



Community-Owned Renewable Energy Projects

Evidence for their development, funding and sustainability

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Executive Summary

This research provides a summary of the literature and evidence relating to community renewable energy projects. It focuses on the practical examples of community-owned renewables, to consider the way they develop, what benefits they bring, how they have been funded and how they can be sustained. Annex 1 contains a complete list of the evidence that has been reviewed.

Specifically, the report is designed to answer the questions set by Community Energy Plus (CEP), across four areas:

- 1. Evidence for community-owned renewable projects, their results, lessons and implications, including:**
 - 1.1 What evidence is used to justify the need of community-owned renewable energy projects?
 - 1.2 What are the advantages and disadvantages as compared to more commercially focused proposals?
 - 1.3 Which have been the notable successes and failures, and why?
 - 1.4 What scale of project and technology has been most successful?
 - 1.5 Are there economies of scale that work better within certain communities?
 - 1.6 What are the consequences of working in a rural setting such as Cornwall?
- 2. The degree to which projects grow or replicate their approaches, namely:**
 - 2.1. Is there any evidence of projects being able to grow/replicate their influence, assisting further projects?
- 3. The models used by community groups to raise capital, particularly relating to share based approaches:**
 - 3.1 What evidence exists for how community share issues work?
 - 3.2 What are the key issues that local groups have considered?
 - 3.3 Why have they opted for a share issue rather than other financing options?
- 4 How projects have used the income they generate. Specifically:**
 - 4.1 How are funds from community-owned renewable energy projects used?
 - 4.2 What research has been done into the success of proposals to create revolving funds to support further projects?
 - 4.3 What level of funding is required to make a revolving pot work?

To help, twelve community-owned renewable energy case studies were compiled to show the range of approaches that are being taken – Annex 2 and table 1. These are referred to throughout this report and include: projects using wind, hydro, biomass and other technologies, at a range of scales, using different models. In addition, Annex 3 provides some examples of projects that have used share based approaches to raise capital both within the energy and wider community enterprise sectors.

Community renewables appear to be coming of age, with the alignment of different objectives from a variety of sectors and a strong drive from communities to take action. The evidence shows diversity between projects in terms of their purpose, approach and benefits. This variability appears to be a key aspect of the success of community-owned projects, but results in different understandings and interpretations about what these projects consist of and who they benefit. These issues are discussed within the background section of this report.

Evidence for Community-owned Renewables

The need for community-owned renewables

There is a considerable amount of evidence to demonstrate that there is a need for community-owned renewable energy projects. This is evident from both the large number of projects that exist and the range of organisations involved. They are considered from two different aspects: the actors involved (communities, Government and others); and the reasons that projects develop (meeting local needs, taking advantages of opportunities, addressing wide concerns, and as a means to an end). This sits within a wider debate about the sort of energy systems that people want in the future.

From the perspectives of different actors and themes, it is clear that there is strong support for the development of community renewables. Many community groups have just got on and done it to meet local needs and concerns, or to take advantage of an opportunity, such as the development of a commercial wind farm. The interest is clearly demonstrated by the number of projects that exist within the literature, and the number of projects supported through initiatives like Green Communities and the Low Carbon Communities Network. It is also evident from the application for support to national funds and competitions. These support programmes have emerged alongside the recognition from Government and other organisations that individuals and communities will be central to enabling national, regional and local targets to be met.

The advantages they can offer

There are some known barriers to the development of community-led renewable projects that have included issues such as cost, network access and the capacity to act. Policy is helping to address these, and support and advice can help build the capacity of communities. To help understand what advantages community approaches may offer, the potential benefits of more commercial approaches are considered first. These were drawn from studies into commercial wind schemes, although their potential benefits are relatively generic. They were then compared to the projects and research into more community-led renewables, which identified a range of potential benefits.

- Local income generation: projects can provide an income stream to support further projects within a community, such as local regeneration projects and/or provide financial returns to individual investors.
- Local approval and planning permission: the involvement of local people in renewable energy projects generally increases acceptability and support, potentially helping to overcome planning problems.
- Local control: community approaches can deliver a high level of participation, control and democracy, further increasing acceptability. When this is missing, projects can become more divisive and controversial.
- Lower costs & reliability: several projects have enabled communities to meet their energy requirements at lower cost and with higher reliability. This can help address wider issues such as rural and/or fuel poverty.
- Ethical/environmental commitments: projects can help communities to meet their desire to act on a wide range of concerns such as climate change and peak oil.
- Load management: small scale community renewables may help provide local network benefits and may also result in communities becoming more active players within the energy system.

- Access to funding: communities can access grants and raise capital to enable renewable projects to happen that commercial schemes cannot.
- Trust: this is generally increased through community-led approaches.
- Behaviour change: engagement in a local energy project can help to change attitudes and behaviour towards renewables and energy demand.
- Wider community development: this can result in further projects and more sustainable communities.
- Delivering targets: community renewables can play an important role in meeting national, regional and local targets, across a range of issues from carbon to employment.

Comparing the advantages offered by community renewables to more commercial approaches to some degree is subjective because the benefits vary greatly from project to project. It is evident that commercial schemes can bring a wide range of local benefits and that these can be achieved with relatively little effort on behalf of the community itself. However, for those communities that are willing and able to act, it appears from the evidence that in many instances a community-led scheme will result in a wider range of benefits for local people, which in most cases seem to increase with ownership.

Examples of success and failure

There are many examples and much research into the success of community renewable projects, but little evidence of specific failures. This in part appears to relate to the fact that much of the research has focussed on how community renewable projects work and what benefits they bring. There is also a recognition that individuals involved within community projects tend to go to great lengths to ensure they succeed.

Where projects have been less successful appears to relate to failures in gaining funding or support to enable a project to happen. This can be through the poor design of programmes and a wider misalignment between the needs of communities and the approaches taken by Government and their agents. It is clear from the case studies that the problems can be overcome, particularly through the provision of expert advice and support, alongside access to funding. This has been shown to be highly effective in Scotland where consistent support has been provided for community renewables. Through this they have been able to identify some key lessons for encouraging successful projects from both the communities themselves such as a strong sense of purpose and committed volunteers, to wider considerations such as support for planning and infrastructure. In comparing these against the case studies in Annex 2, it is apparent that projects have a number of factors that make them successful; although, a key finding is communities need the flexibility to create projects that are most appropriate to their local circumstances, rather than a one glove fits all approach.

Technology choice and project scale

Two sections of this report consider scale and technology within community renewables. They show that the diversity within projects and the approaches taken by communities mean that there is no overall evidence regarding which technology or scale is most successful. However, there has been some favouritism for the use of wind power, perhaps linked to its relatively maturity and ability to generate a good income. Hydro is another popular technology in the case studies and many projects use a combination of technologies to meet their needs.

In relation to scale, there is an even greater diversity of approaches, ranging from small projects linked to building-integrated technologies through to commercial scale wind turbines. Looking at the links to economies of scale it becomes apparent that the bigger, wind based, community-owned renewables tend to be linked to 'community of interest' approaches, such as the co-ops making up Energy4All. These initiatives, that raise several million pounds in share capital, are well suited to large scale commercial developments which can provide good returns to the individual investors. These compare to the 'community of geography' approach, which tend to be designed around meeting specific local needs and this therefore dictates their scale.

Both the choice of technology and the scale may well change as a result of the introduction of FiTs (Feed in Tariffs) and the RHI (Renewable Heat Incentive), as communities become more ambitious or as commercial developers and new entrants seek to capitalise on the returns that they can offer, through more community focussed projects.

Rural communities

The final section of the evidence from existing projects considers community renewables and the link to rural communities. Consideration is given to the nature of rural communities themselves, what they can mean for the support of a project, and what implications they can have on finance.

It is found that rural communities generally are more open to the development of renewable energy and more accepting of larger scale schemes. This seems in part to relate to the fact that renewables are more common in rural areas and therefore people are more aware and used to them. There is also recognition that the range of opportunities is greater and the levels of constraints are lower in rural areas. Projects have been developed to take advantage of them and also respond to specific issues such as unreliable energy supplies, high energy costs and efforts to reduce levels of poverty. There has also been a drive to support the wider regeneration of rural communities through the creation of new income streams and the creation of jobs. As such, revenue generating community-owned renewables could play an important role in helping to make sustainable rural communities in the future.

In terms of funding there are also opportunities and constraints; partly linked to the known problems in rural areas, such as poverty, deprivation and the need to wider regeneration. Rural renewable energy projects can help address these broad issues and therefore may be able to access a range of grant funding to help support the development of a project. However, high levels of poverty can also mean that the opportunities to raise capital through community share schemes could be low, possibly making this approach to financing less successful in a rural community.

The introduction of FiTs could also have an impact on rural projects as it can increase their economic viability. However, they could also encourage some people with capital to invest their income in their own scheme, instead of investing in a community approach. This could include farmers and landowners who would rather put up their own turbine than allow a community to do so on their land.

Growth and Replication

Section two of the report considers the ways in which projects grow and/or are replicated. This appears to happen for many reasons and often just as part of the natural evolution of projects that change with the lessons learnt, and the comings and goings of the individuals involved.

There are some examples of stand-alone projects, most often linked to building-integrated renewables, which do not appear to grow much beyond meeting a specific local need. However, most other projects show high levels of growth which have scaled up their activities in response to the range of issues they have identified; introduced new technologies and expanded the scale of those they are already familiar with; and responded to their increased levels of knowledge, skills and confidence. Often projects demonstrate several of these types of growth.

Replication is also common within community-led renewables. The evidence shows how this can happen in relation to particular models, which can be adopted by other communities; through the use of particular approaches to securing funding, including the gearing ratios that enable projects to happen; and it can occur in relation to mode of delivery, with some organisations offering a particular approach to help communities. It can also happen spontaneously from the communities themselves wishing to publicise and share their expertise and knowledge and through new communities approaching existing projects to directly find out more.

Both growth and replication can be facilitated through good communication, open access to people and resources, and through the support of network organisations. There are some recognised problems with top down, national programmes that attempt to force the replication of particular models of best practice, and evidence to suggest that a number of barriers can be removed to further facilitate the growth of community-led projects.

Financing

Raising capital is a key issue to the success of any organisation or project. Community-owned renewable energy projects are no different, and there are a wide range of potential ways that capital can be secured, including grants, equity and debt finance. This report only considers in any detail community share issues as a way to raise capital.

How community share issues work

Raising capital through share issues has been widely used within community renewables and other social enterprises. Its popularity has significantly increased in recent years as communities have sought to save local facilities, secure land and respond to bigger issues such as climate change. Community renewable projects have been a popular area for the use of community shares, which in part relates to the ability of projects to provide a return and is also due to the social, community and environmental benefits they can provide.

The actual process of raising community share capital is well understood, if a little complicated by the wealth of information and variety of approaches in use. The report details some of the key resources that are available and highlights those organisations that can provide guidance and support.

A key element to successful community share schemes relates to getting the correct legal structure in place. There is no right or wrong approach and this ultimately depends on a number of project specific factors such as the type of project, its scale and what benefits will be passed back to the community. It is clear, for projects that intend to raise share capital, an IPS (Industrial and Provident Society) co-operative or community benefit society are the models of choice. This relates to the less burdensome regulatory and legal requirements for these, compared to other company structures, and links to the wider benefits that the projects are designed to provide. The key attributes for IPS models are described and what this means for launching share issues discussed.

Key issues to consider

The process of launching a share issue is well understood and example share offers are readily available for energy and other project areas (Annex 3). It should include an offer document that contains sufficient information for potential investors to make a proper financial assessment and financial information about the project and projected returns on investment. This will require an organisation to make some key decisions and communicate them within the share offer. These are discussed in detail within section 3.2 and include: legal structures; the level of risk; the policy on interest payments; and the position on tax. There are also wider considerations that help shape the organisation, such as the type of share capital; what the policies are for membership; what level of democracy and decision making will be adopted. All of these issues are defined by the legal rules adopted by the organisation and many projects have used pre-approved 'model rules' to define their structure.

Shares vs other finance

There are four main types of capital available to an organisation to enable it to meet its goal, including grants, reserves, debt and equity. These have different implications for an organisation, its work, cashflow and the type of benefits that it can offer. The pros and cons of each are discussed in relation to community-based projects and in relation to the types of capital that have been used within the case studies.

Generally it is recognised that a combination of all types of finance is important for developing and delivering a project and getting the mix right is an important part of the capitalisation plan. This is discussed in terms of the gearing ratio between debt (loans & other borrowing) to equity (share capital, grants and reserves). It is apparent a gearing ratio of less than one is essential in order to be able to secure debt finance on favourable terms. This is discussed in terms of the funding packages used within the case studies. These show that in most instances the community-renewable projects are highly leveraged using grants and share equity for around 60% to 80% of the total capital costs. However, one of the latest community-owned renewables projects in Scotland has secured debt capital at nearly a 50:50 split.

Share capital can play an important role in helping an organisation lever debt and other funding, including grants. It is therefore a useful way for new community based organisations to develop successful funding packages. However, it also offers a much wider range of benefits that can make community investment projects more attractive than alternative financing mechanisms. This can include the nature of the capital itself and what it means for the organisation's management.

- Unlike loans, it is permanent capital, which is not redeemable by a fixed date; and the interest on it can be limited and subject to the organisation's ability to pay.
- It enables an organisation to concentrate on delivering benefits to the community, rather than high profits, and it can buy time to develop a long term business strategy.
- It can harness the collective investment power of whole communities, often using small sums to raise large amounts of capital.
- The share ownership model runs through the philosophy of the organisation, its management and delivery, enabling shareholders to have an active role in decision-making processes, resulting in high levels of participation and democracy.
- Greater commitment and support to make a project succeed also occurs as the investors are also the benefactors.

Whilst IPS structures have become common in many community-owned renewable projects, their use in Scotland is low. Here there is a preference for trading companies linked to community development trusts that have charitable status. This in part appears to link to historical developments, but it has also enabled them to develop models that do not rely on individual shareholders, helping to ensure that all of the benefits of a project, including income generation, go back into a community as a whole, rather than to individuals.

Use of Income

The use of community funds

An analysis of the case studies and literature shows that revenue-generating community-owned renewables support a wide range of different purposes and these tend to be very project specific. The uses of income appear to fall within seven different areas, although there are crossovers between them and many projects are meeting multiple local needs, the findings are summarised in table 10, but include the following categories:

- Servicing the capital finance linked to a scheme.
- Building sink funds to replace equipment and ensure long-term sustainability.
- Creating revolving funds to support further projects.
- Distribution of dividends to shareholders.
- Providing funds for the benefit of local communities.
- Providing an income stream for wider socio-economic drivers within the area.
- Covering operation costs and/or creating local employment.

One important distinction that does emerge is the apparent difference between those projects that have individual investors and those which are more community focussed. In the first, the financial benefits go back to the individual shareholders, who may or may not live in the community where the project is based. In the latter, the financial benefits go to the community as a whole to support a wide range of environmental, social and economic goals and often link to the long term sustainability of a scheme and its community.

Revolving funds

The final two sections of the report consider the use and structure of revolving funds. The evidence shows that this form of financial mechanism has been widely used by local authorities and the public sector, including projects that specifically focus on energy, climate and sustainability objectives. This has included projects on their own estates as well as

initiatives aimed at the domestic sector, encouraging both energy efficiency and renewable energy installations.

The principle of a revolving fund is simple, they provide a mechanism to fund the high upfront costs of a project which in the long term will provide financial savings, or in the case of renewables, generate an income, and this money is used to pay back the original loan on an agreed timescale and terms. By ring-fencing this capital, it is possible to create an ongoing revolving pot of money, that can make the overall total investment increase significantly. Such mechanisms can therefore create a long term commitment to a particular goal and they have been shown to be three times more effective than grant based schemes. A useful guide to the development of revolving funds provided by CLASP is discussed, alongside seven examples of local authorities that are using this financial mechanism.

Examples of the use of revolving funds to support community renewables also exist. The largest appears to be run by CO2Sense in Yorkshire which is based on a £4.6 million pot. It provides loans of up to £200,000 at a commercial rate of interest, or can offer more when a share of future revenue is agreed. It is designed to support grid connected renewables and this includes community-based schemes. There are also a large number of community level revolving funds developing, with as many as 16 of the projects funded by the Big Green Challenge and the Low Carbon Communities Challenge, indicating their intention to use this mechanism. These have been made possible through the funding they have received and as a result of the introduction of FiTs. Their use is linked to a desire by communities to find long term, independent, sources of sustainable income to meet their wider needs and regeneration goals.

It has not been possible to demonstrate what level of funding is required to make a revolving pot work, but the variables that need to be considered are described. Essentially these relate to issues such as the initial size of the fund; the conditions placed on the loans made; and the management cost to administer it. It would be relatively straightforward to model the conditions needed to make a fund work successfully and there are also clear opportunities to speak to those projects that are developing such funds and the local authorities that have used them for several years.

Conclusions

Section five contains a detail summary of each section of this report and provides a list of key findings, which are reproduced in full, below.

It is clear from this research that community renewable energy projects can bring a wide range of benefits to those communities that develop them, whilst supporting the delivery of national, regional and local targets for energy and climate change. In most instances, projects that are led and owned by the communities in which they are placed will deliver the biggest range of benefits. And these benefits seem to increase for those revenue-generating projects that are owned by the community as a whole, rather than individual shareholders.

