scheme are limited at the current time. Each phase of the EEC (of which CERT is essentially phase 3) has approximately doubled the financial obligation to energy efficiency which energy suppliers are required to make. With this in mind therefore it is possible that the financial commitment to energy efficiency expected of energy suppliers in the next phase of CERT starting 2011 could be in the region of £3bn.

While it is not possible to provide an exact figure for the spend through the CERT scheme on energy efficiency in the South East it is possible to say that the scheme will result in tens of millions of pounds being spent on energy efficiency in the region annually.

CESP requires energy suppliers and generators to deliver energy saving measures to domestic consumers in specific low income areas of Great Britain. CESP has been designed to promote a 'whole house' approach and to treat as many properties as possible in defined areas.

The CESP obligation period will run from 1st October 2009 to 31st December 2012 and requires qualifying organisations to meet CO_2 emissions reduction targets in proportion to the CO_2 emissions associated with the energy they produce or sell.

A key difference between CESP and CERT is that CESP will require actions to be delivered in geographical areas selected using the Income Domain of the Indices of Multiple Deprivation (IMD) in England, Scotland and Wales. In England, the lowest 10 per cent of areas ranked in IMD will qualify and in Scotland and Wales the lowest 15 per cent of areas will qualify. Through the 3 years of CESP approximately £350 million will be spent on energy efficiency measures.

Discussions with energy companies and others informed in the CERT field suggest that the energy companies will find it harder to achieve their targets as the low hanging fruit of cavity wall insulation, loft insulation and low energy light-bulbs have been exhausted. Energy companies will have to pay for more expensive measures to retrofit harder to treat homes. CESP, which involves taking a whole-house and a community-level approach, is also more challenging for energy companies to fulfil than CERT obligations to date. Organisations that can provide a pipeline of cost-effective projects and thus make it easy and cost-effective for energy companies to meet their CERT/CESP obligations may be able to attract significant volumes of such funding. Across the South East it is realistic to assume that the energy suppliers and producers obligated under CERT and CESP will be looking to spend over £100 million annually through to 2012 on domestic energy efficiency measures.

5.8.3 The opportunities CERT and CESP present for a SEEDA Fund

- REQUEST FROM SEEDA - Getting a clearer sense of the opportunity of aligning CERT, CESP etc as part of an overall funding package and the economic benefits of doing that

- Research identifies domestic energy efficiency as the first 'project' of the majority of PB groups
- A SEEDA fund can act as a coordinating body for numerous PB groups - bundling up homes into quantities attractive to a utility to fund the refurbishment of
- It is proposed the delivery of action on CESP will a joint effort between the utility company and the LA. A SEEDA fund can liaise with the LA / utility and provide funding for renewables and further measures not covered by CESP to be installed alongside the CESP work.

CERT and CESP have the potential to present a considerable opportunity for a SEEDA Fund. It has been highlighted above that the quantity of carbon reductions that the utility companies are required to fund is increasing, and in turn it is becoming increasingly hard for companies to find projects through which to deliver these reductions. The opportunity for a SEEDA Fund therefore is to act as a body through which the utility companies can channel funds for the energy efficient refurbishment of homes.

It has been noted during this research that action on domestic energy efficiency is the first action of many place-based carbon reduction groups. Because behaviour change is essentially free, promoting this is the initial phase of such action however very quickly funds are required to install energy efficiency measures; the logical next steps of any energy efficiency programme. It is anticipated that local place-based groups could collate the details of homes and measures in their given locality and apply to the SEEDA Fund for funds for the installation of energy efficiency measures. SEEDA would provide the funding using funds received from the utility companies for the purpose. In return SEEDA would coordinate the installation and quantify the carbon savings.

In relation to CESP it is known that it is anticipated that CESP projects will be delivered though a project consortium typically consisting of the Local Authority, utility company and any appropriate community groups. A potential role therefore exists for place-based carbon reduction groups in qualifying areas to work with their Local Authority to collate a quantity of homes requiring refurbishment. In turn they could approach the SEEDA Fund to fund the refurbishment work using funds provided for the purpose from the utilities in a model similar to that suggested above for CERT. The whole-house refurbishment approach promoted through CESP does not include the installation of renewable energy measures. A further opportunity exists therefore where appropriate for the SEEDA Fund to provide funding additional to that from utilities for the installation of renewable energy measures in homes.

5.8.4 Will Corporates contribute to a Regional Fund?

In conversation, SEEDA expressed interest in determining whether corporates would be interested in contributing to a carbon fund with a regional focus or whether they would prefer to invest at a national level. Our research has indicated that corporates are unlikely to find a regional fund attractive as a regional fund per se. The primary concern of companies that have offices, stores or other facilities in specific locations is to find projects that are local to these facilities.

Foundation stated that the companies that they have approached that have expressed an interest in funding projects wish to fund projects in their locality. A printing company based in Cumbria, for example, will not get much PR benefit from funding a project in Liverpool. Likewise, BRE's research with airlines focused on the ability to identify projects close to their main hubs.

The only companies that are likely to take a non-local approach are those that are explicitly regional, such as a regional water utility, or those that have a truly national presence. Our experience with these companies suggest that they will aim to get a geographical spread across the entire country and that a regional fund will primarily be attractive in helping them to achieve that.

The lack of a desire to take a regional approach is not, in itself, a barrier to seeking investment if the fund can provide financial returns and if it can present itself as a prototype that evolve into a more national approach later in time.

5.8.5 Non-financial roles for SEEDA

In interviews and meetings with developers of community renewables and other projects, we asked informants about what roles SEEDA could play in supporting the development of community renewables and other place-based carbon reductions projects.

Most of the answers focused on brokering and policy coordination but specific suggestions were:

- Assistance to place-based groups in identifying owners of property that might be suitable for community renewables projects. As noted above, the first stage of community renewables projects is negotiating with the owner of the property on which the renewable energy equipment will be cited. It can often be time consuming and tricky to identify the right person with whom to negotiate about the project. Groups would often also benefit from someone to broker the introduction to the property owner.
- In discussions about CHP and district heating, our informants mentioned that the primary role that SEEDA could play was not a financial one at all. Our informants felt that if a project was viable, then the finances would be found (although several such projects have benefited from financial support from RDAs). More important was a brokering and coordination role, convening the right organisations (developers, local authorities, financing bodies) and helping to galvanise the political will to make the projects happen).
- Another suggestion was a central resource of appropriate energy resources, e.g. heat loads, wind resources, water resources, timber. We understand that SEEDA has recently completed work on a heat load map for the region. We have not evaluated what information is available on renewable resources.
- Policy coordination and promotion is also crucial. Both Thameswey Energy and Milton Keynes Council pointed out that while many local authorities had expressed an interest in their success, there had been very little follow through due to a lack of political will even though their success is highly reproducible. Both urged SEEDA to play a role in building that political will. One example of the benefits that could accrue is in the area of planning regulations. Following Milton Keynes' lead, Eastleigh, Ashford and Brighton & Hove are developing similar polices without necessarily following a common approach on how funds will be used or how carbon reductions will be calculated. SEEDA can play a role in coordinating and promoting policy that will, in turn, generate millions in revenue to finance place-based carbon reduction projects.