It is clear that there is a strong desire from communities to take action, as demonstrated by the vast array of projects that are already up and running. This is also supported by several national surveys that show peoples' support for renewable energy projects and often show a willingness to be involved with them.

One of the central themes that emerges within this report is the great range of diversity shown by community renewable projects. This includes, amongst others, the technologies chosen, the scale of implementation, the reason for development, the actors involved, the model of ownership and the benefits that they bring. In some respects this makes it difficult to say clearly this is what works and why. The main implication though, is that it cannot be assumed that what successfully works in one community, will work in another. Instead communities need to be supported and allowed the space to develop their own response to their own needs or reason to act. This will require flexible approaches to supporting and enabling community-owned renewables to develop and this may require several different types of support package.

Key Findings from the Evidence

- Community-owned renewables can meet local needs and wider energy, climate and sustainability goals and they should be encouraged.
- Community-led renewables and more commercial approaches can both bring a wide range of benefits, which vary greatly from project to project. However, in most instances the level of local benefit appears to increase in those schemes that are led by and/or owned by, the local community.
- There is no one right approach or model for community-owned renewables. The evidence provides a wide range of examples and a number of lessons for encouraging success. This includes the provision of funding and support to help overcome capacity issues, but most importantly enabling communities to find the most appropriate approach for their local circumstances.
- Communities based on geography tend to choose the most appropriate technology and scale to meet their local needs, whereas, 'communities of interest' appear to be linked to larger, more commercial scale projects and technologies, most notably wind. There is space for both approaches as a community's interest and willingness to engage with renewables will vary considerably from location to location.
- The introduction of FiTs and the RHI may change the way in which communities choose and scale technologies and they may also result in more commercial companies seeking to establish community scale renewable projects. The FiTs may also have a wider impact on the development of community renewables, by either making them more economically attractive or by encouraging people or landowners go it alone.
- Generally the acceptance of, and interest in, renewable energy will be higher in rural areas.
- Community-owned renewables will be attractive to many because of the socio-economic benefits they can bring, giving revenue generating schemes an important role in helping to create sustainable rural communities. It may also be easier to secure grant funding for rural projects, although poverty and deprivation may also mean that share based schemes may struggle to raise sufficient capital
- In terms of Community Power Cornwall (CPC), the evidence shows that the development of this organisation could play an important role in helping to create more locally based community renewable projects. However, consideration should be given to ensuring a flexible approach that enables communities to develop a model and approach that is suitable for their own needs. It should also take account of some of the issues relating to the rural nature of Cornwall.

Key Findings for Growth and Replication

- It is important to enable communities to develop and deliver their own solutions and to learn from each other.
- This should be supported through communication, sharing experience, expertise and knowledge.
- It should not be assumed that a successful approach or model in one community will work within another.

- The proposed CPC structure should in some respects be able to effectively facilitate the sharing of experience and knowledge to enable other projects to replicate their approach. However, care will be needed in making this process flexible.

Key Findings on Share Based Finance

- There are many ways to raise capital, which in order of preference includes grants, equity and then debt, although a mix is generally required.
- Getting a good gearing ratio between debt and equity is an important factor in the success of projects raising capital and most projects appear to secure around two thirds of their capital from grants and equity and the rest from debt finance, although some of the more recent Scottish examples are nearer 50%.
- Projects raising capital through shares are becoming more common and this type of equity can bring a wide range of benefits, including: financial advantages; a way to engage a community and gain support; and the opportunity to create democratic organisations with high levels of participation and control that can help ensure benefits for the community.
- The right legal structure is essential and the evidence shows that IPS Co-operatives or Bencoms are the model of choice for community investment approaches. Of the examples within energy projects, co-operatives tend to provide financial benefits back to the individual investors, whereas Bencoms tend to deliver wider social returns for the community as a whole.
- As the approach in Scotland shows, there are other models that can allow community-ownership, without the need for individual share equity.
- Whilst recognising that things may have since developed, the underlying principals of CPC should be able to deliver a range of benefits to those that invest. Consideration will need to be given to raising capital within Cornwall, and how to ensure benefits for both investors and the local communities where a project is based. This can easily be designed into the model that is finally developed.

Key Findings on Income

- Revenue generation community-owned renewables include those that provide benefits for individuals and those that provide benefits to communities. These relate back to the model adopted and the purpose of the project.
- Schemes designed around communities provide a wide range of social, economic and environmental benefits, which are possible because of the independent sustainable income stream that community renewables can provide.
- The use of revolving funds is widespread and can enable long term financial and environmental savings, at a much greater level than grants can achieve. Providing the money is ring-fenced and non-diminishing they can also be sustainable in the long term.
- Using revolving funds to support community renewables is growing rapidly and evidence for their design and structure should soon be available.
- In terms of CPC, the use of a revolving fund could clearly play an important, if not vital, role in enabling the effective capitalisation of small scale renewable projects. However, this is one area where there seems to be differing understandings between those involved or aware of the project, and it would make sense to clarify and further research the use of a revolving fund in Cornwall. It could clearly be an important mechanism to enabling projects to happen.

Introduction

This research provides a summary of the literature relating to community renewable energy projects. It is drawn from evidence across academia, the sustainable energy sector and wider reports in the environmental, social and community development sectors. It focuses on the practical examples of community-owned renewables, within in the UK, to consider the approaches taken and the benefits gained.

A complete list of the literature reviewed is provided in Annex 1. It includes studies that have examined community renewables in their broadest sense and those that have considered different aspects of ownership. Many projects have been based around community involvement in wind, so much of the accompanying research and evidence relates to this, although many of the lessons learnt are generic and will apply to other technologies. This report is by no means comprehensive and contains no primary research, but it does provide a good overview of the range of projects and approaches being taken. Recently there has been a dramatic increase in the development of community ownership within renewable energy, helped in part by initiatives such as NESTA's Big Green Challenge, DECC's Low Carbon Communities Challenge (LCCC) and the consistent support and funding available in Scotland. Along with specific policy developments linked to better information, planning and funding, and a strong desire by communities to act, they will result in increasing amounts of evidence coming forward in the near future.

This report is structured around the specific questions in the brief provided by Community Energy Plus. It provides information across four areas:

- 1. Evidence for community-owned renewable projects, their results, lessons and implications, including:**
 - 1.1 What evidence is used to justify the need of community-owned renewable energy projects?
 - 1.2 What are the advantages and disadvantages as compared to more commercially focused proposals?
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 - 1.4 What scale of project and technology has been most successful?
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- 3. The models used by community groups to raise capital, particularly relating to share based approaches:**
 - 3.1 What evidence exists for how community share issues work?
 - 3.2 What are the key issues that local groups have considered?
 - 3.3 Why have they opted for a share issue rather than other financing options?
- 4 How projects have used the income they generate. Specifically:**
 - 4.1 How are funds from community-owned renewable energy projects used?
 - 4.2 What research has been done into the success of proposals to create revolving funds to support further projects?
 - 4.3 What level of funding is required to make a revolving pot work?

To help answer these questions, Annex 2 contains twelve case studies, drawn from across the literature and summarised in table 1. They cover a range of different approaches to community ownership, different scales and choices of technology and different models of ownership and income generation.

Project	Summary
Baywind	Co-operative large scale wind funded through individual share ownership that provides dividends to members and income into a local fund.
Bro Dyfi	Co-operative small scale wind funded through grants and a share ownership, returning dividends and providing local benefits.
Fens Co-operative	Co-operative large scale wind funded through individual share ownership that provides dividends to members and income into a local fund.
Fintry Renewable Energy Enterprise (FREE)	Community owned turbine on commercial wind farm, generating income to pay off capital and support a wide range of local carbon activity.
Gamblesby	Village Hall renovation using GSHP and small scale wind.
Gigha Community Wind	Community owned wind project that provides an income stream towards the socio-economic regeneration of the island.
Isle of Eigg	Off-grid community, meeting own energy requirements with a wide range of community-owned renewable technologies.
Kielder Biomass Heating	A community-owned and run biomass district heating scheme.
Knoydart Hydro	Off-grid community-owned hydro power meeting their electricity needs.
The Green Valleys	Multiply community-owned micro-hydro projects to support carbon reduction, provide income and benefits communities in Brecon Beacons
Torrs Hydro	Low head hydro scheme using grants and shares to generate income for community regeneration projects in the area of the scheme.
West Oxford Community Renewables	Using a range of community renewables to create an income for wider low carbon activity including support for further renewables.

Table 1: Community-owned Renewable Energy Case Studies

Background

Interest, support and development of community based renewable energy is well documented within the literature. Much of it dates back to the 1970s and is linked to interest in self-sufficiency, local decision making and collective small-scale action; alongside a wider desire for more community engagement and empowerment. As such the development of community renewables has tended to sit within 'grassroot niches' outside of mainstream energy policy with little support from public resources and a very limited impact on the system of energy supply within the UK (Walker 2007).

However, since the late 1990s, the potential benefits of more distributed energy generation, that involves local people and communities, gathered momentum and support. This includes bottom up approaches from communities themselves who have just got on and taken action, alongside top down initiatives from Government, its various agencies and commercial developers. Policy developments have included support, funding and awareness-raising, and key national policy documents have highlighted the benefits and potential that community renewables can bring. Sitting between these two approaches a wide range of other actors such as NGOs, local authorities, charities and other organisations with an interest in renewables, energy and community development more generally, have sought to promote and enable community renewables. The result is an overall alignment of these actors' different interests and approaches (Walker 2008).

One inevitable result of all this diversity within community renewables is a variety of different interpretations about what a community renewable energy project is, that warrants brief

consideration. Houghton (2010) suggests that communities can be considered to be self-defining groups of individuals or organisations brought together by geography, identity or interest. As he and others have highlighted, in relation to community renewables many projects contain communities defined by geography although these can often also contain communities of interest and identity (CSE et al 2009). As might be expected, how people define or see community renewables, changes with each project, varying with technology, scale, location, social context and with the type and range of actors involved Walker (2008).

A useful way through all of these variables, provided by Walker & Devine-Wright (2008) is through a framework based around ‘process’ (how a project is developed and run, who’s involved, takes decisions, etc) and around ‘outcome’ (how benefits are distributed). Using this, they suggest community renewable projects are those in which the process and/or outcome are to some degree local and collective. Their research clearly shows that many of the renewable projects that contain the word ‘community’ are not necessarily community orientated or based. They also highlight that the range of diversity that exists has been important in allowing communities the flexibility to experiment and develop approaches most appropriate to local circumstances and contexts.

A final variable links to the nature of ownership itself and again there are a wide range of different forms, models and interpretations in use within community renewables. A simple overview of some of the different organisational structures that have been adopted are summarised by Walker (2008), table 2, although there are often crossovers between them. Different sectors tend to have different views on the type and nature of structure that is most appropriate and there can be conflicting opinions about the different models available. It is easy to become bogged down within these debates and the finer detail of the benefits and limitations of different structures. However, it is important to recognise that there is no right or wrong approach and there is general agreement around the benefits that ownership can bring. The model chosen will largely depend on the underlying purpose and objectives of the organisation and/or the specific project (CS 2009a). In terms of this introduction, it is highlighted as it adds a further variable and level of diversity that should be borne in mind, when considering community-owned renewables; it is discussed in detail in section three.

Structure	Summary
Co-operatives	People in local community or further afield become members of the co-operative and buy shares to finance the project, e.g. Baywind, Torrs Hydro.
Community Charities	Usually an association with charitable status that provides/runs facilities for the local community. These can also have a trading arm to provide local services, such as community interest companies e.g. Gamblesby, Kielder.
Development Trusts	Widely used to represent community’s interests in revenue generating activity and in some cases includes models of local ownership. They are widely used in Scotland e.g. FREE, Eigg, and Gigha.

Table 2: Examples of Community Renewable Ownership Models
Source: After Walker (2008)

1. Evidence from Existing Community Renewables Projects

1.1 What Evidence is used to justify the need of Community-owned Renewable Energy Projects?

There is a wide range of evidence, and great deal of diversity, in the multitude of approaches taken in community-owned renewables. The justification of need therefore tends to vary with the actors involved and the reasons behind the development of particular projects. Both these viewpoints are considered, although there are inevitably many crossovers and links between them.

1.1.1 Actor Perspectives

Communities

The fact that many communities have just got on with it and made local renewable energy projects happen is a clear indication of a need or desire for community-owned approaches. The case studies in Annex 2 provide 12 examples and there are many more available from those organisations with an interest in renewable energy and community development. They include projects in which the community actively drives the development of a scheme, taking ownership over this process itself and/or the technology installed, through to much more passive approaches, where involvement is limited, but a benefit is gained. Examples of the scale of activity taken are evident from the reports, research and applications for funding and support, for example:

- Walker (2007) highlights that a database of over 500 projects was produced to support the large ESRC project he coordinated.
- CSE (2009) study into best practice community action on climate change identified 287 initiatives across the UK, of which they suggest 106 were genuinely led by the community.
- CSE et al (2009) toolkit provides case studies of 11 projects linked to commercial wind developments.
- Community Energy Scotland's (2009) Community Renewables Toolkit includes 19 case studies, their website contains many more.
- Walker (2007: 4.2) reports that "the various capital funding initiatives have all been oversubscribed and have demonstrably tapped into the imagination, skills and enthusiasm of many local people, groups and organisations".
- Houghton (2010) reports that the Big Green Challenge received over 355 applications.
- DECC (2010a) suggests over 300 communities expressed their interest in the LCCC.

As well as these examples, there is further evidence of a desire for communities to act through the emergence and expansion of wider initiatives. This includes national support programmes such as Green Communities which has attracted over 4,000 members (CSE 2010) and new grass route organisations have sprung up, such as the Low Carbon Community Network which provides networking for the "rapidly growing movement of climate change groups that are forming at a local and community level" (LCCN 2010). They have a membership of over 80 organisations as well as individuals. There has also been an emergence of a large number of Transitions Towns and organisations such as Carbon Rationing Action Groups (Houghton 2009).

Government

Walker (2007) suggests that, for Government, the motivation to support community renewables was initially a means to an end, providing possible ways to: overcome planning objections for projects; promote technologies without falling foul of EU state aid rules; and support wider objectives such as rural regeneration and climate communications. Whilst this certainly seems to be the case in the early development of programmes and policy, there has been a clear shift in recent years, resulting in an alignment of Government policy with the wider sectors interested in community renewables (Walker 2008). This is evident in the language and emphasis within key policy documents over the last decade, table 3. They have fairly consistently identified the opportunities that community approaches offer in terms of communication, encouraging individuals to act and the development of decentralised generation. However, the rhetoric has grown, as Government have recognised that they will not be able to meet their objectives for energy and climate policy without the greater involvement of individuals and communities. This includes a need for better top-down working and a call to communities to engage, develop and support local renewable energy developments.

Policy	Links
Energy White Paper 2003	Recognised that increasing deployment of renewables will require local support and the engagement of local communities. It states that “We see a clear benefit in local communities becoming producers, as well as consumers, of energy, establishing and benefiting from the local ownership of some forms of generation” (DTI 2003: 53).
Energy Review 2006	This built on the 2003 white paper but shifted the narrative to suggest that local and community action would be critical to enable the Government to reach its targets. Again this was seen as important in relation to raising awareness, enabling distributed generation and encouraging energy efficiency.
Microgeneration Strategy 2006	Designed “to create conditions under which microgeneration is a realistic alternative or supplementary energy generation source” for householders, communities and business (DTI 2006: 4). It committed to cut the known barriers that prevent take up. In relation to community installations it saw them as a way to reduce emissions and offer potential benefits to engage the public and familiarise residents.
Energy White Paper 2007	Broadened policy towards security, low carbon and affordability, within a competitive market. Saw role for communities in creating greater awareness of energy and carbon emissions, driving social change and encouraging greater energy efficiency; and possibilities for increasing amounts of decentralised low carbon system at household and community scales (HMG 2007).
Low Carbon Transition Plan 2009 and Renewable Energy Strategy 2009	<ul style="list-style-type: none"> • The transition plan sets out the wide range of objectives, programmes and initiatives to enable the UK to move towards a low carbon economy. It is the national strategy to 2020 and aims to deliver emission cuts of 18% on 2008 levels. It states that “Helping communities to take action is an integral part of the Government’s Strategy” (HMG 2009a: 92). • The renewable strategy spells out how any transformation in energy supply will not only require action from Government, but “cannot be done without, individuals, business and communities also playing a role”, this could be via these groups taking a lead “through adopting their own renewable energy technologies, supporting local renewable energy projects and inspiring others through innovative new ideas” (HMG 2009b:152). This is covered in relation to sharing benefits, encouraging adoption, leading by example and monitoring awareness. For communities it discusses the need to share benefits and calls upon communities to engage with renewables. It equally calls on developers to engage communities and share benefits of deployment. It also sets out ways to encourage adoption and take up of renewables through greater financial support, improved information, training and awareness raising which will include a new ‘how to’ guide for communities to help set up local projects (due in May).

Table 3: Policy and Community Renewables

The above policies have been supported through an extensive raft of energy and climate legislation and a range of new initiatives and proposals such as the FiT, Pay as you Save, CESP, RHI and new planning/guidance for renewables and local authorities. A good overview of some of the wider strategies is provided by Dodd (2008). There has also been an emergence of a raft of new initiatives to fund and support community approaches including the Big Green Challenge, the LCCC and recent Research Council's funding calls.

Other organisations

There are a wide range of other organisations with a role or interest in community-owned renewables. Walker (2007) suggests that many, and in particular, NGOs place a stronger emphasis on supporting the principles of collaboration, empowerment, learning and local ownership. Much of this is evident from the raft of projects and case studies that have emerged.

Examples include those with specific aims to either support communities or create low carbon futures, such as CEP and the various other energy agencies around the UK, plus organisations like Highlands and Islands Enterprise (H&IE) and Community Energy Scotland (CES) that actively support and fund community groups to develop sustainable energy projects. Such organisations often facilitate knowledge sharing between communities and support the development of renewable energy projects. Also, there are organisations that provide wider support, networking and information sharing such as, Green Communities, the Low Carbon Communities Network and Transition Towns.

Some organisations have seen communities' essentially as a route to market. This includes some examples of Local Authority projects that work with communities to develop or deliver projects as part of their own targets such as Local Agenda 21, the Home Energy Conservation Act and more recently through Sustainable Community Strategies and Local Area Agreements. Some have also responded to requests from communities for help and/or support (DCLG 2006, HCA 2010). Commercial wind developers have also engaged with and worked with communities in a variety of ways to support the development process of their proposed wind farm (CSE & Garrad Hassan 2005; CSE et al 2009).

There is also a broader range of development organisations that are interested in promoting and supporting community ownership and social enterprise more generally, such as Co-operativesUK, the Development Trust Association and new initiatives such as Community Shares. Some development organisations also have a specific energy remit, the most obvious being the Energy4All model. This emerged out of the Baywind Wind Energy Co-operative in response to the ongoing enquiries they received from those wishing to replicate this model. It seeks to expand the number of renewable energy co-operatives in the UK and is owned by the co-operatives it assists (seven to date). It enables individuals to take a stake in a renewable energy scheme by both developing sites and creating co-operatives to own them, or by buying a stake in a commercial development. Since it started, over £13 million has been raised (Energy4All 2010). Another recent approach for hydro power is Water Power Enterprises, who are a social enterprise that believe that community ownership and benefit go hand in hand with renewable energy. Their approach aims to overcome both the financial and capacity barriers associated with small scale hydro, to enable schemes to develop. They have helped establish two schemes and are supporting four more to date.

Finally, there are organisations such as think tanks and commissions which take broader overviews on the issues. A good recent example is the Commission of Inquiry into the Future of Civil Society that has considered the current and possible future roles of civil society associations in relation to a range of themes, including ‘a rapid and just transition to a low carbon economy’. They suggested that neither the state nor market will be adequate to meet the scale of challenges posed by climate change or resource scarcity and therefore civil society will need to play a central role in creating a fair and effective low carbon economy: “the case for local energy generation is incontrovertible, both for the sake of efficiency and for developing greater social resilience to climate change” (Carnegie UK Trust 2010:78). They see increasing locally owned assets and community engagement as central to enabling deployment and increasing understanding. They say that associations such as co-ops, social enterprises and community groups will enable ownership and control of assets, whilst building the capacity of local community groups.

1.1.2 Theme Perspective

The other way to consider the justification of need for community-owned renewables is to consider the reasons why projects have developed. Reading across the case studies and examples that exist within the literature, projects appear to fall under four broad categories (with some crossover between them).

Meeting a local need

Walker (2007) highlights that most of the projects considered in his study fell under the category of meeting a practical local need. Many of the case studies available through the [CES website](#) also indicate a high number of projects in this area. As would be expected these needs vary considerably between projects. Examples from literature and the case studies include:

- Supplying affordable heat and/or power to a specific building (e.g. Gamblesby) or a number of buildings/or whole community (e.g. Isle of Eigg, Knoydart).
- Supporting wider regeneration, economic goals or local industries (e.g. Kielder, Torrs Hydro).
- Other projects have been driven by a commitment or belief in approaches to project development, education and demonstration (e.g. Bro Dyfi).

Taking advantage of an opportunity

There are examples of projects that develop as a result of a local opportunity, most often associated with commercial wind developments. A really proactive example of this highlighted by Adams (2008) is at Fintry, where the community knew a commercial wind development was coming and instead of objecting to it, asked the developer to build an additional turbine which the community owns, generating an income to support their wider objectives. Some aspects of the Energy4All model share similarities with this where individual shareholders have bought shares within a commercial development or a turbine/s within it, with the benefits going back to the individuals through annual dividends (CSE and Garrad Hassan 2005).

A more passive response to commercial wind that still takes advantage of the opportunity a development can bring is the process of securing a financial income for the local community via the creation of a local trust fund. Although the community does not have ownership or control of the technology, it often has some ownership and involvement in the local fund,

either through helping to set its priorities or being able to apply to it (TLT 2007). Sometimes this funding can be linked to meeting a local need, e.g. the Hadyard wind farm in Ayrshire provided funding directly to the local energy agency to reduce fuel poverty in the area (Ashden Awards 2008); whilst also providing £120,000 year to the Hadyard Hill Community Benefit Fund Ltd, an independent, community-led organisation that distributes funds to the three nearby communities for a wide range of projects (Girvan 2010). Although developers are under no legal obligation to provide such funds it is increasingly common and many local funds have been set up to benefit communities (CES 2009). Within the case studies, Baywind, Fens Co-op and Bro Dyfi all put money into a local fund.

Addressing wider concerns

There are many examples of projects that fall under this category, which Adams (2008) describes in terms of a 'motivating' dimension such as reducing carbon emissions, considering peak oil and projects that address wider sustainability or local issues such as social or economic regeneration. Examples include many of the case studies provided by Green Communities (2010), initiatives like Transition Towns and the projects examined by CSE (2009). Within the case studies, FREE, Isle of Eigg, The Green Valleys and Low Carbon West Oxford are obvious examples of communities wishing to reduce their impact on the climate, although many others have this as one of their aims. Many of the projects that are developed to address a particular concern are often not related to renewable energy or community ownership, but as Adams (2008) and Houghton (2009) have highlighted, many projects evolved from their initial reason for action into a wider range of activity, such as renewable energy. This sort of growth is described in more detail under 2.1 below.

A means to an end

As already discussed to some degree, some of the actors involved in community-owned renewable energy projects have taken a community approach to enable them to meet their own objectives. This can include Government and local authorities who want to meet particular targets for carbon reductions and renewable energy generation set out in the Low Carbon Transition Plan or Local Area Agreement targets such as NI 186. It can also include Regional Development Agencies and Local Development Companies who have targets for supporting the local economy and job creation, which community renewables can assist with. It clearly also includes large scale wind developers who can potentially ease the planning process by supporting communities and the large energy companies with commitments under CERT and CSEP. Any of these approaches can involve communities in increasing renewable energy capacity and can sometimes include a degree of local ownership.

1.1.3 A Wider Debate

A final consideration in terms of the need for community renewables, sits within the wider debate on the future of the UK energy system as a whole and what this could mean for people, technologies, system design, scale, etc (for example: Mitchell 2009; Scare & MacKerron 2009; Ofgem 2009; Helm 2007; Patterson 2007). This debate has come to the fore in recent years with growing concerns over climate change and worries about energy security. This wider debate is not explored in any detail, but is fundamental to this first question as there are many schools of thought about how our future energy systems should develop. Key issues relate to what sort of generation and distribution system we want, with the incumbents clearly preferring a centralised approach with large scale new nuclear and CCS coal/gas, keeping within a liberalised competitive market approach. Others argue for a

more decentralised, smart grid approach with increasing amounts of renewables, and more intervention from the state that turns passive consumers into more engaged 'energy citizens' Devine-Wright (2007). There is also debate around whether community approaches could lead to sub optimal resource development as the most appropriate site may not be developed by a community and this could have implications for other local sites, in terms of local acceptance, gaining planning and network capacity.

There is little agreement around all of these issues and currently all options seem to be being pursued within national policy. Giving the urgency of climate change and the number of actors and lobbies involved, this may be the only way forward. However, the choices made over the next few years could have long term implications for community approaches as we could easily get locked into a large centralised system and a new market structure that does not favour smaller scale renewables or even renewables. As Stirling (2009) says, sustainable energy is a challenge of choice, and finding the future pathway is riddled with complexities, contradictions, confusion and uncertainties.

1.2 What are the Advantages and Disadvantages as Compared to more Commercially Focussed Proposals?

The previous section provides some obvious examples of the sort of advantages that community-owned renewables can offer, particularly in terms of meeting a local need or enabling people to act on their beliefs. In addition, the literature contains many more examples of the benefits that such projects can bring. Many of these are broad and apply with or without ownership, although ownership does appear to bring a wider range of local benefits. In order to make a comparison to commercial approaches, the opportunities that they can offer to communities are considered first, particularly in relation to wind projects, although the benefits are fairly generic and could apply to other technologies and approaches.

A useful study that considers the community benefits that commercial wind developments can bring was produced by CSE and Garrad Hansen (2005) and updated by CSE et al (2009); these benefits are highlighted in table 4 along with examples from the case studies CSE provide. It can be seen that there are potentially a wide range of opportunities offered though commercial development including economic, environmental and social benefits. It is also clear that many developments bring a combination of these benefits as part of their development. However, as CSE et al (2009) highlight, some of the recipients, such as landowners or contractors, may not necessarily be considered as part of 'the community' by other local people. Also what constitutes a 'benefit' will vary between local people.

As highlighted in 1.1.2 above, of all these potential benefits, by far the most common approach currently is the provision of funds into a local pot for those communities closest to a development (TLT 2007; CSE et al 2009). Community Energy Scotland (2009) suggests that these 'community benefit' payments can be linked to a payment per MW, they suggest £2,000 per MW, although it is clear that many schemes to date have paid much less than this and some have also taken a route of paying a flat fixed income per year (CSE et al 2005).

Potential Benefits	Case Study Example
The use of locally manufactured content	None highlighted
The use of local contractors during construction	None highlighted
Buying shares or other investment opportunity for local residents and businesses	Depping St Nicholas; Earlsburn (this is the FREE wind farm)
Potential involvement in the development process by local landowners, groups or individuals	Altahullion; Burton Wold
Land rental to the local landowner(s)	None highlighted, but common
Local community facility improvements	Burton Wold
Lump sum or regular payments into a fund for the benefit of local residents	Argyll & Bute Council; Bears Down Wind Farm; Burton Wold; Cefn Croes; Depping St Nicholas; Novar; Windy Standard
Employment of local people in the operation and maintenance of the wind farm	Beinn an Turic
Improvements to local environment and wildlife habitats	Beinn an Turic; Cefn Croes
Visitor centres and tourist facilities	Altahullion; Burton Wold
Education visits and school support	Altahullion ; Argyll & Bute Council; Bears Down Wind Farm; Burton Wold; Depping St Nicholas
Sponsorship of local groups and teams	Bears Down Wind Farm

Table 4: Possible Community Benefits from Commercial Wind Schemes

Source: After CSE et al (2009:7)

In comparing the UK approach to other countries (Figure 1), CSE and Garrad Hansen (2005) suggest that other countries tend to provide a greater variety of local benefits through tax payments, jobs and other economic benefits from manufacturing. They also highlight opportunities for local ownership, which is picked up in the DTI Global Mission Report (2004) who, in looking at co-operative approaches in Denmark and Sweden, found the opportunities for democratic control, community engagement and economic participation ensures a wider distribution of benefits.

Comparison of 'Typical' Community Benefits from Wind Power in Different Countries

Benefit / Feature	UK	Denmark	Germany	Ireland	Spain
Community fund contribution	Yes	No	No	No	No
Community compensation	No	No	Yes	No	No
Pre-approval contribution	No	No	No	No	Yes
Local taxes	No	Yes	Yes	Yes	Yes
Jobs	No	Yes	Yes	No	Yes
Individual investments	No	Yes	Yes	No	No
Co-operative investments	No	Yes	No	No	No

Figure 1:
Comparison of
Typical Community
Benefits

Source: CSE and
Garrad Hassan
(2005: 6)

1.2.1 Benefits and Advantages of Community Based Approaches

A summary of some of the potential benefits community renewables can bring are provided below, along with examples from the case studies. Each of the potential benefits is then considered in relation to a commercial approach to identify where the advantage may lie. The diverse nature of community renewables projects means not all of these benefits will apply to all projects, although some projects will experience several of the benefits simultaneously.

Local income generation and regeneration

Walker (2008) suggests that local projects with a degree of ownership can provide an income stream through returns on investment, the sales of electricity and/or heat, and/or the creation of employment. He suggests that within the UK wind projects have been most effective at providing returns (citing Boliger 2001 & Stamford 2004); and states that biomass energy projects can generate income from the sale of energy and by providing a market for forestry and agriculture fuel sources (citing Madlener 2007). Hain et al (2005) also highlights that community-owned renewables offer a long-term stable income source that can ensure financial benefits for social regeneration. Similar findings are backed up by other studies and within many case studies, for example:

- FREE use the income from their community-owned turbine to fund a wide range of community initiatives, whilst also allowing them to service the capital costs of the turbine.
- The Isle of Eigg has kept the money from the sale of electricity within their local economy and has trained local people to operate and maintain the system. Prices are set at a level that ensures the long-term sustainability of their energy network.
- Torrs Hydro uses its income to support local regeneration projects within the local area, even though much of their funding came from individual share holders.
- Kielder biomass has helped support the regeneration of their community and the local forestry industry.

Baywind and the other Energy4All co-operatives can also be considered here, although their approach is slightly different. In the case of Baywind, they have provided dividends to their members in the range of 5.6% to 7.2% gross per annum (taken to 7% to 9% with the Government's Enterprise Investment Scheme); and they have provided 0.5% of the annual cash income from Harlock Hill to a local energy fund. However, most of the financial benefit from their approach goes to the individual investors rather than the local community, as TLT (2007) point out, in the case of Baywind around 60% of their investors live outside of Cumbria. So these approaches may not bring the same more obvious local benefits that some of the other projects do.

In comparison to commercial projects, the advantages offered by community-led initiatives are likely to be very project specific. In general terms, those communities with a strong focus on income generation and wider regeneration, particularly the examples in Scotland (FREE, Eigg and Gigha), are able to ensure a wide range of outcomes from their schemes. In the case of wind, both Community Energy Scotland (2009) and Warren & McFadyen (2010) suggest that community-owned projects provide a higher rate of return than commercial schemes provide through benefit payments. As such, there is an advantage in communities developing their own wind schemes, rather than just receiving an income from one. However, even though commercial payments may be lower, they can still be significant amounts of money, and as Community Energy Scotland (2009) highlight, they come with much less risk and much less work by the community. This potential advantage could therefore be very community specific.

Local approval and planning permission

It is widely recognised and evident from the communities that have been examined in detail, that the greater involvement of local people directly within a project increases acceptance and support for it (e.g. Walker & Devine-Wright 2008, Loring 2007, CSE et al 2009). Warren & McFadyen (2010) also suggest that community-led schemes tend to be 'owned' in both a

legal and psychological sense by local people and this can increase acceptance and remove planning objections. In comparing commercial and community wind developments in Scotland, they found that “public attitudes are more positive towards wind farm developments in areas where local communities have direct involvement in them than in areas where they do not” Warren & McFadyen (2010:211). This is also one of the reported benefits that Government have flagged in several of their key policy documents and is certainly recognised by those studies that have looked at commercial wind developers’ motivations and actions (CSE and Garrad Hansen 2005; CSE et al 2009).

However, planning has been a major issue, particularly for onshore wind and many communities have been accused of NIMBYism. Many authors dismiss this oversimplification in looking at the reasons why onshore wind struggles and there appears to be some consensus that objections relate to a whole range of interacting, context and time sensitive factors (Warren & McFadyen 2010; Devine-Wright 2005; Eltham et al 2008). There is also evidence of a highly organised anti-wind lobby that have been effective at influencing local planning decisions (Toke 2010) and this can include large organisations like the Campaign for the Protection of Rural England (CPRE). A study cited by Eltham et al (2008:24) looking at 51 wind farm planning decisions suggests that “every application that had been objected to by the CPRE was declined planning permission”. The planning policy framework is improving and putting greater emphasis on the role of local authorities, such as the recent PPS1 Planning and Climate Change (DCLG 2007), policies within Strengthening Local Communities (DCLG 2009), the introduction of the Infrastructure Planning Committee for large scale applications and the most recent PPS consultation on Planning for a Low Carbon Future (DCLG 2010). The emergence of new initiatives such as ‘yes to wind’ that enable people to register their support for wind projects around the country may also help counter the approach of anti-wind groups.

It is clear that much of the negative feeling towards wind can be overcome through earlier and better engagement with the public and local communities; Eltham et al (2008: 31) cites several studies. However, it is also clear that increasing local benefits and creating opportunities for ownership is likely to be more effective and this is commonly observed in other European countries (Warren & McFadyen 2010). Whilst there are always exceptions, for example Walker (2008) cites Awel Aman Tawe community wind project which despite local support failed to get planning approval from the local council; the overall evidence within the literature and from projects like Gigha and FREE, is that community based approaches do offer an advantage for increasing local support and planning approval. It also seems likely that the benefits that local ownership could help bring to a community, may help to mobilise people within those communities that support wind and/renewable energy, which surveys consistently show exist (Eltham et al 2008, BWEA 2005, DECC 2009a).