6 Conclusion

The SEEDA Invitation to Tender for this work envisaged the creation of two entities or, at least, two types of activity:

- An Ecological Funding Escalator to support the development of place-based enterprises delivering a range of energy efficiency, renewable energy, water reduction and resource-from-waste projects. Further discussion with SEEDA narrowed the range of projects to renewable energy and energy efficiency projects with a special focus on community renewables projects.

- A Regional Carbon Compensation Fund to financially underwrite the creation of low carbon enterprises and projects by providing early stage finance to achieve both a financial return into the Fund and a carbon return to those investing in the Fund. This will enable the Fund to become self-financing. The RCCF will offer a mechanism by which organisations and individuals can compensate for their unavoidable carbon emissions.

6.1 Recommendations for the Ecological Escalator

The support required by place-based enterprises to take them up the ecological escalator from stage 1, a voluntary group plotting the future round someone's kitchen table, to stage 4, where the group is ready to formally incorporate and to seek finance for a specific project, is described in detail in chapter 4.

We do not believe that it is cost-effective to provide extensive professional services to groups in the early stages of development for the following two reasons:

1. There are very high levels of risk that the groups will not progress up the escalator to reach a point where they develop an investable project. Providing professional services to a wide range of groups could eat up a lot of time and resource without generating concrete outcomes in terms of carbon reductions and economic and social benefits.

2. The voluntary nature of such groups means that caution should be exercised in providing them with too much professional support too early on in the process. Such groups need strong voluntary leaders to become successful and investable. They need to demonstrate vision and commitment before significant financial investments are made. Also, too early intrusion of professional support into the process of development may well alienate members and disrupt the groups' development. Such groups most want to hear from their peers who are their most trusted informants.

We have therefore designed the levels of service provision to be appropriate for each stage of development without committing to any more expenditure than is necessary.

The following detailed recommendations relate to the support element of the EFE:

- **Support should be flexible** and is characterised by:
    - natural clusters or 'nodes' of individuals and organisations around areas of interest/ expertise that can act as incubators for ideas and business growth
    - informal, inter-organisation and one-to-one 'consultancy', advice and support

- encouraging / facilitating meaningful dialogue at a local, as opposed to a regional scale: with local councils, Local Strategic Partnerships, and both established and emerging organisations and businesses
- offering capabilities to help people and organisations:
  - ‘fast-track’ through early stage ‘business development inertia’
  - achieve scale – beyond their first one or two projects
- nurturing practical innovation and allowing people, organisations and the South East Region to retain the intellectual property.

- **Built upon existing links within the informal economy –** cash-strapped community organisations support each other in-kind and independently of formal networks. It would be cost-effective for the Ecological Escalator to work with, and optimise, what is already working well.
- **Build in an iterative response to provision that responds to changes and feedback –** the low carbon field is a pioneering and quickly emerging field. Manage risk, uncertainty and value creation through the Ecological Escalator by piloting and gradually building-up services in response to real and changing need.
- **All support should include a personal relationship that builds understanding and trust with the initiatives and coordinates the support and investment –** prudent lending and investment risk management requires a more intuitive, experience-based approach by business people with years of skills and knowledge.

The analysis of the experience of existing initiatives shows that the Escalator will work best if the following considerations are taken into account in its design:

- A close relationship or the same organisation managing the Escalator and Fund and designing them in parallel.
- providing support in an innovative field where success is unclear by managing uncertainty and building-in flexibility and responsiveness to emerging customer requirements
- managing difficulties with capturing the non-financial benefits of the Escalator
- Supporting economic / social inclusion to bring initiatives beyond the more affluent people and geographical areas. There’s an appetite to do this among groups.
- ‘Future-proofing’ the Escalator by integrating and aligning it with regional priorities
- Setting the right metrics and targets to optimise support for sustained growth of initiatives to scale rather than short term agency targets.
- Minimising the risk of business failure – as the greatest benefits for the regional economy, in terms of employment/supply chain development, will be achieved when organisations reach a larger scale, the Escalator should manage its investments beyond stage 5 to encourage growth.

6.1.1 Support for larger scale place-based carbon reduction projects

While this work has focused primarily on the needs of community energy projects and how this can be delivered, it is believed that a role also exists for the Ecological Escalator in providing support for large-scale carbon reduction projects; in particular combined heat and power plants (CHP). Due to the associated secure energy contracts large-scale CHP projects can be an attractive investment for commercial finance. Capital therefore is not the greatest barrier to the delivery of these projects; rather the greatest barrier is a lack of political will. A potential role for the Ecological Escalator is to provide a degree of advice and assistance to Local Authorities or other body contemplating such a project.

6.2 Recommendations for the Carbon Fund

There are two primary options for the carbon fund:

1. A carbon offsetting/compensation fund along the lines of Foundation or Milton Keynes Carbon Offset Fund
2. A carbon investment fund that is primarily focused on the financial returns from renewable energy generation and energy savings related to community renewables and energy efficiency projects but and used the carbon savings achieved to sweeten returns if necessary to equity investors

In the absence of a formal mechanism to enable funders of UK carbon reduction projects to use the reductions achieved by such projects towards either voluntary or compliance targets, we do not recommend the carbon offsetting/compensation approach. At the moment, the value of carbon reductions cannot properly be incorporated into the financial models of such projects nor will there be sufficient demand to generate a critical mass of investment.

Over time, such a mechanism may emerge, supported by a shift in the definition of carbon neutrality/offsetting to allow investment in UK projects, compliance requirements related to planning permission for new developments and CERT/CESP funding. The value of the market for domestic carbon reductions that this would create could be in the billions of pounds. The fund should do everything it can to encourage such developments and to be ready to take advantage of them, but these developments are not mature enough to generate financial returns and to make the fund self-sustaining in the short-term.