Local control

Walker (2008) states that projects that are managed and controlled by the local community are able to determine the most appropriate scale of a development and even issues such as the location and siting of wind turbines. Local control is also often a central element in those projects that provide local power and/or heat or provide an income to enable a community to meeting other needs. The case studies show a range of approaches and complexities, including:

- Community wide approaches like Gigha and Isle of Eigg that have been able to address local needs and help shape their future prosperity.
- Schemes like FREE which have been able to assert some control over a commercial development to meet their wider aspirations.
- Small scale building-focussed projects like Gamblesby where the community controlled the whole process from the decision on which technologies were most suitable, and at what scale, to securing the funding and helping installed them.

For many projects, control links back to wider beliefs in the way that projects are delivered such as a desire to develop participatory, democratic and open processes – this is discussed in detail in section 3.3.3. Although the active engagement and consultation of local communities in the planning stages of commercial schemes can enable some control, it seems that community based projects are much more likely to enable higher levels of local control and decision making.

Lower energy costs and reliable supply

There is evidence to suggest that the provision of on-site heat and/or power is cheaper and more reliable than the alternatives, especially if the need for additional infrastructure is avoided (Walker 2008). He cites the example of projects linked to community buildings, particular in rural, off gas areas. This is also likely to be particularly true for off-grid communities and Highlands and Islands Enterprise suggest community renewables have helped to overcome high fuel costs, end of line supply disruption problems and reduced fuel poverty (Evans 2006). Examples within the case studies include Gamblesby who reduced their heating costs, whilst making their building more comfortable and useable; the Isle of Eigg who increased the reliability of their system (although the power costs more than the mainland grid – albeit at current prices); and Knoydart which shows both lower costs and increased reliability of supply.

Given that the economics and reliability of production are very site and technology specific there will be examples that show either a community approach or a commercial approach is more advantageous. It does appear the projects linked to a community building, or in more rural areas or off grid areas, may have the edge over commercial schemes. This may improve further with the introduction of FITs and there is a growing recognition that energy prices will increase within the UK (e.g. Ofgem 2009), further tipping the balance towards community schemes using renewable sources.

Ethical and environmental commitment

Walker (2008) highlights how many of those involved with community ownership are driven by their ethical and environmental beliefs. This is further supported by Adams (2008) who found climate and peak oil to be a principle motivation for many to act. Most of the case studies in Annex 2 have an element of ethical and environmental commitments, as would most of the projects funded under the Big Green Challenge or LCCC; this is clearly a strong driver in community action.

Beyond individual communities, these drivers can also be important for public and private sector bodies which have environmental and social responsibilities policies, obvious examples would be the Co-operative Society and Triodos Bank who use their investors' capital to support projects (Walker 2008). Organisations like Energy4All and Water Power

Enterprises clearly hold similar commitments, alongside their beliefs about the use of co-operative forms of ownership.

There are also many examples of commercial companies that have been started because of ethical and environmental commitments, perhaps in the renewable energy sector more than most. This includes small scale installers in Cornwall like Plug into the Sun and Independent Energy, right through to large commercial developers like Wind Prospect and Flack Renewables, who have both been active in individual community-based schemes and larger approaches such as Energy4All projects.

Community based approaches clearly enable those people with strong beliefs or desires to develop a local response to climate change, energy, peak oil, sustainability, etc. This commitment is likely to be easier to achieve through community approaches, as a key driver for most commercial schemes will be the level of return on investments, before other commitments.

Load management

Walker (2008) suggests that smaller scale renewables can help avoid issues for the electricity network that large scale renewables can create. He cites Hain et al (2005) and Strbac et al (2006) who suggest that smaller renewables, if they match low load requirements, can help avoid expensive network upgrades, create islands of security and increase voltage stability. The use of community or building integrated renewables could also see shifts in behaviour to increase load following, the Isle of Eigg traffic light system is one mechanism to get people to consider this, Keirstead (2007) has also found that some households that have installed PV have done this. The structure of the FiT payments may also encourage people to maximise the use of their output by load following, to maximise their economic return.

Although smaller scale renewables could clearly have a role in helping with load management it is not clear to what degree they offer an overall advantage over commercial developments. It seems likely that adding increasing amounts of decentralised electricity could make overall management of the network more complicated, but this is against a backdrop that recognises the need for major upgrades to the existing network and the political desire for a more interactive smarter grid (DECC 2009b, Conservative Party 2010).

Access to funding

It is clear from the case studies that charitable and other social structures have enabled all of the projects to secure funding towards both the capital and revenue costs associated with developing a community renewable scheme, improving the economics of the project. This can be further helped by supporting projects, as Community Energy Scotland does, through feasibility assessments and to the point where planning approval is secured. At this stage it becomes much easier to secure capital from other sources, including mainstream finance. Many projects have also been able to secure in-kind funding through volunteers involved within the project and professional organisations like local solicitors, which can add considerable value to a project.

In general terms, Brown (2008) highlights that raising sufficient capital is vital for any scheme and that in the case of social enterprises the preference is grants, equity finance from a community itself and finally debt finance from loans, etc. Often projects involve a mix of all three and getting the gearing between them is often crucial to success; this is explored in

detail in section 3.3.2. Looking at the case studies, it is clear that projects have used all three of these approaches, often in combination:

- Grants have come from Government schemes like Clear Skies, the Low Carbon Buildings Programme and their equivalent in Scotland; local authority funds; regional development agencies; Big Lottery; charitable trusts and foundations; companies and developers; social investment organisations; and most recently NESTA and DECC.
- Equity has been raised through individual share offers; Highlands & Islands Enterprise; and development trusts.
- Debt has been raised through developers; banks like Co-operative and Triodos and social lenders like Social Investment Scotland.

Community based approaches can clearly access funding to support the development of local renewable energy that commercial schemes cannot. This can help bring down the total costs of a project, reduce the risk of investment for individuals and communities, and potentially enable more financial benefits to be passed back to a community. However, as highlighted above, communities can also potentially get a large financial benefit through commercial developments.

Trust

Walker et al (2009) highlight how interpersonal and social trust are both functions of community renewables, that can be enhanced through community-led approaches. Although it cannot be assumed to occur, because each project and community varies, they suggest that trust plays an important role within both the dynamics of a project and the outcomes it can achieve. They put forward Gamblesby as an example, suggesting that the strong participatory, co-operative and consensual process they used was central to the projects development and realisation; it also enabled them to develop their capacity to develop further projects. From a policy perspective what works in one community cannot be assumed to work within another, but “purposefully supporting projects that seek to involve local people actively and directly and that are focused on achieving a rich set to collective outcomes may return good dividends” (Walker et al 2009:8). They go on to suggest that more participatory approaches could also create far more positive social context for larger issues such as moving towards a low carbon sustainable energy system.

Other studies have highlighted how communities can lack trust within the planning process itself and can be suspicious of the motives of commercial developers and the projects they put forward (Walker et al 2009; Wustenhagen et al 2007; and Eltham et al 2008). Given this apparent lack of trust and the clear evidence that community approaches can overcome this, they offer a clear advantage over commercial process in this instance.

Behaviour change and innovation

A much wider advantage of community based and/or owned renewables is their potential to change the attitude and behaviours of those involved with a project and those within the wider community. Houghton (2009), summarising two pieces of work for NESTA, discusses the role of communities as key actors in social change in terms of innovation, which straddles both social and technical change. He cites Steward (2008) who suggests that new ‘socialtechnical’ transitions have emerged in which technical development and social change combine to displace incumbents, companies, principles and priorities; and Appleby (2009) who discusses how solutions that respond to local situations and interests can create novel,

bottom up solutions to sustainability. In looking at the Big Green Challenge, Houghton (2010:9) suggests that the finalists have shown that “community-based initiatives can initiate a process of culture change in the community which reinforces and sustains individual behaviour change”.

Walker & Devine-Wright (2008) have also found evidence that the direct involvement of local people could have a positive impact on local people’s understanding of, and support for, renewable energy more generally. In looking at community energy projects and applications for funding to Clear Skies, they suggest that there may be a link between community activities stimulating action in individual households that resulted in higher uptake of households’ applications to Clear Skies in those areas where community projects were running. This was one of the outcomes that those involved within the Gamblesby project highlighted. Another good example is the Isle of Eigg where people are actively managing their energy demand in response to a voluntary demand cap and information about the available power on any one day.

It would appear that under current commercial approaches, community based schemes are more likely to enable innovation and behaviour change.

Wider community development

Many of the actors that have been involved in community based renewables have mentioned how such projects can play an important role in building community capacity, empowerment and awareness. It is common theme in many of the case studies and it is often the process of learning-by-doing that enables it to occur effectively. A good example is Gamblesby who reported how their project “was instrumental in bringing the community together and at the same time, developing knowledge and skills”. This sort of capacity building was echoed by Highlands and Islands Enterprise and Mid Wales Energy Agency that have supported many community-owned renewable projects (Evans 2006). It can result in a wider range of benefits beyond the energy project, such as increasing the sustainability of communities and improving local cohesion, some of these issues are discussed under section 3.3.3.

This is a specific advantage that community renewables offer over commercial schemes.

Delivering targets

In addition to the benefits and opportunities offered by community renewables, they can also play an important role in helping to deliver targets. As the Government highlight in their latest energy policies and strategies, the involvement of communities is increasingly being seen as central to the delivery of national targets and evidence of the potential role that they can play are evident within the case studies. They can also play a role in supporting regional and local targets, such as increasing installed capacity, creating jobs, helping to reduce fuel poverty or local per capita carbon emissions.

In summarising the lessons from the Big Green Challenge, Houghton (2010:3) states that “community-led innovation can be a powerful means of delivering national strategic objectives at a lower cost to the public purse and with less bureaucracy than traditional grant funding processes for community and voluntary groups”. This is further reinforced by Warren & McFadyen (2010) who suggest community-orientated approaches can facilitate the attainment of government targets and help engender a more informed and involved public.

Alongside commercial scheme, community approaches can clearly help with the delivery of targets; either through the active development of projects or more passively by accepting or supporting those of commercial developers.

1.2.2 Potential Issues for Community Based Approaches

Whilst there are clearly many advantages offered by community approaches, there are also a range of challenges they face which do not generally apply to commercial schemes. These will change with each project and in many cases can be dealt with through effective support.

This report has not covered the issues of cost and access to markets that have been a major barrier to community based approaches in the past. These have been widely discussed within the literature and many have called for the introduction of FITs to overcome them. Given that these are now in place, although need monitoring to ensure they are accessible and straightforward to access (Houghton 2010), it is assumed that these barriers have significantly been addressed, at least for projects up to 5 MW. Hopefully the RHI will have a similar impact on community based heat projects.

It is recognised that there is support for the development of renewable energy projects and often a willingness to be involved with them; and that people would like to see change; and be helped to live more sustainably (DECC 2009a, Ipsos MORI 2009, Rogers et al 2008). However, the number of projects that have been developed to date remains relatively low and this may in part relate to the capacity of communities to develop and run projects. One issue specific to community approaches links to the capacity, skills and perhaps willingness of communities to take on, or be involved with, a community based renewable project.

Rogers et al (2008) found that within a community in Cumbria there was a willingness to participate in renewables, but not take a lead, with people suggesting this was not a viable option. Walker (2008) also states that communities with apparent similarities can still have different capacities to take on responsibility for a renewable energy project. He suggests that not only does this relate to the development of projects, but can also be a longer term capacity issue, covering, for example the ongoing maintenance, operation and liabilities of established projects, particularly if the skills or knowledge dissipate after the installation. Evans (2006) also highlights that projects often can fail if there is no single, ambitious steering group in control. Houghton (2010:12) sets out what some of the key capabilities to act are, which include: legal structures; ownership of physical infrastructure; organisation; business and financial planning skills; and networking. Getting these issues right will build the capacity of communities to take action.

There is also evidence of the importance of support, for example Letcher et al (2007), state that community initiatives required access to trusted and expert support in both community development and technical issues to help coordinate and direct a project. Walker (2008) suggests a lack of support can be a major barrier, talking of the complexities of community approaches and issues such as legal conditions, economic and technical viability and the need for extensive liaison. Also, Walker & Devine Wright (2008) indicate that expert advice, like that previously provided by the Community Renewables Initiative, is important to enable successful community approaches to happen.

1.3 Which have been the Notable Successes and Failures, and why?

Until recently, it has been clear that the development of community renewables has been slow and this sits within the wider context of the UK's poor progress on renewables energy deployment. There have been issues with funding including the stop start nature of the Low Carbon Building Programme, the evidence that community streams have been oversubscribed and the complete loss of support through the loss of the Community Renewables Initiatives. There have also been well organised campaigns against the use of on-shore wind. These issues have no doubt led to individual failures to get projects up and running and could also have created a distrust or apathy in those that have been unable to develop their initiative. However, little research appears to have examined these sorts of systemic failures and what impacts they may have had. Even the research that has compiled large evidence bases of the scale of activity, such as Walker et al (2005) who identified over 500 projects, and who indicated that many of these were not successful, do not appear to have examined the reasons for failures.

This lack of evidence could in part be because people and communities can go to great lengths to avert failure, especially in innovative projects (Evans 2006). It is also, no doubt, because much of the literature about community renewables is written to examine the benefits that they can bring, creating a tendency to focus on those that have been successful. More generally, Houghton (2009) highlights that community approaches often do not monitor the effects of their actions, meaning failures are not quantified or are unknown, both within communities and in the wider networks that support them (CSE 2009).

Of the few examples that are referenced, they generally relate to broader contextual issues such as the multiple meanings of what a community renewable project is and how this understanding changes with the motivation of the actors involved. For example, Walker et al (2009) highlight how the wind development in Moel Moelogan resulted in community cohesion and trust becoming severely eroded, because many in the local community effectively saw it as a commercial development, even though it was badged as community. On a slightly different theme, Walker (2008) cites the Awel Aman Tawe community wind project which was refused planning permission despite local support for it and a model that would put money back into the community for regeneration. This is perhaps an example of more widespread failure/lack of understanding within local authorities to support renewables, outside of a communities control (although it looks as though Awel Aman Tawe may eventually overcome this as they are one of the LCCC projects).

There are also some broader lessons emerging that further identify why projects are successful and not. Some of the factors that impede projects are provided by Houghton (2010) and include issues such as the misalignment in community needs and current approaches from government, their agents and partners. He also highlights factors that can enable community-led initiatives to flourish such as the creation of independent income streams; making FiTs, the RHI and smart grids suitable for the community sector; and supporting entrepreneurial approaches. His report provides policy recommendations around these issues.

It is clear that many of the more successful examples of community-owned renewable projects to date are within Scotland. There are some important reasons for this that link back to much of the discussion so far. Most notably, communities in Scotland have been provided

with ongoing support and access to funding which, unlike the rest of the UK, have increased since their introduction (including the Scottish Community Households Renewables Initiatives and the Community and Renewable Energy Scheme). Community Energy Scotland provides communities with support right through the development process that includes feasibility studies and help to gain planning permission. At this stage, groups are much more able to access further funding as the business case is effectively made; this includes EU, Lottery and Scottish Government funding opportunities, alongside more mainstream financing. Their approach also includes support for networking, newsletters, events and other resources/toolkits and there appears to be a willingness from the communities themselves to support each other and share knowledge and skills. Some of the key lessons for success suggested by their approach (from Gubbins 2009) include:

- a strong sense of need/purpose;
- committed volunteers;
- simple, clear and stable funding and advice;
- training, skills and networking provision;
- good 'community process' and contacts between groups;
- quicker planning process;
- collective procurement;
- investment in infrastructure.

Of these points, the first five particularly relate to what is happening within the community, whereas the last three seem like more generic issues that CES helps facilitate. To these points, both Houghton (2010) and Walker & Devine-Wright (2008) highlight the importance of flexibility or diversity of approaches being important in enabling projects to develop the most appropriate response to their local circumstances.

The table below maps the indicators of success to the 12 case studies within Annex 2. Given the remit of this work, columns have also been added to indicate those projects that have established a process to reinvest income back into their communities (beyond simple 'community benefit' funds associate with wind projects) and projects that have grown or replicated their approach. It can be seen that for the most part, all of the projects contain a large number of these points and some contain them all. It is likely that in-depth research would reveal that the missing factors do occur in most of these projects.

Project	Factors						
	need/ desire	committed volunteers	funding advice	training/ skills	community process	funds reinvested	replication
Baywind	✓						✓
Bro Dyfi	✓	✓	✓		✓		✓
Fens Coop			✓				✓
FREE	✓	✓	✓	✓	✓	✓	✓
Gamblesby	✓	✓	✓	✓	✓		
Gigha	✓	✓	✓	✓	✓	✓	✓
Isle of Eigg	✓	✓	✓	✓	✓	✓	✓
Kielder	✓	✓	✓	✓	✓	✓	
Knoydart	✓	✓	✓	✓	✓	✓	
Green Valley	✓	✓	✓	✓	✓	✓	✓
Torrs Hydro	✓	✓	✓	✓	✓	✓	✓
West Oxford	✓	✓	✓	✓	✓	✓	✓

Table 5: Project Success Factors

Clearly these measures of success are project specific, and to some degree subjective. The table also considerably simplifies the complexities of approaches and the benefits and outcomes that are achieved. For example, it appears that the individual share based schemes come out badly, but this really only relates to the fact that the focus of some of these schemes is on providing benefits to individual shareholders who may or may not be within the local geographic community. This is not to say that there is anything unsuccessful about their approach, in fact Baywind is held up as a good example across many sectors, from energy to the co-operative/social enterprise (Hill et al 2007) and is perhaps the ultimate example of replication in community renewables through its Energy4All model.

1.4 What Scale of Project and Technology has been most successful?

There is no indication of what scale is most successful as this is entirely dependent on each individual project or the community's/organisation's objective. It varies with issues like the need the project is addressing, site specific issues such as resource constraints, access to finance, planning issues and more subjectively what scale of project communities feel is appropriate. This is likely to hold true for all technologies.

Many projects are small in scale, especially when they are related to meeting a local need, or are linked to a particular community building. This would include many of those funded under the community streams of Clear Skies and the Low Carbon Buildings Programme and their Scottish equivalents. An example is Gamblesby who just installed renewables on their village hall to meet their need for heat. A larger scale approach is shown by those projects that seek to meet the energy requirements of large parts of, or the whole community. Many of these projects are meeting a local need and examples include several of those in the Scottish islands such as Gigha's three wind turbines which provide around two thirds of their electricity needs, or the Isle of Eigg scheme that uses a combination of technologies to meet their power requirements.

There are also examples of commercial scale projects, linked to wind power. A good example is Fintry, who own a 2.5MW turbine on their local commercial wind farm, the income from which is paying off the capital costs and supporting their wider community objectives. The biggest scale though, are the Energy4All co-operatives, which take a 'community of interest' approach, by enabling individuals to have a stake within a commercial scale wind project. This includes shares in an overall scheme, such as the Isle of Skye Co-op which has a 10% stake in their local wind farm, shares in the ownership of individual turbines on commercial developments (Baywind & Fenland); and in some cases a whole wind farm (Baywind:Harlock and Westmill Wind Co-op).

Energy4All Co-operative	Scale
Baywind	Owens 5 turbines at Harlock Hill (total rating 2.5 MW) & owns 1 600kW turbine at Haverigg II (2.4 MW development)
Boyndie Wind Farm	Shares in wind farm (2 x 7MW turbines)
Fenland Green Power	Owens two 2MW turbine (on 16MW development)
Great Glen Energy	Shares in wind farm (16 x 2.5MW turbines)
Isle of Skye Renewables	Shares in wind farm (10 x 2.3MW turbines)
Kilbraur Wind Energy	Shares in wind farm (19 x 2.5Mw turbines)
Westmill Wind	Owens five 1.3 MW turbines – (total development 6.5MW)

Table 6: Energy4All Wind Co-operatives

In relation to technologies, it appears that wind has offered communities a more successful way to develop an economic scheme; Walker (2008) confirms that wind is by far the most profitable form of renewable energy and has generated proven returns. It is well understood, that subject to site constraints, it generally is the case that bigger is better in terms of maximising output and therefore potential income from a wind project; although Devine-Wright (2005) indicates that larger scale wind farms are consistently more negatively perceived than smaller installations. There also appears to be an interest in hydro based projects such as Knoydart, Torrs and Green Valleys; although very site specific, the emergence of Water Power Enterprises is driving the development of further schemes. This apparent preference for these technology choices may also link to their relative maturity in comparison to other renewables, which reduces their risk as reliability and power output is predictable, making raising investment easier.

It is worth noting here that the introduction of FiTs and the proposed RHI will help to reduce risk by providing fixed rates of return for generation and exports. This is likely to see other technologies at a variety of scales being more widely adopted by communities. For those technologies that are scalable like wind, the FiT may encourage communities to go for bigger installations than would have previously been considered.

1.5 Are there Economies of Scale that work better within Certain Communities?

All projects will face some similar generic considerations in relation to site-specific constraints such as planning, network access, resource quality and options, etc. Further constraints may be added by the legal model that is developed, which may also influence the type and level of community involvement. These sorts of issue will influence both the choice of technology and its potential scale.

Whilst there can be considerable crossovers between communities of identity, geography or interest, generally the bigger schemes have been associated with the latter. Energy4All is the most obvious and developed approach, using large wind projects to provide a good return for the individual investors, all of these schemes have been large scale. Examples such as Baywind and Westmill have shown that the demand for shares has exceeded the number available.

For communities based on a geographic location there have been a variety of scales used and many developments have been based around meeting a particular need. The examples from Scotland show a considerable range of approaches and an apparent willingness to develop large scale and ambitious projects. This in part may relate to the support they can get to develop feasibility studies, financial packages and gain planning approval, but is also likely to relate to their desire for self reliance not only in relation to energy provision but wider financial sustainability, often linked to the regeneration of their communities.

Linking to the previous question and the discussion on FiTs, these may also impact the economy of scale that comes forward. It is possible that there may be push towards the 5MW limits to maximise the potential of income. This may come from communities themselves, or more likely, from those willing to capitalise on this new legislation. This could include commercial developers who, given the constraints on large scale on-shore wind farms and the availability of sites into the future, are likely to start moving towards smaller

cluster approaches. There could also be the emergence of new companies that seek to make use of FiTs.

1.6 What are the Consequences of Working in a Rural Setting such as Cornwall?

There are a number of implications for developing community-owned renewables in rural locations. There are some conflicting viewpoints within the evidence, but much of it shows rural based community renewables can bring a wide range of benefits to local people, some of which have already been highlighted in section 1.1. This section considers these issues in relation to the nature of rural communities, support and finance.

1.6.1 Rural Communities

The evidence clearly shows that a majority of community renewable energy projects to date have been located within rural communities (Walker 2007). This in part relates to the fact that some technologies are more suitable for deployment in rural areas, such as wind and biomass. Also, Adams (2008) highlights that rural communities have more opportunities to act as there are fewer constraints in relation to land use, space and physical geography, presumably in terms of both scale and technology choice. The quality and range of resources will also tend to be better within rural areas, particularly in the case of wind.

Another reason for wider deployment in rural communities may relate to the fact that some are less well integrated into the energy infrastructure, with many being off the gas network or with unreliable power supplies, some communities are completely off-grid (CES 2009; Adams 2008). This can cause specific problems such as fuel poverty, which tends to be higher in rural, off-gas areas, but it also creates opportunities to meet energy needs locally. The case studies show that many rural projects have developed, at least in part, to meet specific needs for reliable generation, such as the Isle of Eigg and Knoydart Hydro.

Another strong driver for many rural communities is the desire to generate economic opportunities, including jobs and income streams, to support wider regeneration. This has included outside pushes from Government and their agencies in relation to meeting rural regeneration goals (Walker 2007) and local pulls from communities themselves wanting to take action (CES 2009). It can include particular sections of the community such as farmers and landowners, or local industries such as forestry, such as Moel Moelogan and Kielder; and it includes those projects that support the community as a whole, such as the Isle of Eigg or Gigha. Adams (2008) suggests that community-ownership and control of generation will be important factors in helping sustain rural communities in the future.

Many of the case studies, and some reports, show that strong social capital is apparent in rural communities and that this can provide a good foundation for a developing a locally based and owned energy project. This certainly seems to be the case in many of the Scottish examples where community-wide approaches have tended to dominate. Although, as Walker et al (2007) highlights, there are always exceptions, particularly if people feel they have been misled or if some people benefit or are harmed in some way more than others – this was a reported issue in the Moel Moelogan wind project in particular.

1.6.2 Support

In general terms, the literature and evidence from the case studies suggests that the level of acceptance in rural areas for renewable energy projects is likely to be high (Adams 2008; Hain et al 2005). This is also confirmed in the latest Rural Insights Resident Survey from the Commission for Rural Communities. This looked at the perceptions and priorities of rural people across England. It included a section on views of renewable energy which found “overwhelming support for increasing the amount of renewable energy generated in England, with just under nine in ten (88%) residents in rural England offering their support” (CRC/Ipsos MORI 2010: 46), this was particularly true for younger people within the sample. In terms of technology the survey found that most renewables had strong support – see figure 2. The slightly lower support for biomass and geothermal power was explained by a lack of knowledge of them. The survey also suggests a strong level of support for increasing the amount of renewable energy generation, more so in rural areas.

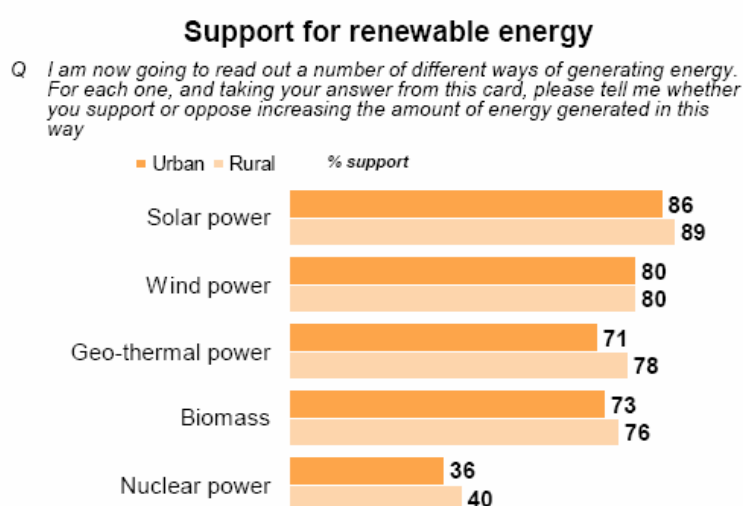


Figure 2: Support for Renewable Energy

Source: CRC/Ipsos MORI Rural Insights Survey 2009

However, as discussed in section 1.2.2, Rogers et al (2008) indicate the fact that community renewables are a popular concept may not be sufficient to make them happen. Their study showed that people were willing to be involved but nobody wanted to drive it. Similar concerns were voiced by individuals who took part in the Big Energy Shift (Ipsos MORI 2009). Given the importance placed on the need for committed volunteers in making projects successful that has emerged from the Scottish case studies (Gubbins 2009), this could be a cause for concern, particularly in more remote communities.

1.6.3 Funding

Funding in the form of grants, or finance linked to loans and other investment models is worth consideration against a rural context. In some examples, issues such as lack of infrastructure, rural and/or fuel poverty and wider economic and social issues can mean rural communities are able to apply for grants for economic development funding that other areas may not. For example, Scotland has been very successful in gaining EU and Lottery funds (along with Scottish Government grants) for many community approaches, partly linking to the strong economic and social regeneration outputs that many of these projects have provided. As CES (2009) highlight, these funders rarely supply 100% of costs, meaning

groups may need to look at a large variety of funding sources, lengthening the time it takes for a project to get up and running. Although funding at initial stages to complete feasibility studies and gain planning can make such schemes more able to access conventional finance.

On the flip side, schemes that seek to raise finance from those living in rural areas, such as share based approaches, may face constraints. In part this relates to population levels, meaning the potential number of investors is small if the project is focussed on a 'community of geography'. This can be exacerbated by the fact that many rural communities have more people on lower incomes or suffering from poverty. Adams (2008) suggests that several studies have shown that as many as 1 in 5 people in rural areas are in poverty and that nearly half of these are within working households. TLT (2009) confirm this double problem of low population and high relative poverty as an issue for rural equity schemes. There can also be wider implications as there may be a social equity dimension to ownership if not all members of a local community that would like to invest or be involved are able to, particularly if the benefits of a local scheme only go back to those that can invest (CSE et al 2009).

TLT (2009) suggest that an obvious way around the need to raise sufficient capital in rural areas is to seek investment from individuals outside of the immediate area of a project – a 'community of interest' approach. This is borne out by some of the share based schemes within the case studies. Baywind only secured around 40% of their investment locally and Torrs Hydro achieved around 65% local ownership. Encouragingly, Bro Dyfi, the scale of which is perhaps more aligned to the initial proposals by CPC, managed to achieve a 94% ownership stake within the local community. The implication of this is that a local wind turbine, for example, may not necessarily be owned by many of the people within the local community where it is placed, which could cause ill feeling or even opposition to a project. A sensible way around this would be to try and attract local members first, as the community share based schemes have done, and then consider what local benefits can also be provided, such as a local fund. This may not necessarily be an issue for some projects and each community is likely to take its own view on what levels of ownership and benefit are desirable. It is obviously easier to raise more capital from a bigger catchment of potential investors and the rules of ownership in any share model can take account of issues such as control and decision making from different types of members, something that Kabin have suggested could be built into the model for Ladock.

Many of the issues highlighted are likely to have an impact on the development of schemes within Cornwall. It is known that there are high levels of fuel poverty within the county (CSEP 2006) and that rural poverty is also likely to be high. The Poverty and Deprivation paper from Cornwall Strategic Partnership (2008:1) suggests that "In Cornwall as a whole, the 2000 IMD [Index of Multiple Deprivation] shows that in 80% of Cornish wards, one fifth of the population is 'multiply deprived' and in more than one fifth of wards, over a third of the population experiences multiple deprivation." Cornwall Council (2010) indicates that "11% of the population in Cornwall live in the 20% most deprived areas of England". This could clearly have implications for raising share capital although this is hard to quantify and perhaps the only way to gauge the level of interest, and likely income that could be raised, would be through running a pilot wind project. Alternatively, further research could be conducted to see what other community share schemes have been run within Cornwall and with what success.

Finally, it is worth highlighting again the impact FiTs may have. Given that these have made the adoption of renewables much more financially attractive there is a fundamental question about how communities will respond, which is unknown. On one hand FiTs clearly make the economics of any project more attractive and should in theory give communities a better incentive to invest and this might encourage more people on lower incomes to consider investment. However, those with a bit more money may instead opt to install on their own property to maximise their personal return, possibly reducing their willingness to invest in a community scheme. The introduction of PAYs and impact of new entrants coming into the market offering installations at lower costs may also encourage this. For example E.ON and Tesco both independently recently announced their intention to enter into the domestic solar PV and hot water market (NEF 2010a).

Potentially more seriously is the impact FiTs could have on landowners, who rather than accepting a small amount in rent from a community scheme, may prefer to develop their own project. The NFU is already promoting FiTs to its members (NEF 2010b) which will start to generate increased interest from this sector. In addition, the RDPE scheme has recently funded nine farmers who are working together to install 18 wind turbines within Cornwall, with 42% of the construction costs (RES 2010). Although it seems likely that these farmers will not be eligible for FiTs under state aid rules, practical installations like these and wider publicity such as the NFU, will make other farmers and landowners consider the options for taking similar approaches.

2. Growth and Replication

Given that a fundamental aspect of the CPC model is that experience and knowledge is captured in order to initiate similar projects elsewhere in Cornwall, this section considers the way in which other community renewable projects have grown or replicated their approach.

2.1 Is there any Evidence of Projects being able to Grow/Replicate their Influence, Assisting Further Projects?

Many community-owned renewables are developed to meet a local need and as such, are often linked to 'communities of geography'. This can result in the development of stand-alone projects which do not replicate their learning with other communities or expand their remit once the specific need is met. Many of these one-off types of projects are often linked to building-integrated renewables, which although owned by the community, do not seek to develop schemes beyond these assets. However, this is often not the case in community renewables and there are many examples of projects that have demonstrated aspects of growth and of replication. Adams (2008) suggests that it often happens because the initial reason behind why a project is created, is replaced and enhanced as they grow and develop, or as new people become involved, this can mean that both the purpose and the project broadens as time goes by. Most of the case studies in Annex 2 show examples of both growth and of replication.

2.1.1 Growth

Houghton (2009) states that a simple example of growth is the way in which an organisation or project scales up the impact of its activities. He cites Mulgan et al (2007) who suggest that growth is one of the best ways to spread innovation in social organisations; and he gives as an example Ecodyfi in Powys, who started with a focus on sustainable energy but have since taken on a broader range of economic regeneration activities across energy, tourism, farming, local food, waste and transport.

Of the case studies in Annex 2, nearly all have shown some form of growth with only Fens Co-op appearing not to have grown, most likely linked to its model and structure. The examples of projects that have grown show a wide range of different patterns of development, including: growth into new areas (e.g. FREE); growth in the range or scale of technologies (e.g. Isle of Eigg); as well as growth in terms of learning, management and capacity of those involved within a project (e.g. Gamblesby). Many projects show growth across all of these areas.

2.1.2 Replication

Houghton (2009) states that replication is basically the copying of an idea. To happen effectively he indicates that good communication and open access to people and resources are needed from the initiatives that are to be replicated. He cites Transition Towns as an example of replication as they place a strong emphasis on replication based on sharing both experience and expertise. They also provide a range of resources to support replication which has resulted in widespread take up with over 80 examples in the UK.

Within community-owned renewables there are an increasing number of examples of replication. This includes the replication of particular models of working, such as the co-operative share approach used by Energy4All and Water Power Enterprises; it can also

include the replication of particular ways of working to deliver a project, such as CoRE; and can include particular approaches to funding schemes. As above, to some degree these overlap and many projects exhibit multiple forms of replication, some examples are given in table 7, below.