With the introduction of the Feed-in-Tariff and increases in energy prices, however, many community renewables and energy efficiency programmes are close to being financially viable, without the need for a formal mechanism to assign value to the carbon reductions. These projects, however, face the following financial barriers:

1. Insufficient access to risk capital to meet up-front expenses
2. Insufficient returns in the short and medium term to attract commercial investors
3. Challenges in raising adequate equity

The goal of the carbon investment should be to help these projects to overcome these barriers by accepting higher levels of risk or lower/longer rates of return not currently acceptable to commercial investors. This report considered some options:

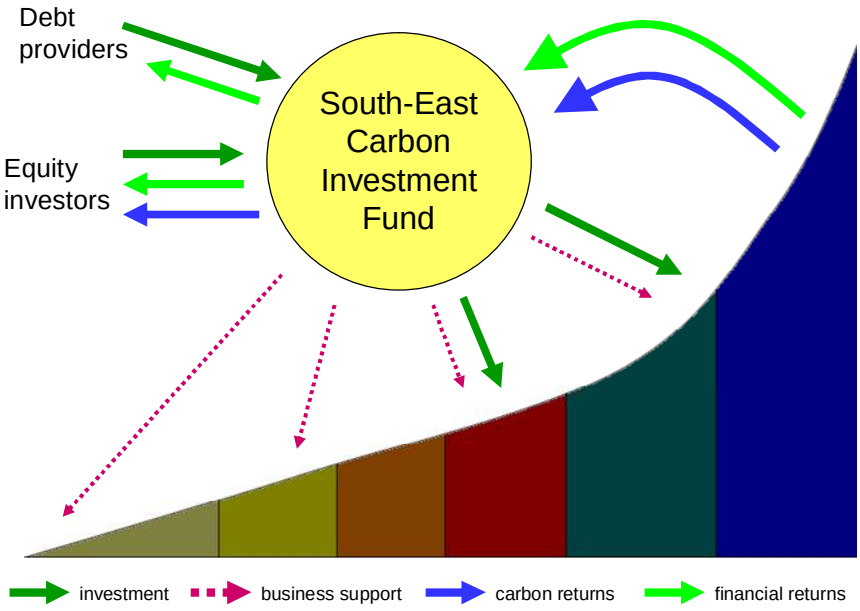
- Grants towards up-front costs with claw-back provisions
- Equity in return for providing up-front costs
- Under-writing up-front costs of equity investors in return for a fee
- Issuance of a carbon bond
- Debt/equity finance to boost returns to external equity investors in the early years of a project

We do not believe that any of these options is necessarily the one and only correct option. The carbon investment fund will have, in effect, a lower cost of capital than a commercial investor because of support from SEEDA and, perhaps, equity investors prepared to accept a financial rate of return lower than a commercial rate in return for the carbon value of all the projects financed through the fund. The investment team running the fund should have the freedom to use their creativity and financial expertise to structure the finance they provide in the way that optimises the financial return along with the environmental, economic and social benefits achieved by the fund.

It may also be that the investment fund does not need to take up-front risk on projects because there are several organisations such as CoRE, H2OPE and Green Valleys which are prepared to take such risks in return for a fee or an equity stake in the projects that they develop on behalf of local communities.

6.3 Combining the Ecological Escalator and the Carbon Investment Fund

One option that seems very attractive is to combine the Ecological Escalator and the Carbon Investment Fund. In this case, the cost of providing the services needed to move groups up the escalator are met from the financial returns achieved by the fund.



We were also guided by the idea that the manner in which the ecological escalator services could be delivered would start to build the pipeline of investable projects in which the fund could invest. Voluntary groups that expended the effort required to access the support provided to them, demonstrably progressed from one stage to another and had the discipline to choose to focus on a viable project are precisely the sort of groups that are likely to be good risks from an investment perspective.

We therefore believe that the people who oversee the delivery of the Ecological Escalator support and interface with the community groups should be the same people who undertake an origination function for the fund, developing the pipeline of projects for the fund to invest in. That is how the fund minimises the risk it takes by investing in projects, because it knows the projects intimately already through their involvement in networking events and mentoring provided by the fund.

6.4 Next Steps

The next steps in the development of a plan to support the development and to finance place-based low carbon projects in the South East would be to translate the recommendations of this report into a detailed feasibility study. The study would examine the requirements for launching a Carbon Investment Fund for the South East which would provide:

- commercial and semi-commercial finance in creative ways to help place-based low carbon projects achieve viability; and,

- required business support services to help projects develop through the various stages of the Ecological Escalator.

The feasibility study would have three components:

1. Understand the pipeline of potential projects in the South East (perhaps using the database of the Low Carbon Communities Challenge):
    - How many projects are there?
    - What development stage is each project at on the six stages identified in this report?
    - What scale of business support services would be required to support the development of these projects?
    - How many of these projects can be converted into investable propositions and what scale of finance would be required?
2. Detailed discussions with potential investors into the fund, to include:
    - Banks, e.g. Cooperative bank (who already indicated a willingness in principle to provide finance to such a fund), Triodos, Charity Bank etc
    - Appropriate corporates, e.g. M&S, B&Q, Royal Mail, BA
    - High net-worth individuals
    - Existing carbon and other investment funds
3. Detailed specification of the resources required to provide the business support services and manage the fund's investment which would address issues such as:
    - Employees
    - Job descriptions
    - Budget
    - Programme of work

The output of the feasibility study would be a business plan for the fund, including the amount of capital required, indicative levels of support from possible investors, a project pipeline with the first tranche of projects that could be assessed for investments and an outline of support services to be provided to projects that are not yet "investable."

Appendix 1 - Organisations Contacted

- Ashton Hayes
- Business Link
- Community Action Groups Oxfordshire
- Energy Saving Trust
- Foundation
- Greening Bittern Park
- Greening Campaign
- Greening Communities
- Kent County Council
- Leapfrog
- Lewes District Council
- Low Carbon West Oxford
- New Forest Transition Hub
- Omni Group
- Ovesco
- RBS
- Social Investment Business
- South East Rural Communities Council
- Southampton City Council
- The Cooperative
- West Sussex County Council
- Brodies (solicitors – experts in establishing ESCOs)
- Carbon Trust
- Climate Change Capital
- Community Action Group
- CoRE
- E-ON
- Farm Energy Project
- Finance South East
- Gentoo Green
- Green Valleys
- H2OPE
- Milton Keynes Carbon Offset Fund
- NESTA
- Sheffield Green Bond
- St Margaret's Bay
- The Converging World
- The Farm Energy Project
- Transition Town (UK Lead)
- Woking Thameswey
- Salix Finance
- Waste Resources Action Programme
- London Early Years Foundation
- London Rebuilding Society
- Liberal Democrats Election Campaign Team
- Social Enterprise London
- Transition Town Lewes
- Portsmouth City Council
- Winchester Action on Climate Change (WINNAC)
- Dartford Borough Council
- The Princes' Trust – South East
- Network 2012
- SEEDA Rural Programme
- Energy4All
- Brighton and Hove Council
- Sustainable Wallingford
- South East Rural Communities Council

Appendix 2 - Feedback from Community Groups survey

Feedback from Community Groups

Specifically for this research project an online survey was carried out during November and December 2009 into 'green' community groups in the South East. The Survey was supported by Climate South East and their members, and additionally the Greening Campaign, Community Action Groups, the South East Rural Communities Council and Transition Towns. The survey was sent both directly to community group members and virally through networks and contacts. It is estimated that over 300 community groups in the South East were reached. A total of 101 responses were received, a high participation level which demonstrates the interest and commitment of the groups contacted.

The survey provides a snapshot of views from a wide range of groups. It was specifically targeted to draw out general barriers and issues as well as more specific points around the formation of businesses, acceptance of funding structures and to assess the appetite of groups to develop more focused action.

All those groups that responded and requested a copy of the results will be emailed a pdf version of the final report once authorised by SEEDA.

Survey Report

Main Findings

Community Group Formation

Tackling climate change was not the reason the majority of groups started, with less than 50% questioned having this as an original aim. Of those that responded at least 23% were 'independents' or residents groups, others were part of a larger group or movement, public sector affiliated or part of a group addressing other issues. This varied widely with transition towns, Community Action Groups and Greening Campaign and Freegle being the most represented. Another 19 wide ranging umbrella organisations were also mentioned, including Church of England, Strategic Health Authority, BTVC Community Network and Friends of the Earth.

Opportunity
The potential exists for carbon reduction focused groups to develop out of existing other 'green' interest groups.

Areas of activity for Groups?

Table 3: Which issues does your group work on?

Answer	Number of responses	Overall % responses
Resource Efficiency	69	16
Energy Use/Energy Efficiency (insulation, better appliances) etc	50	14
Renewable energy and less-polluting energy sources	51	12
Responding to the effects of climate change	49	12
Transport (anything from promoting cycling or walking to campaigning against airport expansion)	45	11
Food	45	11

The main barriers to Action?

Whilst time and funding were seen as major barriers to action, 27% of the groups had been able to find funding allowing them to employ at least one member of staff. Funding is getting to community groups with over 51% having benefited, with 20 of the groups questioned having received over £5,000.

Comment
Funding for small local projects appears to be available from a wide variety sources, especially local councils. It does not appear to be a barrier for the most proactive groups.

Are groups driven by one individual or is it truly a group effort?

Over 71% saw their work as very much a group effort rather than one individual being the initiator/lead, however there were some common hurdles that many groups struggled to overcome:

- Getting people in the community involved (33%)
- Finding the time (26%)
- Funding (21%)
- Finding the people with the right expertise (14%)

Greatest Strengths

When asked to look at their three greatest strengths the highest ranking were:

1. Links with other communities
2. Technical knowledge about problems and solutions
3. Group management

The respondents were far less confident about their campaign skills (using media and communications), their ability to influence policy and their ability to source and receive funding.

Ability to Grow and Change

The community groups felt strongly that in combating climate change they had to tackle behaviour change, develop partnerships with other groups, work to raise awareness, and also to put their efforts into

influencing policy at the local level. Only 4% felt that economic schemes such as carbon rationing, or offsets would be effective for them. When asked what kind of support would be most helpful, connecting with other groups to share knowledge and organise events and funding were the most highly rated. There is a clear desire to know more - whether through working with peers, reading case studies or working with experts - community groups want to learn. It is also clear that in most cases the people involved are driven individuals who want to join up with other groups to be able to increase their political clout.

Comment
Networking and working with peers is interesting for groups. Local lobbying is a natural position for strong interest groups but those passionate about climate change appear to be prepared to act as more regional campaign champions.

Carbon Action

In terms of carbon action it was encouraging that 50% of the groups that commented on renewable projects are 'working' on a project which included some form of renewable energy. The most common project type was solar electricity generation then solar hot water, wind and biomass. When asked about measuring climate change impacts, 21 groups confirmed they already measured CO_2, with a further 29 planning to make some impact measurement. Those groups who do not currently measure carbon would appear to be interested in doing so if there was some form of cash benefit to the community either through income generated by green energy production or a payment for each unit of carbon saved (82%). No value was put on the carbon when this question was asked.

Comment
The understanding of community groups on the most effective renewable energy type may be questionable. The measuring or recording of CO_2 saved is not a priority for all projects and no consistent recording mechanism exists.

Funding for Renewable Projects

Funding as previously noted has been made available to many of the groups with just under 50% receiving funding for some form of energy saving or renewable energy project.

At least 14 groups had received over £5,000 of funding whilst a further 12 had had less than £499. A few groups had had a loan from a non commercial institution (5), one other group was receiving payment for carbon saved, another had sold shares to individuals, another to an organisation. None of the groups had taken out a loan.

When all groups were prompted to consider other funding streams 71 groups were interested in receiving payments for carbon savings, 27 groups were interested in the idea of selling shares whilst over 74% of the groups were not interested at all in taking out a loan. There was potential appetite from groups to look at more formal structures with only 22% of those questioned being adamant that they would not want to create a business structure. The most popular options were Community Interest Company, a Charity, a Co-operative or an ESCO. Industrial and Provident Society polled the least votes, possibly because of limited knowledge but there was a clear push back on forming a Limited Company with only 7% of groups showing any interest.

Table 4: Have you ever received a grant for energy saving or renewable energy projects?

Answer	Number of responses	% of responses
None	60	50
Grant from local or regional government	15	13
Grant from central Government	10	8
Donations from local people	13	11
Other	10	8
Grant from national charity	5	4
Grant from Business	4	3
Grants from local or regional charities	2	2

Comment
The idea of developing into a business entity is not necessarily a problem for the majority of groups surveyed, however they are not attracted to embracing 'traditional' business structures such as Limited Company or taking out loans.

Support currently available for place-based carbon reduction groups

A range of support services are currently available for place-based carbon reduction groups. Below is an overview of what is available with a focus on the South East of England:

These included:

1. Government funded Low Carbon organisations – WRAP, Carbon Trust, Energy Saving Trust
2. Government funded Business Support - Business Link SE
3. Grassroots Community Groups
4. Local Authorities
5. Pro-bono support groups

Low Carbon Funded organisations

Energy Saving Trust – The Greening Communities Programme

The Green Communities Programme is an initiative from the Energy Saving Trust (EST) that aims to support, facilitate and promote community based energy projects. The Green Communities Programme is designed to create a step change government funded service for communities by offering an integrated package of advice, support and funding. It builds on existing elements of EST advice and information service (Community Action for Energy) and local outreach (via the regional Energy Saving Trust advice centres). Currently looking to pilot community based mass retrofitting.