Approach	Example
Model	Energy4All aims to expand the number of renewable energy co-operatives in the UK Industrial and Provident Society (IPS) Co-operatives. It is owned by the co-operatives it assists, and in addition to Baywind, which created Energy4All, a further six have so far been established. As additional co-ops are established they too will take a share in Energy4All. All of the co-ops are based on large scale wind and they pay dividends back to the individual share holders.
Model	Sharing some similarities with Energy4All is Water Power Enterprises, who are a social enterprise that is helping set up co-operatively owned small-scale hydro plants. They helped establish Torrs Hydro and Settle Hydro and are currently supporting a further four projects. The individual projects develop their own IPS framework based on a community benefit model to ownership, which puts a stronger focus on social, rather than individual dividends, with profits going back into communities to support other projects.
Funding	Gigha developed a funding model through three routes to enable them to develop their project, this included grants, a community loan and equity holdings. It was a first for Scotland for this model of community wind and they state that the financial model is robust and capable of widespread replication. Warren & McFadyen (2010) suggest that a further four projects have replicated this approach.
Delivery	Community Renewable Energy (CoRE) is a social enterprise that works with communities to develop renewable energy projects to generate an income and provide sustainable, secure energy supplies. It uses an ESCo model to enable the delivery of community renewable projects, with CoRE taking a stake in each ESCo they set up to recoup its development costs and cover the management of supply, billing and maintenance. This income is also used to help develop further projects in other communities. Their website identifies four projects they are currently supporting through this approach http://www.core.coop/site/
Delivery	The lessons and experience of delivering the FREE project were in part linked to the assistance of commercial developers and financiers. However, the community has gained considerable knowledge from this and have set up their own organisation to enable other communities to benefit from their experience and expertise http://www.frost-free.co.uk/ . The Isle of Eigg have also established an online resource to share knowledge and experience with other small island communities that want to become more sustainable with the aim of encouraging others to follow in their footsteps.

Table 7: Examples of Project Replication

2.1.3 Supporting Growth and Replication

Houghton (2010) highlights that the idea that any community-based model can be transposed from one area to another in a traditional top-down piloting or scaling-up approach cannot be assumed. He cites Bunt & Harris (2010) who also looked at the lessons from the Big Green Challenge. They highlight how local solutions are often effective because they reflect the needs of specific communities and engage citizens in taking action, even if their impact in terms of national targets is limited by their scale. They also highlight that trying to scale up effective local solutions without enabling local ownership will limit their potential and they suggest that ‘mass localism’ is the way forward. In the case of Government, this will require new kinds of support that takes a less centralised approach.

In addition to national programmes, these findings also have implications for other organisations that promote a particular technology, project, model or way of working as there is no guarantee that what has worked in one community, will successfully work in another. Much of this relates back to the diversity issues that Walker & Devine-Wright (2008) highlight, including the range of approaches taken, the underlying social dynamics, the actors involved, technologies, scale, etc; and links to local needs, capacity, skills, and resources. In many respects, only local communities themselves can effectively navigate through these to find the most appropriate project or approach to meet their local needs and circumstances.

This has implications for policymakers and organisations trying to support community-led renewables and Houghton (2010:5) puts forward the following policy recommendations to help spread the impact of community-led initiatives:

- Rely less on direct replication of best practice models and instead focus on creating the opportunities for communities to develop their own solutions, learning from each other.
- Accept that it is part of any innovatory process that a proportion of initiatives will fail and for this to be openly recognised by decision-makers.
- Review the interface between communities and energy suppliers, local authorities and central government on climate change issues; and work to remove the barriers to effective partnership with community-led initiatives.

Houghton (2010) also suggests that that once communities have mobilised their interest they require little intervention to bring forward initiatives in their community; and that appropriate small interventions might include increasing access to expert support and assistance with networking. This is the sort of thing that Community Energy Scotland has been particularly strong at and it is also happening in other networks such as Green Communities, the Low Carbon Communities Network and Transition Towns.

3. Financing

For any organisation or project, a key issue is how to raise sufficient capital. The potential ways that this can be done can link to the legal structure adopted, alongside wider considerations such as the purpose and objectives they have. This section considers these issues in relation to share-based approaches:

- What evidence exists for how community share issues work?
- What are the key issues that local groups have considered?
- Why have they opted for a share issue rather than other financing options?

The evidence for these comes from both those projects that have run share issues and from the development organisations that support social enterprise. In particular the resources available through Community Shares have been referenced. This is funded by the Government and delivered by the Development Trusts Association in partnership with Co-operativesUK and with the support of an expert reference group drawn from the wider legal, community development and social enterprise sectors. It aims to create a more robust evidence base on the potential for community share and bonds issues to increase community empowerment, grow social enterprises and support wider Government objectives (CS 2010).

3.1 What Evidence Exists for How Community Share Issues Work?

3.1.1 Context

Raising money through share issues is a well established way to obtain capital for enterprises that serve a community purpose. At the start of the Community Shares programme, 85 examples of community investment¹ were identified and within three months of their programme a further 70 organisations that were developing community investment plans were found (CS 2009a). They suggest there have been three distinct phases in the development of community investment practices, dating back to the early ninetieth century:

- Up to 1970 it was dominated by the birth, growth and consolidation of the consumer co-operative movement (which still accounts for the majority of community investment).
- 1970 to 1999 saw the emergence of 'community of interest' approaches, particularly in railway preservation societies, using both plc and IPS structures.
- Since 1999, a range of new organisations have adopted community investment approaches, predominantly using an IPS structure.

Community Shares indicate that there has been a resurgence of interest in using community investment to finance initiatives. This is partly due to the growing range of issues facing communities from major concerns like climate change through to the loss of local facilities, and the ability of local share issues to provide capital to address these concerns, particularly at a time when public finances are under pressure.

Brown (2008) suggests that community investment is concentrated in four areas: community finance, community energy, community services and community assets such as land and buildings. Although they use different approaches to investment, they have in common a

¹ For their purposes they defined community investment as "The sale, or offer for sale, of more than £10,000 of shares or bonds to communities of at least twenty people, to finance ventures serving a community purpose".

strong community focus and identity which makes community investment appropriate. Of these four, it is clear that community investment has played an important role in enabling community-owned renewables to develop. Community Shares (2009a) suggest that community renewables have been the most popular trading activity since 1999 and they put this down to the relatively safe and predictable returns, especially from wind and hydro projects, and the evident social, community and environmental benefits renewables bring. As Houghton (2010) also highlights, this growing interest may also relate to the desire of communities to create independent income streams to support wider community-led initiatives. Many schemes have also been helped through the emergence of two development agencies, in particularly Energy4All for co-operative wind projects and more recently Water Power Enterprises for hydro schemes (Brown 2008).

The process of how community share issues work is well understood, if sometimes overcomplicated by the wealth of information that exists and the differing perspectives about which model and legal structure is best. Before considering the process of raising capital through shares, it's worth noting that this is one step within a chain of development in defining, creating and launching an organisation and/or project that is suitable for community investment. Several resources are available that describe the overall process, as set out below in table 8.

Resource	Summary
Hill et al (2007) Community Share and Bond Issues – the sharpest tool in the Box www.dta.org.uk/resources/publications/communityshares.htm	This resource is designed to meet the needs of organisations seeking to raise less than £1 million from investors willing to accept modest financial and high social returns. It suggests that organisations should ideally consider the potential of share issues when establishing their legal structure. It sets out guidance under six areas, including example templates covering: What share issues are; The benefits of share issues; How to organise one; The legal implications; Examples – large and small; The documentation required.
Brown (2008) Community Investment: Using Industrial and Provident Society Legislation www.co-operatives-uk.coop/live/images/cme_resources/Public/In%20the%20Spotlight/ITS%20Sept/Community-Investment-guide.pdf	This resource explains how IPS formats are being used for community investments and identifies some of the unique attributes of IPS legislation, explaining how this supports community investment. It focuses on the achievements of 61 societies who have used community investment and explores what these examples have to offer as lessons for the future. It also examines a range of practical issues such as the tax relief and the exemptions available to IPSs from the regulations governing financial promotions. A step-by-step guide to getting started is also provided.
Co-operativesUK (2009) Simply Legal www.co-operatives-uk.coop/live/images/cme_resources/Public/MakingLocalFoodWork/SimplyLegal.pdf	This updated guide explains all of the options that are available in terms of legal and organisational structure in the third sector. Specifically it covers: why legal structures are important; what incorporation is and its advantages & disadvantages; a summary of unincorporated organisation structures; a summary of incorporated organisation structures; organisation types; ownership; charitable status; becoming a charity, its benefits and its restrictions.
Community Share Factsheets (2009) http://www.communityshares.org.uk/factsheets	7 factsheets covering community investment, including: Factsheet 1: What is community investment? Factsheet 2: People and communities Factsheet 3: Shares and bonds Factsheet 4: Financial promotions Factsheet 5: Capital finance Factsheet 6: Legal structures Factsheet 7: Feasibility studies

Table 8: Community Shares - Key Resources

3.1.2 Getting the Right Legal Structure

A key consideration for organisations wanting to raise equity through community share investments is getting the right legal structure. There is no right or wrong choice, but a number of project specific factors need to be taken into account including the scale of a scheme, possible sources of investment and what benefits will be passed to a community (Waugh 2009). The Co-operativesUK report in table 8, provides a comprehensive overview of the aspects and implications of each form of legal structure that could be adopted. A simpler overview is provided in the Community Shares Legal Structures Factsheet which suggests that of the options available, only three are particularly suited for community investment purposes:

- **Industrial & Provident Societies (IPS)** – registered and regulated by the Financial Services Authority (FSA). They are corporate bodies with limited liability status, but with several unique attributes that make them particularly appropriate for community investment. There are two main types of IPS: co-operatives or community benefit societies (Bencoms), the main difference between them are based on their relationship with members. In the last 10 years, 34 of the 41 new organisations with community investment have chosen an IPS structure.
- **Community Interest Companies (CICs)** – which can be companies limited by shares, companies limited by guarantee, or public limited companies, with legislation setting out what these different structures mean. Of the three CIC's, limited by shares allows equity investment by individuals, whilst protecting the interests of communities. Since 2005 when the CIC legislation was introduced, 2,500 CICs have been established.
- **Charities** – which offer the least scope for community investment as they are unable to issue share capital, meaning bonds are the only route for them.

Whilst the most appropriate legal structure for an organisation will ultimately depend on its underlying purpose and objectives, it is clear that if share capital is desirable that an IPS or CIC structure is likely to be preferable. Of these choices the IPSs have become by far the most popular:

- Since 1990, over 80% of new community shares issues have been by via IPSs. Rising to over 90% since 2000 (CS 2009b).
- Since the introduction of the CIC model in 2005, there have been 17 new community investment share offers and of these only one was a CIC, the other 16 used an IPS structure (2009c).

There are a number of reasons for this, which relate to both the purpose of the organisation and the regulatory requirements placed on running financial promotions. Like other companies, IPSs are corporate bodies with limited liability, but they have a number of unique attributes which make them significantly different – Box 1. This includes the way that they are run, and the method and costs associated with raising share capital, resulting in IPSs being particularly suitable and highly effective vehicles for community investment.

Box1: Attributes of IPSs

“Shareholder democracy: IPSs work to the principle of one-member-one-vote, regardless of how much share capital a member holds, in contrast to companies, which operate to the principle of one-share-one-vote. Members of an IPS have the collective right to appoint and dismiss directors, accept or reject directors’ recommendations, and to determine the affairs and rules of the society.

Withdrawable share capital: This is a special form of share capital that can be withdrawn by members, subject to the conditions laid down in the rules of the society. Unlike transferable share capital, where members must find a third party buyer if they want to sell their shares, members holding withdrawable share capital know that they can sell their shares back to the society. Societies can treat withdrawable share capital as equity as long as the rules of the society give the directors the right to refuse a request for withdrawal if this is deemed to be against the interests of the society. Societies can choose to issue withdrawable shares, transferable shares or shares that are both withdrawable and transferable.

Limits on shareholdings: Individual members cannot have a shareholding in excess of £20,000 in any one IPS, although there is no limit on the shareholding of one IPS in another IPS. The limit on individual shareholdings is currently under review and is likely to be increased to £30,000 before the end of 2009.

Limit on share interest: The interest payable on shares must be limited to what is “necessary to obtain and retain enough capital to run the business”.

Source: CS (2009c:1-2)

“Asset lock: Community benefit societies can install an asset lock that prevents the society being sold and the proceeds distributed among members. This is similar to the asset locks available to charities and community interest companies.”

Source: Brown (2008:8)

The above attributes help to explain the rise in growth in the use of IPS structures in community organisations that wish to issue shares. A key aspect is the use of withdrawable shares, as this sort of share capital is exempt from regulation under the Financial Services and Markets Act (FSMA). The use of withdrawable shares also has exemptions from the regulations covering the approval of financial promotions and compliance with the money laundering regulations. A useful summary of the legislation and its requirements is available in Brown (2009) page 38. The implications of these are basically that the cost associated with raising share capital through an IPS is a fraction of that of a fully regulated share offer. For example, Brown (2008) and WRT (2008) suggest a cost range of somewhere between £25,000 and £80,000 for a regulated share offer, which is only sensible for schemes wishing to raise £1m or more. This compares to around £3,000 for a small scale IPS share offer including prospectus design and print, distribution, administration, and solicitor’s fee (ATU 2009). However, as Brown (2008:8) highlights, the more flexible regulations still require directors of IPSs to have a “strong obligation to treat their potential members and investors fairly, and not to make false or misleading statements in their promotional documents”.

Brown (2008) also highlights that the FSA set out voluntary guidance for community investment offers which are exempt. These recommend that share offers should include an offer document, containing sufficient information for potential investors to make a proper

financial assessment of the offer. This should include full financial information about the proposed venture, and the projected returns on the investment.

3.1.3 Process

Brown (2008), in looking at the use of IPSs provides a useful step by step guide to creating a community share offer. It covers the complete process from developing the idea to launching the investment offer – simplified significantly in figure 3. Although all nine steps in the figure below are a key part of the process of starting an organisation and getting it to the point of launching a share issue, points 6 to 8 deal with some of the key decisions that groups need to take and this is explored in more detail in 3.2, below.

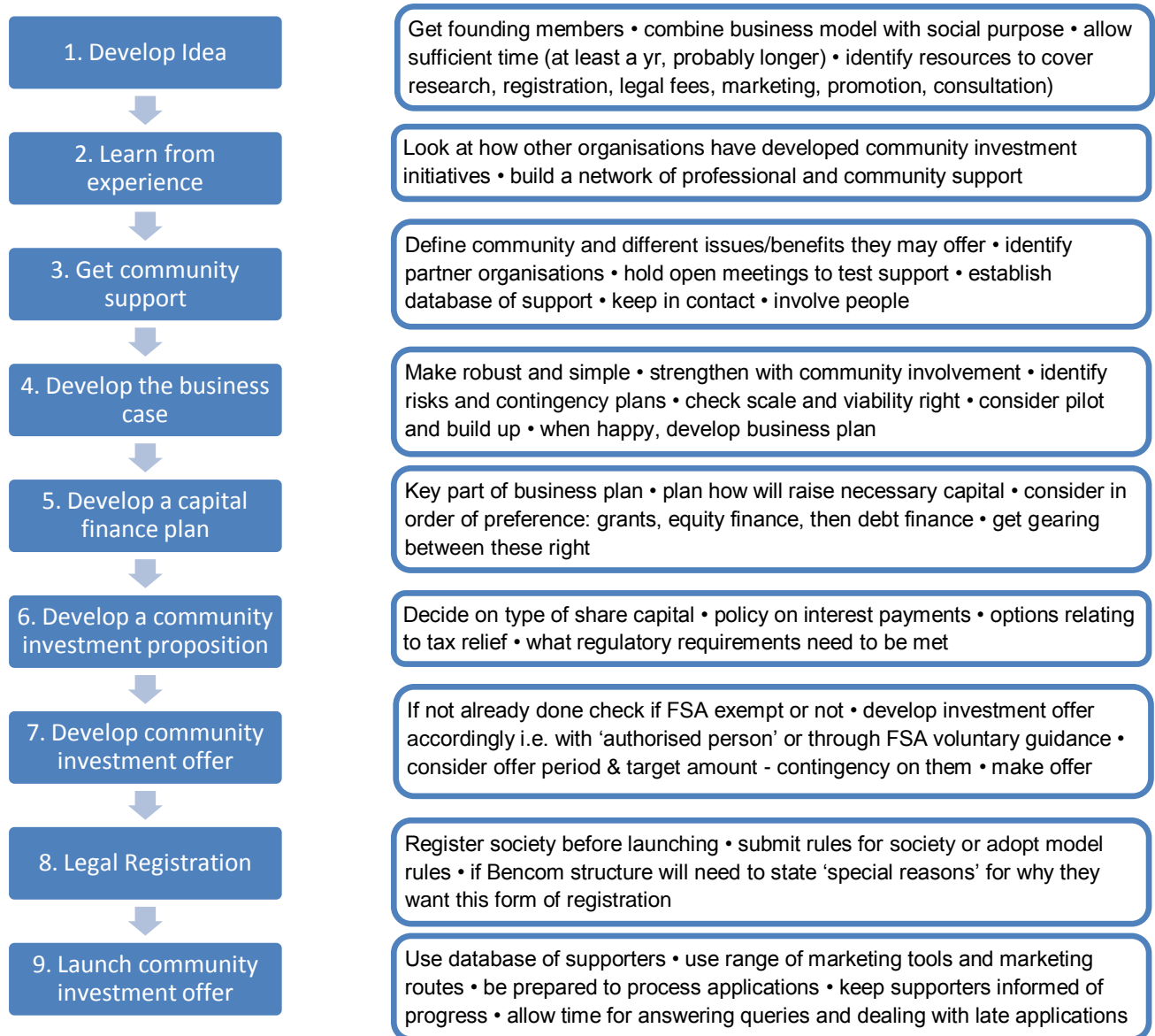


Figure 3: Steps in Launching Community IPS Share Issues
Source: After Brown (2008)

3.1.4 Supporting Organisations

There are a range of organisations that support the development of community investment organisations and social enterprises. They offer resources and guidance on all aspects of the development process to help support the growth of new enterprises. This includes big national organisations like the Development Trust Association and Co-operativesUK that run a wide range of programmes. There are also regional support programmes and local organisations all over the UK that support and promote community approaches. This includes Kabin who promote and support co-operative, mutual, and social approaches in Cornwall.