Membership – Free membership to local community groups. Over 3000 now engaged throughout the UK, approx 376 in the South East
Areas covered - UK
Organisation Type – Government funded organisation providing support to local community groups.
Funding – Each community group can claim an annual bursary of up to £200 to help develop energy projects.

Resources - Free training and advice provided by The Green Communities Programme focused on project planning and funding, technical support, events, monthly bulletin and a website with resources. The EST has additionally developed a Community Carbon Footprinting Tool and provides an on-line Carbon Action Plan. Each community group can access up to 3 days professional consultancy to help with project development, technical specifications or to help to access funding. A conference takes place annually which is open to all communities. EST also provide a series of free workshops across the UK to support low carbon community development, the following are some of the titles for these workshops:

- Finding out about Energy
- Making it Happen
- Planning for Success
- Energy Auditing for Your Community Building
- Energy Auditing for Old and Listed Buildings
- Funding your Community Project
- Local Authorities Planning Process

The Energy Saving Trust is also working with a number of South East councils to support their action planning on Climate Change Indicators in an attempt to increase the councils' support for place-based carbon reduction groups.

Carbon Trust

The UK Government's primary support body for business and local authorities both to cut energy usage and to encourage the development of new low carbon technologies. The service is not available to community groups or to domestic premises.

Government Funded Business Support

Business Link South East

Business Link is a national business support service funded through the Regional Development Agencies. In the South East over 50% of the 325,000 VAT and PAYE registered companies will have been provided with information or a service and of these 18,000 will have had Business Adviser contact to carry out Business Action Plans. The service is impartial and free.

The process is based on an IDB model of Information, Diagnosis and Brokerage. The service delivered by Business Link is provided through a national website to which all business facing government generated data is held, customer service teams, and 1:1 or 1 to many Business Advisor interactions.

Key targets for the Business Link service are:

- Intensive Assist / Gross Value Added (GVA)
- Penetration (information reach)
- Customer Satisfaction

This service could be useful to Community Groups who have formed business entities as currently Business Link is targeted to reach social enterprises, with 44 having been supported through a 1:1 Action Planning session in Kent alone during 2009/10. However it is not clear if this would continue to receive similar focus with the implementation of the revised South East Business Link service from April 2010.

Currently Business Link offers a Sustainable Business Service for South East companies, which has worked with over 10,000 businesses over the last 2 years. Each county has a Sustainable Business Adviser who works closely with Business Advisors, local partners and businesses. They cover a full range of advice from resource efficiency, low carbon opportunities, green marketing, Environmental Management Systems, and local supplier networks.

For community groups that have set up as business entities this knowledge and networking resource would

be of value but again it is not clear whether this facility will be available when the revised South East Business Link Service comes into operation.

Business Link additionally offers a "Start-Up" programme for new business. This comprises a series of free short general workshops and a stand alone session for social enterprises. The programme takes a person/group through the key business elements and positions them to be at a point ready to begin operations. Post the Start-Up period, businesses move into the standard Business Link IDB process.

Grass Roots Community Groups

Throughout the research it was clear that a number of non-governmental and community based movements are vital for creating, galvanising and providing on-going support for local action. Some of the groups are focusing specifically on the Low Carbon Agenda, others include it as part of a wider 'greening' programme, and some have members predisposed to the low carbon agenda but are not yet tackling the issue directly, such as Freegle.

The majority of these groups are grassroots led and offer a route to provide a peer to peer support process offered by people who have already been through the problems of development; this is viewed as highly important for many of the participants. These groups can provide an experienced foundation to development and help groups avoid pitfalls. However it must be accepted that they may have particular interests and views and may not always offer an 'independent' perspective.

Greening Campaign

The Greening Campaign was set up in response to the threat of global warming. It is an innovative idea to help motivate people to reduce their energy consumption and therefore lower their personal and community carbon footprint. The campaign was started by Terena Plowright, who is a resident of Petersfield in Hampshire. The campaign was taken up by several other local communities.

The Greening Campaign joins individuals, groups, councils, schools and government together in a joint programme.

Year started – 2007 (1st Greening Campaign launched in Petersfield, Hampshire)
Membership – 140 active communities in the UK
Areas covered – Predominately South East, but now spreading to other areas in UK. Estimated 100 communities in the South East with more than 30% of these in Hampshire
Organisation Type – Local committee structure for each Greening Campaign, the Greening Campaign itself is a Community Interest Company.
Relationships – Local Authorities have supported campaigns.
Funding – Funding has been received from Local Authorities, SEEDA, and number of locally based sustainable development initiatives.
Issues – Seems to be driven by founder. Also issues with individuals due to volunteer structure in each Greening Campaign area.
Resources – They provide new Campaigns with a structured four phase plan, which includes printed cards, assistance in organising launch events, and support to identify carbon saving opportunities in the community.

Transition Towns

Transition Network was set up in spring 2007 to support Transition Initiatives around the world. The mission is…

- …to inspire
- to encourage
- to connect
- to support and

- to train…

...communities as they consider, adopt, adapt and implement the transition model in order to establish a Transition Initiative in their locale. The transition model emboldens communities to look peak oil and climate change squarely in the eye and unleash the collective genius of their own people to find the answers to this big question:

For all those aspects of life that this community needs in order to sustain itself and thrive, how is it going to:

- *significantly rebuild resilience (in response to peak oil)*
- *drastically reduce carbon emissions (in response to climate change)?*

There are currently 127 Transition Towns in England.

Year started – 2007
Membership – 127 Transition towns in UK with others Worldwide. 26 Transition Towns/Hubs established in the South East.
Areas covered – Worldwide
Organisation Type – Charity with Board of 6 Trustees. Individual Transition Towns encouraged to adopt standard structure of Core Group and action groups. At least 1 Transition Town, Laverham has moved to Community Interest Company status.
Relationships – Well connected Trustees at national level. It appears that some Transition Towns have relationship issues with Local Authorities due to conflicting objectives; others have specific 'Council Groups' to develop better working relationships with their local authorities.
Funding – Each group self funding with donations from members, local authorities, finance and in kind.
Issues – Relationships with Local Authorities, projects vary in Transition Towns as a result of local volunteer's interest.
Resources – The network is supported with a variety of resources including: - training, handbook, flyers and other printed material, space on website, standard constitutions, event support, conferences.

Freegle

Freegle is a national grassroots organisation of people who are giving and receiving free unwanted items in their immediate community. Local charities, non-profit groups and communities are encouraged to join. There are 213 Freegle Groups currently in the UK with almost 1 million members.

All groups within this organisation operate with a basic principle – all offers and requests must be freegle (free and legal). Some groups may have additional guidelines such as no offers or requests for animals, or that items must be suitable for all ages.

Freegle's aim is to keep anything reusable out of our landfill sites.

Year started – Developed from Freecycle so well established
Membership – 213 groups
Areas covered - UK
Organisation Type – Umbrella organisation formed by experienced volunteers, with network of local moderators
Relationships – None identified
Funding – None required
Issues – Reliant on local volunteers
Resources - Online resources for moderators

Energy4All Co-ops

Energy4All was formed in 2002 to expand the number of renewable energy co-operatives in the UK to support a national transition to low carbon. Energy4All is uniquely owned by the co-operatives it assists.

Energy4All has seven renewable energy co-ops currently with a few more in development; Energy4all

has helped each co-op to successfully raise the required finance through public share issues. To date over £13 million has been raised through the co-ops. The minimum public investment is usually £250, with a legal maximum of £20,000. The co-op is run according to normal co-operative principles, so each member receives a single vote in the co-op's affairs, regardless of the amount invested. The co-ops' members elect a local board, which is supported by Energy4All in running the co-op

Year started – 2002
Membership – Owned by the seven Co-Operatives it assists.
Areas covered – UK – one project in the SE - Westmill Wind Farm Co-operative Ltd
Organisation Type – Co-operative
Relationships – Several with banks, Regional Development Agencies, Trade Associations and Local Authorities.
Resources – Energy4All has a website "Energy4All Steps" to provide clear and practical information on the process of building wind farms and projects. There is a team of 15 staff based in offices in Barrow in Furness and in regionally based development teams.

Community Action Groups
Community Action Groups (CAGs) is a network of local voluntary groups in Oxfordshire. They organise events and initiatives to raise awareness and take action on sustainable development including resource efficiency, carbon reduction, sustainable transport, food, energy and water. There are 24 active CAGs.

The support offered is day to day hands on, helping start up CAGs with practical information on how to set up a group, write a constitution develop skills and deliver training. Resource Futures hosts a website with access to resources such as fact sheets and newsletters.

Year started – 2001 as waste reduction programme, and 2005 as CAG Network
Membership – 26 CAGs registered with 24 active
Areas covered – Oxfordshire, although Resource Futures is known to be talking to other Local Authority areas
Relationships – Strong support from Local Authority as initiative was developed by them
Funding – Oxfordshire County Council fund staff, each CAG can apply for an annual grant of up to £250 to help with administration and events. Also additional funding £500- £1000 for specific projects.
Issues – Political dimension due to funding from Local Authority
Resources - 2 members of staff, 1 full time and 1 part time who support the CAG Network mostly phone and email support – funded by Oxfordshire County Council.

South East Rural Communities Council
The South East Rural Community Councils (SERCC) is the regional organisation for the Rural Community Action Network, (RCAN) in the South East. RCAN is a national network of charities that support and work with people living in rural areas across the whole of England, to keep their villages and communities thriving and sustainable. They have a strong reach at a very local level, working with diverse and often small interest groups.

Membership – 8 County Based Rural Community Action Networks with access to 2800 member organisations in the South East.
Areas covered – South East, links to National Rural Community Action Network.
Organisation Type – Charity. Board of Trustees from each of the 8 county-based Rural Community Action Networks
Relationships – Member of South East Climate Change, supported by SEEDA and DEFRA
Resources – SERCC has a small team of staff based in offices in Guildford. The team support communities to develop community actions on a variety of areas including climate change.

Low Carbon Communities Network
An online national community network that has been set up as a not-for profit business, it offers information and a networking platform and runs a national annual conference. The network has grown from DEFRA funded community challenge funding and is closely linked with Ashton Hayes and Chester University. It became a membership group in 2009.

Its key aims are:

- To encourage the adoption of low carbon and zero carbon technologies and lifestyles at a community level, and to enable groups engaged in this to be as effective and efficient as possible.
- To create greater community and political awareness of the urgency of action required on climate change, and offer clear pathways to identify high impact, achievable local solutions.
- To create an effective lobbying organisation, working at the appropriate political level.
- To create an organisation that despite its radical stance has appeal beyond the traditional green movement – offering an inclusive model for local activism.
- To work co-operatively with all other groups and organisations with similar aims.

Membership – It became a membership group in 2009
Organisation Type – Ltd Company – not for profit

Local Authorities and other local public/charitable bodies

There appears to be no standard offer of support by Local Authorities for place-based carbon reduction groups across the region but there is a long standing tradition of ad hoc funding and support offered for a wide diversity of community action. This may be County Council, Borough or Parish Council led or indeed small local charities. Support for carbon reduction projects is a relatively new area for public support and as such has higher focus in some areas.

The support tends to be in two forms:

1. Provision of designated council staff to help with a specific low carbon issues or general community project development
2. Provision of moderate levels of funding through grants and challenge funds

Every Local Authority in the South East has a different approach to support and funding for groups and the development of specific place based activity.

Business Improvements Districts

A Business Improvement District is a partnership between a local authority and the local business community to develop projects and services that will benefit the trading environment within the boundary of a clearly defined commercial area. Over 42 Business Improvement Districts have now been established across England and Wales.

BIDs give local businesses the power to effect changes that will benefit them and their local community. Improvements may include extra safety/security, cleansing and environmental measures, improved promotion of the area, improved events, and greater advocacy on key issues, but the legislation does not put a limit on what products or services are provided. The opportunity exists therefore for BIDs to be advocacy and implementation groups for the development of low carbon projects. The following BIDs have been identified in the South East.

- Reading BID
- Lancing BID
- Winchester BID

- Worthing Town Centre BID
- Segnesworth BID
- Southern Cross BID
- Brighton BID

Routes for Funding Community Based Action at a Local Level

Many small community based groups have received funding, the survey we have undertaken as part of this research identified that many of these grants were from Local Authorities. Some of the more proactive councils develop specific funding streams to support local community carbon reduction activities:

Carbon Levy on Planning
Explored in greater detail in Section 5.6.2 is the route currently being trialled by both Milton Keynes and Eastleigh. In Milton Keynes the planning process is used to levy a carbon tax on developers which is being used to fund carbon reductions.

Carbon Levy on Car parking
Exeter City Council has been running a scheme since 2007 where all cars coming into the City and parking in municipally run car parks have been charged an additional 2% levy. This money is directly used to fund Low Carbon Community activity with £95,000 being available in 2008. The benefit of this process is a steady annual income stream that allows community groups to plan and be confident of bidding for a long term funding programme.