3.1.5 Example Share Issues

There are a range of example share issues that demonstrate the approach being taken to raise capital. These are summarised in Annex 3 and both demonstrate what community share issues look like, and some of the decisions and processes involved. They include:

- The Energy4All approach using a fully regulated large IPS Co-operative model, linked to information in their Energy Prospects share offer and the Westmill Co-op.
- Smaller scale community benefit society IPS approaches such as Torrs Hydro and West Oxford Community Renewables (WOXR).
- Examples from other trading areas including a small scale co-op linked to a community buy out of a shop (Slaithwaite Co-operative) and a community buy out of an old school for a community enterprise and arts centre (Headingly Development Trust).

3.2 What are the Key Issues that Local Groups have Considered?

The various reports highlighted in table 8, show a range of considerations for groups that wish to develop a share offer and the examples in Annex 3 provide further insights. Some of these relate to the fundamental principles behind community-led approaches relating back to peoples beliefs and desires or addressing a local need. Others relate to the mechanics of the organisation itself, creating it and getting it to the point where it can secure share capital – points 6 to 8 in figure 3. Each of these areas is interrelated and effectively shapes the nature of the organisation and the share offer itself. They also give an idea of some of the key issues that need to be considered, such as:

- structure;
- share capital;
- interest payments;
- tax relief;
- shareholding;
- risk;
- democracy and engagement.

3.2.1 Structure

As highlighted above, getting the right legal structure is a key decision that groups need to make and there appears to be a clear preference towards IPSs. The choice between a co-operative IPS or Bencom IPS is relatively straightforward: “Co-operative structures are most appropriate for organisations whose members have a transactional relationship with the organisation, as customers, suppliers or employees. Community benefit structures are more

appropriate for organisations that aim to serve a broader community purpose and do not have a transactional relationship with their members” (CS 2009c:3).

All IPSs need to be registered with the FSA using a set of rules for the society that shows its purpose and structure meets the requirements of legislation. Although possible to develop these rules, many IPS use ‘model’ rules that have already been approved by the FSA, reducing cost and time. These are presented through a sponsor body and can be amended to some degree to suit the organisation. Approved model rules are available from the [FSA](#), and these include, for example, the ‘Wessex Rules’ and the Co-operative UK model rules. Both are available on the Development Trust’s Website: [Wessex Rules](#) and [Co-operative Rules](#). There are a number of other model rules available for organisations that wish to issue community share issues – these and their contact details are provide in Brown (2008) on page 40.

Looking at the share issue examples in Annex 3, two used an IPS co-operative structure: Westmill used the Energy4All model and issued a fully regulated prospectus at a cost of £150,000, but brought in more than £4m in capital; and this contrasts with Slaithwaite Co-operative which is aimed to raise £15,000 for a share offer that costs nothing to issue. The other examples are all IPS community benefit societies, with Torrs Hydro and WOCR both basing their approach on the Wessex Rules already approved by the FSA.

3.2.2 Share Capital

Engaging communities is an effective way to raise finance, but there are different forms of share capital that have financial and legal implications for an organisation. The type of shares that will be offered need to be considered as part of the development of the share issue, these are summarised in Box 2.

Looking at the share issue examples, only Westmill used transferable and withdrawable shares. These transfers were only allowed from member to member and at the discretion on the board, i.e. not through a tradable market. Members could redeem up to 5% of the total equity a year on a first-come-first-served basis. All of the other examples used ordinary withdrawable shares that could not be withdrawn in the first three years, after which three months notice was required. They all had, within their rules, provisions to disallow withdrawal and the ability to write down the value of shares if required.

3.2.3 Interest Payments

A policy on interest payments is also needed as the FSA make it clear that the interest paid to members must be limited to what is ‘necessary to obtain and retain enough capital to run the business’. The business plan must also demonstrate that the level of interest can be afforded by the society (Brown 2008). The sample share offers showed a range of different approaches to interest payments:

- Westmill proposed paying 5% interest a year, rising to 12% by the end of 25 years;
- Slaithwaite do not appear to have given a figure or conditions within their offer;
- Torrs suggested that any payment would be moderate and only if financial returns allowed it. The maximum they said this would reach would be 7.5% and only after year 4;
- WORC state that they do not expect to make interest payments for the first 5 years and thereafter an expected rate of up to a maximum 5% will be paid depending on the performance of the Society.

- Headingly stated that the interest payable on share capital would be determined by the Board of Directors and communicated to members; and that currently it was not intending to pay interest on share capital.

Consideration of interest on payments will be important as some investors may expect a certain rate of return, although many Bencom structures appear to be designed more to bring social rather than financial returns. In particular, Torrs and WORC both make it clear in their offers that their primary purpose is the social return to the communities in which they are based.

Box 2: Types of Share Capital

“**Withdrawable share capital** is unique to IPSs. Shareholders can withdraw their capital from the IPS, subject to the rules governing share capital, including the discretionary power of the directors of an IPS to refuse withdrawal. IPSs that decide not to grant directors this discretionary power must treat their withdrawable share capital as debt not equity. Because members can withdraw this type of share capital, it is vital for IPSs to hold sufficient reserves to meet requests for withdrawals. Members will withdraw their capital for a variety of reasons, ranging from the highly personal, which may have nothing to do with the IPS, through to purely commercial reasons, based on the performance of the IPS. This possibility places a healthy pressure on IPSs to satisfy the needs and interests of their members. Withdrawable share capital is highly attractive to community investors because it provides a simple and straightforward way of selling shares, especially compared with other types of share capital.

Ordinary shares in companies, including CICs, are transferable rather than withdrawable. This means the shareholder can sell their shares to another person, although the company can, through its constitution, place some restrictions on how this is done. IPSs can also issue shares that are only transferable. They can also issue shares that are both transferable and withdrawable. The advantage of transferable shares, from an organisational point of view, is that once the money has been invested, there is no obligation ever to refund that capital. Another advantage of transferable shares is that the dividend or interest payable on these shares is variable, and determined by the directors and members, although this is also true of withdrawable share capital.

Preference shares are different from ordinary shares and withdrawable shares in two important ways. Firstly, preference shares usually have a fixed interest rate or dividend, which might encourage investors to invest. Secondly, preference shares do not confer membership or voting rights, which is not so good in terms of community engagement, but means the organisation is not subject to any of the potential drawbacks associated with membership. Preference shareholders are ahead of other shareholders in the priority list of creditors, should the organisation get into financial difficulties, which can be an added attraction for investors.”

CS (2009d 5:3)

3.2.4 Tax Relief

Brown (2008) highlights two forms of tax relief available for community investment, the Enterprise Investment Scheme (EIS) and Community Investment Tax Relief (which is just designed for Community Development Finance Institutions).

The EIS is widely mentioned within the literature and highlighted within some share offers. It provides a range of tax relief to investors who purchase new shares in smaller, higher-risk, trading companies. It can reduce investors income tax liability by 20% of the amount invested, providing at least £500 and no more than £500,000 is invested and that these

shares are held for at least three years. The organisation itself also needs to meet certain criteria, firstly only certain types of trading activity qualify for this scheme, although energy is one of them; also the maximum amount of share capital that can be raised is set at £2m and the enterprise must not employ more than 50 people at the time of the share issue. IPS share offers linked to energy that have been approved for EIS include Westmill Wind Farm, Fenland Green Power and Torrs Hydro (Brown 2008).

Basic information on the EIS is available from: <http://www.hmrc.gov.uk/eis/guidance.pdf>

Considerations for tax relief are important for some investors as it can make the potential return on investment greater. For example, the Baywind returns to members show that the EIS tax relief can add as much as 2% to the annual level of returns on an investment (Baywind 2010).

3.2.5 Shareholding

As highlighted, there are rules on the amount of shareholding an individual investor can have - currently set at £20,000, although this limit is due to be removed in the proposals set out within 'The draft Legislative Reform (Industrial and Provident Societies and Credit Unions) Order 2010' available from hm-treasury. In terms of minimum investments, Brown (2008) suggests that practices vary widely ranging from £1 to £1,500. The sample share offers in Annex 3 show a range of minimum investment levels: Westmill = £500 (assumed from Energy4All prospectus); Torrs = £250; Headingly DT= £100; WOOCR and Slaithwaite = £10.

Consideration of the minimum level of investment is important as a balance needs to be struck between the hassle of administering small amounts of money and what people can afford to invest (ATU 2009). As Community Shares have highlighted, large amounts of capital can be raised in relatively small amounts from each member. They use the Phone Co-op as an example, which in 2007 had a membership of over 6,700 people that had collectively invested over £1.6m. The mean average investment was £237, but the median investment was only £30 (CS 2009a). Whilst this will vary with each project, if this level of investment was typical, based on the above figures only the approach taken by WOOCR and Slaithwaite would have enabled these people to invest. Clearly, given the potential issues discussed in section 1.6.3 about raising capital within rural communities and possible problems of social exclusion, setting the correct level will be important.

3.2.6 Risk

As highlighted under legal structures, it is a requirement of the legislation that the directors of an IPS treat their members fairly, and do not to make false or misleading statements in their promotional documents, often referred to as due diligence (WRT 2008). As part of this it is important that the offer for investment clearly states what the possible risks to a person's capital might be through the proposed investment.

The sample share offers in Annex 3 vary considerably, partly due to the different nature of risk identified by the directors in relation to the specific projects or technologies they are using. They all point out that potential investment is a risk and that shares could decrease in value. They also highlight that member liability is limited to the value of their share holding. Generally, most advise that people should speak to an Independent Financial Adviser before purchasing shares. Examples of technology risk are set out in some, such as Torrs for hydro power and Energy4All highlight very specific issues relating to wind power. This includes

potential changes in the level of generation that will affect income, along with wider technology and industry specific issues. The Energy4All prospectus actually details two pages of potential risks.

3.2.7 Democracy and Engagement

Community shares create a direct link between the investors and the organisation, particularly through the use of a one-member-one-vote policy. This is not a requirement, although it is common, with 34 of the 41 successful share offers made in the last 10 years using this structure (CS 2009e). They go on to highlight that having a large and democratic membership supporting a community project can make a real difference to its success and the level of engagement of people within the community. They see ownership and control as a key mechanism in enabling members to participate and bring their skills, knowledge and expertise to help make the enterprise a success, which as they are investors is clearly within their own interest. This level of control extends right through the organisation as members have the collective right to appoint and dismiss directors, accept or reject directors' recommendations, and to determine the affairs and rules of the society (Brown 2008). These points are discussed further in section 3.3.3.

All of the case studies use a one-member-one-vote approach, regardless of the number of shares held. Generally it appears that members of these IPSs are also able to elect board members at the Annual General Meeting as set out in the rules of their organisations. For example, both Torrs and WOCC state that Directors will be elected on a three-year rotation to manage the affairs of the Society, with the Founding Directors standing down at the first AGM. The Energy4All current prospectus includes a provision for the right to amend the rules by majority vote of the members, subject to approval by, and registration, with the FSA.

3.3 Why have they opted for Share Issues Rather than Other Financing Options?

Raising finance is clearly a central issue for the development and delivery of any project. There are a number of ways that this can be done which have different implications for an organisation, its work, cashflow and the type of benefits it may be able to provide to a community. This section considers the different options for raising finance, how these compare to shares and the need to get the right balance between them. This information is primarily drawn from the Community Shares Factsheet 5: Capital Finance.

3.3.1 Types of Capital

Community Shares (2009d:1) suggest there are four main types of finance available including: Grants, gifts and donations; retained profits; debt; and equity. However, for new organisations retained profits will not be available. Brown (2008:32) highlights the preferences: "Grant finance from sources other than your target community is best of all. Equity finance from the community is the next best source of capital. Debt finance is the final option. Most initiatives involved a mix of all three."

Grants, gifts and donations

"Money that is freely given by donors who support the purpose of the organisation, without any expectation of or right to a return on their gift. This form of charitable giving is by far the

largest and most common source of capital finance for many organisations pursuing a social or community purpose” (CS 2009d:1).

These forms of finance are particularly useful in avoiding financial strains on an organisation, particularly if, in the case of grants, they are unrestricted in what they can be used for. However, fundraising can be a resource intensive procedure that can take a considerable amount of time and may not be successful in securing sufficient capital. Within the case studies in Annex 2, a number of projects show high levels of grants within their funding mix, particularly for the less commercial, smaller scale, community benefit and demonstration projects. For example, it appears that Gamblesby and Kielder may have both secured 100% of their funding from grants. None of the larger scale projects, particularly those linked to revenue generation, have been able to secure such high levels of grant funding and some, most notably the Energy4All co-operatives, have received very little in terms of their total budget – table 9.

Retained profits

“Profit or surplus is reinvested by the organisation, rather than distributed to stakeholders in the form of bonuses, profit-shares, dividends or some other vehicle for distributing profits”. (CS 2009d:1).

For new ventures there is not an option to use retained profits. For more established organisations retained profits can be a very useful source of capital to enable them to grow or replicate. An obvious example is Baywind that was able to use some of its income to set up Energy4All, which they appear to have done by significantly reducing their dividend payment in year seven of their operation (Baywind 2010). However, Community Shares highlights that a drive to make profit might compromise the objectives of organisations, such as providing affordable services to a community or members. They suggest that even for profitable organisations; over reliance on retained profits for capital investment can slow the rate of growth, and lead to missed opportunities (CS 2009d).

Debt

This is “borrowed money from a third party, which normally must be repaid over an agreed period, and which attracts an agreed rate of interest payment. Bonds are a form of debt, as are debentures, lease agreements, overdrafts and loans.” (CS 2009d:1)

There are lots of different sorts of debt finance each with their own characteristics and purposes which will vary in their usefulness to different types of organisation and projects. Generally, it will not be easy to raise for new organisations that have not got a track record, or reserves or other assets that can be secured against a loan. It can also be difficult for projects that have an element of risk, such as securing planning for a wind turbine. These sorts of problems not only mean it can be difficult to secure debt finance; it can also result in higher costs for borrowing, particularly as the level of risk increases. In some respects the introduction of FiTs may help increase the certainty of income for some projects.

The other big drawback of debt finance, compared to other sources of capital, is that debt needs to be repaid, which can place a burden on organisations to generate additional profits, or to take out new loans at additional cost to repay the debt (CS 2009d); although they point out this burden can be reduced by obtaining longer term loans tied to a capital asset.

Examples of debt finance highlighted by Community Shares (2009d) include overdraft agreements, mortgages, secured and unsecured loans, some types of leasing arrangements and bonds. Of these bonds (or loan stock or debentures) merit further discussion as they are the most common type of debt instrument used for community investment purposes. There often also discussed alongside the use of share equity by organisations that support community investment (e.g. Hills et al 2007; Community Shares resources). A useful side-by-side comparison between the two (from and issuers point of view) is provided by Community Shares – share & bonds factsheet (CS 2009b). Bonds are basically unsecured loans with a fixed interest rate that have no ownership rights. Compared with other types of debt, community bonds have a number of advantages:

- they are usually unsecured loans, meaning an organisation can use their assets and resources to secure debt from other sources;
- interest rates are fixed and the repayment is not required until an agreed redemption date;
- community investors often accept lower interest rates than commercial lenders, making bonds a cheaper form of debt finance.

Kabin put forward the idea of a South West Energy Bond at an Eden Forum last year, which has been highlighted by Houghton (2010: 19) “This idea, inspired by Community Power Cornwall’s model, targets one of the main barriers preventing community-scale renewable energy projects, financing, and recognises the opportunity to develop sustainable business models. A working group of the Eden Forum is looking at scaling up renewable energy supply across the region and is investigating the possibility to design and issue a bond that will finance distributed energy projects in the South West. This South West bond proposal includes the idea to mobilise 10,000 people to support the bond which would be endorsed by the Royal Society of the encouragement of the Arts, Manufactures and Commerce (RSA) Fellowship network.”

Debt finance has been used in several of the case studies in Annex 2 and 3. The exact form is not obvious in several projects from the information they have published, but many seem to be loan based. Table 9 gives some indication of the level of debt used within the funding mix and examples include:

- Energy4All who have often used loans from the Co-operative Bank;
- FREE who have a mortgage agreement with Flack Renewables;
- Gigha who had a social loan from Social Investment Scotland;
- Torrs Hydro who have a small loan for their scheme;
- Slaithwaite who anticipated securing a private loan from a supporter and another from Key Fund Yorkshire.

Equity

Community Shares (2009d:1) describes this as “Investment in return for shares that gives shareholders legal rights over the organisation. These rights may include a right to receive interest on the investment and/or a dividend, as well as the right to vote on issues affecting the organisation. The organisation is usually under no obligation to refund shares, although it is a matter of good practice to ensure that shareholders can sell their shares, or withdraw their investment under agreed terms and conditions. Equity investment is fully at risk;

ordinary shareholders are the last in the line of creditors should the organisation be declared bankrupt.”