Private funding
Kent County Council has successfully run a Carbon Challenge in the county and is now looking to repeat this exercise; seeking private funding to provide the Challenge money.

Funding for community groups is also available from charitable foundations and some government community development schemes:

Community Foundation Network
A UK wide group that manages a range of charitable funding for community groups. The Community Foundation Network has an office in each of the South East counties and they also manage the Government's Grassroots Grants Scheme.

The Grassroots Grants Scheme is a three year £130 million scheme, launched in September 2008, aimed at helping small voluntary and community organisations provide much needed help in their communities and reach out to the most vulnerable people.

Grants have been spent on a range of community activity from healthy food parcels for deprived communities to social activity for carers – helping communities to thrive and deal with the individual challenges that face each local community. Small and local community groups with annual incomes below £30,000 can apply for the grants of between £250 and £5,000.

There are 8 Community Foundation Groups in the South East:
- Kent Community Foundation
- Hampshire and the Isle of Wight Community Foundation
- Sussex Community Foundation
- Oxfordshire Community Foundation
- Milton Keynes Community Foundation
- Berkshire Community Foundation

- Buckinghamshire Community Foundation
- Surrey Community Foundation

Big Lottery Fund
Whilst this ostensibly should be providing a big boost to community groups, over the last 4 years only 6 groups in the South East working on Waste/Greening/Climate Change or Low Carbon have been awarded any funding. Three of the groups were working on recycling/waste/greening awareness, two were looking at raising awareness for climate change and one, the Low Carbon Network on the Isle of Wight was looking at local carbon footprinting.

Pro-bono Support Groups

LawWorks is a charity which provides free legal advice to small charities, not for profit, voluntary and community organisations and social enterprises in England and Wales using volunteer lawyers.

They offer help groups with a wide variety of legal work including company law, employment law, intellectual property law, property law, charity law; tax/VAT law; insolvency and help in drafting contingency plans; insurance law; health and safety law; general contractual / commercial matters etc.

This group could provide useful support for community groups looking to develop business activities.

Appendix 3 – The development of place-based carbon reduction groups

LEVEL	Stages of 'community journey'	[a] Key needs [incl. skills]	[b] Barriers/ challenges	[c] Factors influencing success	[d] 'Value for money' considerations for Escalator	[e] Recommended interventions
1	Existing group interested in carbon or individuals wanting to take low carbon action *e.g. Transition Town Lewes*	Looking for information, understanding what can be done. Wanting to talk to someone. Having enough likeminded local people/friends (may only be 2-3) to feel confident to put ideas to others.	Time: input is entirely voluntary at this stage Time-consuming recruitment of volunteers and face-to-face engagement of community Finding out what other NGOs and the council are doing so as not to duplicate Sense of isolation: 'going against the grain' Strong individual pushing for 'pet' project to happen when others are better to start with Limited knowledge	Charismatic, bold and well-connected leaders Severe events – e.g. floods – can lead to group action Individual or group with passion and drive, a real commitment to see through change. Basic knowledge of an aspect of low carbon: may be related to work experience.	Filters groups/ individuals that have the wherewithal to make it work at that point in time. Brings forward innovative ideas for action, some of which will be strong but not taken forward for personal and other reasons. Entrepreneurs and individuals most likely to succeed are already plugged-in to effective networks. Grassroots organisations are highly motivated and want support to 'help themselves' they don't want/need spoon-feeding.	Connections with established organisations via a range of channels Means for 'reaching out' to get communities involved 'Nodal' communications with people/ organisations working in similar/ related fields and local areas Support and augment what is already working well on an informal, grassroots basis e.g. transition towns format
2	Place-based group founded *e.g. Ovesco* *e.g. WINNAC*	Developing a vision and purpose. Early successes: setting initial goals [e.g. fund-raisers or 'Lewes Pound'] around which to convene action. Physical community spaces to use and facilitated discussions to create legitimacy,	People wanting to be part of a group more than taking action Being too ambitious with the first project Finding the 'story' of who the organisation is. It is hard to define because organisations have lots of areas of interest. This affects their future	Adoption of existing structures, formats and purposes for action can accelerate groups through this stage [e.g. Transition Towns] Involvement of professionals already working in the field who understand the terrain and offer strategic direction Involvement of people with general business skills	Groups use the council and Local Strategic Partnership as information portals whether this is most appropriate of not. Support requirements are generic to setting up social enterprise and business in general.	For groups that have the drive, capacity and determination to make this happen: access to specialist legal and 'low carbon' advice access to tailored, trouble-shooting to navigate the options general business / social enterprise start-up advice/ training.

LEVEL	Stages of 'community journey'	[a] Key needs [incl. skills]	[b] Barriers/ challenges	[c] Factors influencing success	[d] 'Value for money' considerations for Escalator	[e] Recommended interventions
		working relationships with existing groups and recruit interest. Finding effective formats for volunteers to collaborate. Strong local and other networks to learn from mistakes, discover what's already happening and connect with this Marketing: develop a sense of identity and bringing the community in Legal: choosing the right constitutional model. Technical / engineering knowledge to identify the best local projects	ability to communicate with funders and communities. Lack of enthusiasm from community	Having an existing organisation to merge with A supportive local authority: and being known by the local authority/ strategic partnership for funding and action. Gaining expert pro bono support from local organisations.	High levels of input required from the group to make this happen.	
3	Place-based group taking first actions e.g. Greening Petersfield	Development of business/ strategic plan that focuses time/ persuades investors Finance to conduct feasibility studies and fund start-up Understanding what is required to get things off the ground. Volunteers that are business minded and used to making arrangements with companies	Inertia caused by: - group members often "allergic to profit" so don't actively apply business/ marketing/ commercial logic to action - individuals/ organisations don't know what they don't know so learn from their mistakes - committee style leadership, where its necessary to reach consensus - state aid rules. Insufficient	Gaining strong connections with/ support from, local businesses Understanding business start-up and strategic discipline to robustly develop the idea from a commercial perspective. A mix of high-level strategic planners and implementers The number of organisations that can help in the area Size and visibility of the first project to create a sense of achievement/ stimulate wide-scale community engagement.	Groups have lots of questions, but not the capacity to act on answers and advice.	Streamlined, transparent / connected information sources to facilitate research and decision-making.

LEVEL	Stages of 'community journey'	[a] Key needs [incl. skills]	[b] Barriers/ challenges	[c] Factors influencing success	[d] 'Value for money' considerations for Escalator	[e] Recommended interventions
		and authorities and writing bids. Winning/ securing the first project to build a business track record.	capacity to make use of advice and support.			
3	Identifying future projects e.g. Low Carbon West Oxford e.g. St Margaret's Bay	Input from people and organisations that have 'done it all before' and can help them fast-track. Input from people with expertise specific to the low carbon field Positive engagement from local businesses for funding/ sponsorship and resources. Understanding of ways to raise finance – grants, share issues and loans. Needing wide ranging expertise – not just one specific solution. Need to be able to consider best options.	No assets [except personal assets] against which to secure business loans Often no strong business plan to lever funds from potential investors. Not knowing investor options. Fear of choosing wrong options. Confusion over funding channels and fragmented/ shifting rules and requirements. Concern over issues of scale and cost. Risk aversion – as opposed to risk management.	Consistency/ availability of government support Potential lack of knowledge by funders of the potential of new low carbon projects. Time to look at complex issues. Specialist low carbon expertise and understanding of shifting policy/ regulatory factors: to spot opportunities.	Time-intensive therefore capacity is a key determinant of success and eligibility for support.	Groups that have time/ capacity to plan need technical/ developmental support to build a successful first project e.g. personalised 'sounding board' like a case worker or mentor that is experienced in the low carbon field.
3	Engagement of community e.g. Ashton Hayes e.g. Transition towns New Forest	Self selected members of a group take on the role of communications Door to door conversations/ pub talk, school gates – discussions with friends, canvassing of support Marketing, design and media experience and local signage /	Time constraints Need for level of expertise e.g. use of video clips and images to build community profile around simple narrative 'Going Carbon Neutral'. Achieving formal commitment from participants Suitable community venue to meet whole community	Demographics, distribution and size of target community Links to local colleges / university Maximising pro-bono or in kind support from local businesses - e.g. printers/ web designer/ pr	Local communication: speak to neighbours in a direct way that would be unacceptable for government or authority. Keenness to extend reach beyond the 'usual suspects' but don't know how to do it.	Applied information and training on principles of community engagement from practitioners. Self-help resources also useful; e.g. toolkit for media production and engagement.

LEVEL	Stages of 'community journey'	[a] Key needs [incl. skills]	[b] Barriers/ challenges	[c] Factors influencing success	[d] 'Value for money' considerations for Escalator	[e] Recommended interventions
		branding Volunteers/ students to knock on doors No cost projects to involve each households (e.g. behaviour change)				
3	Application for funding to support small-scale projects *e.g. WINNAC*	Experience of writing funding applications Channels to identify and be aware of opportunities. Understanding of funder needs/wants	Fragmented, transient, difficult to find grant funding sources that have short deadlines. State aid rules Not knowing how to write applications. Disappointment of not winning funding / competitions. Annoyance of funding being withdrawn or having perverse rules attached to it.	'Professional' volunteer with expertise in application for funding/tendering/quoting Good network into local funders (often local authorities) Reactive and ill-considered business planning to fulfil grant funding requirements.	Application issues and success factors are common to all social enterprise and businesses – not low carbon specific.	Database and communication service for all funding opportunities Support service for writing applications Clear guidance on primary info points e.g. council websites
4	Funding to support full/ part-time person *e.g. WINNAC*	Experience of writing funding applications Channels to identify and be aware of opportunities Clear understanding of role by the group Ability to recruit the right person Ability of individual group members to release responsibility	Time consuming to apply Need for level of expertise Understanding of funder needs/wants	Must be clearly project /time based, or if the role provides more general support, must have plan for funding extension or phase out.	This individual is likely to give pro bono time over and above job description and will act as a key resource. It's crucial to get the recruitment right to maximise this resource.	Business support and advice to develop this opportunity strategically.
4	Pre-feasibility study *e.g. Ovesco*	Expert support - most likely to be external to the group		Core of committed group individuals who have a high personal interest in success and have come	Quickly determining, prioritising and taking a	Engagement with other social enterprises and individuals who

LEVEL	Stages of 'community journey'	[a] Key needs [incl. skills]	[b] Barriers/ challenges	[c] Factors influencing success	[d] 'Value for money' considerations for Escalator	[e] Recommended interventions
		Clear group contact points for any external support		to group with strong skill set or been prepared to develop this. Input of local information and facilitated introductions	pragmatic approach to the strongest opportunities. Requires experience-based judgements from niche practitioners – not 'standardised' advice.	can make rough 'viability' recommendations. Personalised support to know what are next steps and avoid pitfalls.
4	Business plan and creation of legal entity *e.g. Low carbon West Oxford*	Clear objectives for the Business and ensure understood by community and endorsed Need for ongoing feedback loop to community – updating and encouraging Use existing local skills or develop in key group member. Agreement on responsibility for actions.	Concerns about commercialisation of a community activity Group leaders moving beyond/ahead of local support Suspicion of favouritism and money making	Part time enthusiast with business skills. Core of committed individuals who have a high personal interest in success and have come to the group with a strong skill set or have been prepared to develop this People comfortable with semi or fully commercial aims Part or full time member of staff – to allow high level of time commitment	Organisations most likely to succeed have strong business acumen. Many organisations won't have business acumen because they are driven by social/ environmental goals. Personal and business development critical as upfront investment must be based on quality of people in the business as well as quality of business plan to manage risk.	Groups that have 'commercial awareness' to grow their business and time/ capacity to plan need impartial and personal advice on best format for entity and access to development support.
4	Planning permission granted, *e.g.*	Need for ongoing feedback loop to community – updating and encouraging – not loosing community groundswell	Complexity of planning process Time taken to achieve and loss of interest by group members	An expert guiding through all these stages – may be Escalator fund based, drawing in support from various groups or directly managed by the renewables provider	Access to experts and entrepreneurs who have applied knowledge because they've already done it. Skills and business acumen to achieve business plans	Facilitated access to a pool of experts – face to face/ telephone support. e.g. private consultants, public support, price based
5	finance secured, commissioning	Full Time staff, Access to professional skills – often offered by the community	Understanding how to manage commercial finance	Willingness to take risk Ability to keep the community involvement	Excitement in taking on a major business venture Meeting personal as well as community goals	Commercial support in managing debt/equity

LEVEL	Stages of 'community journey'	[a] Key needs [incl. skills]	[b] Barriers/ challenges	[c] Factors influencing success	[d] 'Value for money' considerations for Escalator	[e] Recommended interventions
6	NEW BUSINESS MODEL	NOT IDENTIFIED IN THE SOUTH EAST	NOT IDENTIFIED IN THE SOUTH EAST	NOT IDENTIFIED IN THE SOUTH EAST	NOT IDENTIFIED IN THE SOUTH EAST	NOT IDENTIFIED IN THE SOUTH EAST