As highlighted above, the case studies show that equity approaches have been used by several projects, and the benefits that they can bring as discussed in detail in section 3.3.3. Equity finance is central to the Energy4All model and the approach taken by Water Power Enterprises, it was also used in standalone community approaches such as WOCR and Bro Dyfi. Table 9 gives some examples of the projects that have used equity finance. However, Community Shares (2009d) do identify some of the drawbacks with equity, including the fact that compared to some forms of finance, dividends or interest paid on this type of capital is not treated as a pre-tax expense. Also, share-based equity has organisational responsibilities that have a cost and time implication, including: providing members with an annual report; invitation to all General Meetings; an AGM; running ballots and votes; and maintaining an up-to-date register of shareholders.

3.3.2 Getting the Right Balance

As mentioned above, most projects will use a mix of different financing options, but getting the right mix and balance between the various sources is a key element to the success of a project and should be central to the business and capital planning process.

Community Shares (2009d) and Brown (2008) discuss this as ‘gearing’ which describes the ratio of debt (i.e. loans and other forms of borrowing) to the equity (share capital and reserves). Lenders will look at this ratio to inform their view on the security of any loan. Generally, if the ratio is less than one (borrowings are less than shareholder capital plus accumulated reserves) then the lending is secure and groups are more likely to be able to obtain a loan.

Clearly, for new enterprises which do not have reserves or other capital, lenders will be wary of providing finance or may set rates or conditions that make the debt expensive to take on. This is why grants and share capital can be so important in getting a project off the ground as they can open up opportunities to utilise debt finance. It is also why the Government has promoted the development of Community Development Finance Institutions (CDFIs), which specialise in making unsecured loans to social enterprises in disadvantaged communities.

Community Shares (2009d) suggest that debt can be advantageous over equity because of its speed and flexibility, especially for low-g geared organisations who can generally obtain it as or when needed. This debt can be short term, therefore low cost, and this compares to the long-term commitment of equity and its ongoing costs.

In looking at the case studies, a summary of funding sources they have used in terms of both percentages and a gearing ratio can be examined² – table 9. It can be seen that the ratios have all tended to be quite low, with the two Energy4All co-operatives, Westmill and Fens, being the highest, possibly because the scale of these schemes are for all intents commercial and proven to be very viable economically. Even higher levels of debt finance are starting to emerge; a conversation with Community Energy Scotland suggests that the latest two large-scale community wind projects that have both just started operation last month in Westray and on the Isle of Tiree, using 900 kW turbines, have gearing ratios of

² . These figures are only illustrative - it has not been possible to get definitive costs for many of these projects as different case studies have presented different numbers. All numbers are also rounded.

1:0.77 and 1:0.95 respectively. Both these schemes were also able to draw down very significant funding from the National Lottery's 'Growing Community Assets' fund.

Project	Total Cost	Funding Sources	Suggested Gearing	
			Percentage	Ratio
Bro Dyfi	£79k	Grants: 44k Debt: 12k Equity: 23k	56% 15% 29%	1:0.18
Fens Co-operative	£4.4m	Grants: £50k Debt: £1.69m Equity: £2.66m	1% 38% 61%	1:0.62
Gigha Community Wind	£440k	Grants:£172k Debt:£148k Equity: £120k	39% 34% 27%	1:0.5
Torrs Hydro	£226k	Grants:100k Debt:£26k Equity: 100k	44% 12% 44%	1:0.13
Westmill Co-op	£8m	Grants: £50k Debt: £3.4m Equity: £4.6m	- 42.5% 57.5%	1:0.75
Slaithwaite Co-op	£43k	Grants:20k Debt:£8k Equity: 15k	47% 18% 35%	1:0.23

Table 9: Suggested Finance Split and Gearing Ratios

3.3.3 Why Shares

The various financing options discussed so far show that raising capital through share based community investment is common in many social enterprises, including energy projects. Following the discussion on gearing, it is also clear that for some ventures, share capital provides both a way to raise finance in its own right and plays a bigger role in enabling debt finance to be secured on the back of it. This can make the capitalisation of an organisation or project more effective. Whilst as already highlighted, the order of preference for financing is generally grants, followed by equity and then debt, Community Shares (2009d:5) suggest that reality for most means the right mix of capital tends to be "part accumulated reserves, part equity, part debt, and, if available, part grants, gifts and donations".

Community Shares (2009d) and Brown (2008) highlight that in addition to providing equity, share based capital can also offer a further range of benefits that will be attractive for social and community enterprises:

- A way of engaging supporters, making them members and part-owners of the organisation.
- Unlike loans, it is permanent capital, which is not redeemable by a fixed date.
- The interest paid is usually limited and subject to the organisation's ability to pay.
- If shareholders consent, there is no need for the organisation to be highly profitable, because it does not have to repay borrowed capital, or even build up reserves.
- It provides new ventures with the time to establish and consolidate a successful business model and aligns organisational and investor commitment to the long-term future.
- It can harness the collective investment power of whole communities, often using small sums to raise large amounts of capital.
- It may help to overcome the likely squeeze on the public funding sources and the increased competition for grants that will result.

For some groups there will also be a wider range of considerations that encourage them to go down a share based capitalisation route and this often relates back to the underlying purpose and objectives of an enterprise. Some share based schemes happen in response to specific local needs, such as the loss of facilities or services, but others come about because of a desire for communities to act for the sake of improving their local community or to deal with specific concerns such as climate change or peak oil. Often within those developing initiatives in response to such issues is a desire and belief in the role of collective action based on principles of democracy, participation, mutual support and transparency. In these instances, share based approaches will be a much more attractive route to delivery because of their ability to support wider objectives. Some of the wider discussions are picked up by Grindey (2009), who suggests community shares and bonds, in addition to the bullets above, can help a project and community by increasing the sustainability of communities, improving local cohesion and enabling them to have more influence.

- Increased customer loyalty: people that invest in a local business tend to become more interested in ensuring its survival. This can mean it becomes more widely used and is likely to be more responsive to meeting local needs, further increasing revenue.
- Saving local services: equity schemes have been commonly used to save facilities such as shops, post offices and pubs. This has the added benefit of keeping money within the local community and supporting employment and more affordable facilities and services.
- Contributing to vibrant communities: buying into local ventures can create a long term relationship, with investors often becoming more involved in other aspects of a venture. This can include increased participation through volunteering time, skills and expertise.
- Encouraging local innovation: local communities often understand what they need far more than outside funders, enabling more innovative projects to be developed that are not restricted by outside funders' priorities.

3.3.4 Scotland

Whilst this report has not considered the range of different legal structures in any detail beyond those relating to shares, the approaches being taken in Scotland warrant some discussion. This is partly because they have a wide range of examples of community-owned renewables compared to the rest of the UK and interestingly, very few examples of projects using a share based approach. Even those co-operatives that do exist appear to be part of Energy4All. In some respects this cuts across some of the broad assumptions just made, because it is clear that the community schemes in Scotland are bringing a wide range of benefits, not just in terms of income, but issues like inclusion, control, etc. This shows that some of the benefits discussed in the previous section can also be achieved through other models that do not rely on community investment.

Many of the examples in Scotland appear to be tied to trading subsidiaries of community development trusts. These tend to be limited companies, although the exact format is not immediately apparent in most case studies. It appears to include not-for-profit companies limited by guarantee and community investment company structures. These are owned by the development trust and the profits go back into supporting the wider social-economic regeneration goals they have. In some respects these structures are a means to an end, enabling them to overcome the issues that charitable status of the trusts have with revenue generating projects.

It is not immediately apparent why share based approaches have not been used. It seems likely that part of this may relate to the grant funding and support, that has consistently been available, that can enable larger community projects secure debt finance (see 1.3). There may also be historic reasons, perhaps linking to the community buy-out of islands and land and the creation of local development trusts. Community Energy Scotland also suggest that the creation of Community Development Plans may have been a catalyst for many projects as communities considered ways to regenerate their communities, or responded to the lead being taken by others such as Gigha, the Isle of Eigg and FREE, who have shown what can be achieved and to what benefit. All of the approaches have in common a strong 'community of geography' approach in which the community leads the project and gets all the benefit from it. This may also be an underlying reason for not taking a co-operative share based approach in which the members are not necessarily local and the majority of benefits tend to go to the individual members in the form of dividends/interest payments. However, there is a recognition that grant funding may become more difficult to secure in the long term meaning that discussions are starting to take place on the role that share based equity may play in future Scottish community renewables.

4. Use of Income

4.1 How are Funds from Community-owned Renewable Energy Projects used?

The case studies show that communities with revenue generating projects use their income for a wide range of purposes. As with many other aspects, this appears to be very project specific, depending on: the model and financing route taken to develop the scheme; the need or desire addressed by the project; the way in which projects scale up or grow either in ambition or general remit; what benefits the project aims to provide and to whom. The table below provides a summary of some of the ways that projects are using their income. As with other variables, many projects demonstrate multiple uses of income.

Use of Income	Examples
Servicing the capital finance linked to a scheme	Some schemes have raised debt that need to be paid off from the income the schemes generate. Examples include: <ul style="list-style-type: none"> • FREE, who have a £2.5 million mortgage agreement with the wind developer, which they are paying off over 15 years. • Gigha, whose finance package include a £120k equity holding from Highlands & Islands Enterprise which they intend to buy back; and a £120k commercial loan that is being repaid over five years. • Knoydart Hydro is repaying its parent organisation the money they invested within the system.
Building sink funds to replace equipment and ensure long term sustainability	Several schemes plan to set aside a percentage of their income to enable them to replace the installed equipment in the future. Examples include: <ul style="list-style-type: none"> • Gigha, who will need to replace their second hand turbines. • Isle of Eigg who have set their electricity sale price at a level to ensure they can maintain and replace their technologies, to ensure the long term sustainability of the system. • Knoydart Hydro plans to use its surplus income to upgrade its distribution system.
Creating revolving funds to support further projects	Some schemes are using their income to enable further projects to happen through a revolving fund model. For example: <ul style="list-style-type: none"> • The Green Valleys micro hydro scheme relies on the income from installations to support further micro hydro installations. • WOCR is using part of the income from its projects to support householders who want to retrofit their properties with local carbon technologies and to fund other large scale income generating renewables.
Distribution of dividends to share holders	Some of the share based schemes use their income to provide dividends to their investors. This includes: <ul style="list-style-type: none"> • Baywind, the Fens Co-operative and Bro Dyfi who all have individual investors. • Gigha who are paying a 6% dividend to Highland and Islands Enterprise on their equity investment, until they buy back this share.
Providing funds for the benefit of local communities	<ul style="list-style-type: none"> • Baywind and Fens Co-op also provide a small percentage of their profits to community benefit funds that supports a wider range of local projects. • Bro Dyfi put 50% of their profits into a local fund to support energy efficiency work in the area.
Providing an income stream for wider socio-economic drivers within the area	This and the next area are closely interrelated. Many schemes use some of their income to support a much wider range on local initiatives. For example: <ul style="list-style-type: none"> • FREE uses part of its income to support a range of local projects within the village including projects around micro-renewables, energy efficiency and transport. • Gigha have used their income to help support the broad socio-economic regeneration of their island, including employment. • Isle of Eigg have used some of their income to improve the insulation of

	<p>homes and support local food and low carbon transport schemes</p> <ul style="list-style-type: none"> • Torrs Hydro uses its income to support regeneration projects in the New Mills area. • WOCR use part of their income to support the wider remit of Low Carbon West Oxford
Covering operation costs and/or creating local employment	<p>All projects require ongoing maintenance and operation and some use their income to support local employment in these areas. Examples include:</p> <ul style="list-style-type: none"> • Isle of Eigg has trained local people to operate and maintain their system. • Knoydart Hydro uses their income to pay the wages associated with maintenance and operation. • Kielder Biomass covers operational costs, provides employment and supports the local forestry industry.

Table 10: Examples of Income Use

4.2 What Research has been done into the Success of Revolving Funds?

The brief for this work makes it clear that an intrinsic part of the CPC proposal is the creation of a revolving fund which can be used to encourage further projects. This and the next question consider what research and evidence exists for this financial mechanism.

Revolving funds appear to be widely used by local authorities to support a range of objectives. Surprisingly, given their use and the levels of money sometimes involved, relatively little evaluation appears to have been carried out. In the early days of energy efficiency, linked to the Home Energy Conservation Act, many local authorities developed no or low interest loan schemes, often to encourage investment within the owner occupier and private rented sectors. Many of these used HECAction funding from the Energy Saving Trust (EST), matched with their own resources and/or that of suppliers to provide pots of money for the loans (EST 2002). Some of these were diminishing resources which served a purpose and whose funding was distributed on a first come, first served, basis. Often the repayments of these loans would go back into general local authority funds. However, some local authorities saw the potential for making this process more sustainable, by ring-fencing the loan repayments to enable ongoing loans or other energy work. In simple terms, this is the basis of a revolving fund.

Revolving funds enable money to go much further as it is repeatedly recycled, whilst giving some protection from budget cuts. They can offer good value once established, as they can continue to enable CO₂ and financial savings (CLASP 2009). They are also referred to by some as 'invest to save' or 'spend to save' funds.

Revolving funds are often promoted by those organisations that aim to support best practice, such as the Local Government Association and the Improvement and Development Agency, or in organisations that are trying to encourage local authorities to improve their delivery on certain issues, for example the Sustainable Development Commission (SDC) and the EST. Often these organisations work together on specific resources. References to their use have included:

- The LGA (2005) who in discussing local authorities roles within climate change suggest a 'whole life' approach to investment, using revolving funds to pay upfront for sustainable energy measures, reinvesting the savings achieved into further projects.

- In a later resource, the LGA (2007) highlight how many council's are undertaking action to reduce carbon through their own operations by making use of revolving loan funds linked to a scheme from the Carbon Trust and Salix Finance Ltd.
- The SDC (2007) web based 'financing local futures' resource encourages those involved in local government financial decision-making to develop their organisations' contribution to sustainable development; and puts forward the use of revolving funds as a possible finance mechanism. They highlight that sustainability projects can require large, upfront costs which pay back in the medium to long term and point out how the widely used approach of invest-to-save can enable these investments to give financial, environmental and social benefits. They put forward ring-fenced revolving loan funds as one mechanism, highlighting how the costs are recouped from future savings and the ability of such funds to be self-sustaining.

In addition to the LGA and SDC, the Salix Finance initiative is mentioned by many local authorities. This scheme provided interest-free match funding to the public sector to invest in energy efficiency measures and technologies that reduce carbon emissions. Typical fund sizes were around £250,000, but could be as high as £500,000 and were open to Local Authorities, NHS Foundations and Higher Education. The funding from Salix had to be matched by the public sector organisation, with the combined funding being ring-fenced into a fund to spend on proven energy saving technologies with a payback of no more than five years. Money from the energy savings achieved would then be returned to the fund until the investment was repaid. After that any savings were kept by the organisation. As long as the energy saving targets are achieved, the funding from Salix did not need to be re-paid.

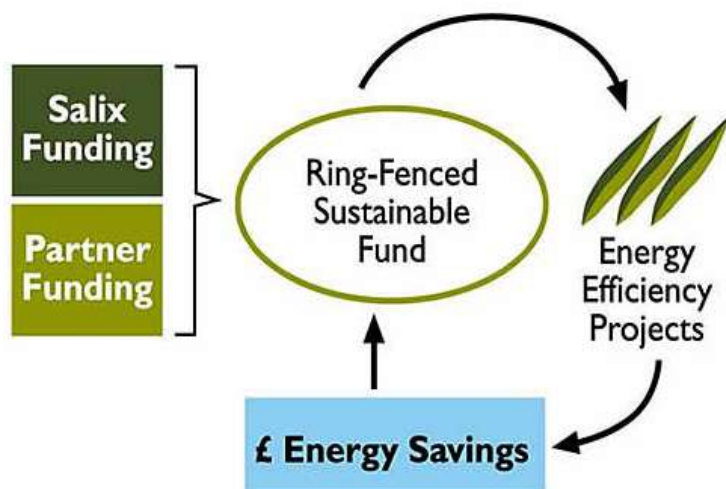


Figure 4: Salix Revolving Fund Model

Source:
<http://www.salixfinance.co.uk/recyclingfund.html>

A summary of the development and use of revolving funds has been produced by CLASP (2009), in relation to meeting NI 186 targets. They strongly recommend their use and provide a step by step guide for setting up both internal funds for capital expenditure on public estates and external funds aimed at the domestic sector. The EST (2006) also has a briefing note on 'setting up a private sector loan scheme'. Combined, these two resources set out some of the key considerations for loan based revolving funds including legal considerations, what to fund, and how to manage them. Both resources include a number of examples of the type of schemes that have been set up, summarised in table 11.

Chichester District Council Source: EST (2006)	Offered up to £5,000 in interest free loans for solar hot water under a scheme called Renewable. Using the accredited products list from the Government's Low Carbon Buildings Programme, the scheme allowed home owners and private landlords to repay a loan over one to three years. http://www.chichester.gov.uk/index.cfm?articleid=12286
Guildford Borough Council Source: EST (2006)	Set up solar loan scheme by using money from the council's Home Improvement Budget. It appears from the Guildford website that they later replaced or developed this scheme to support a wider range of renewable technologies, with loans on offer of up to £3,000. http://www.guildford.gov.uk/GuildfordWeb/Housing/PrivateSector/Grants/RenewableTechnologyGrants.htm
North Cornwall District Council Source: EST (2006)	Used the Regulatory Reform Order to offer zero interest loans to private landlords for energy efficiency, which were repayable only if the property ceased to be rented out. Secured £37,500 per annum from Private Sector Renewal funding for the loans. HIA Anchor administered the scheme. From an original pot of £95,000, over £190,000 was lent, with no cases of bad debt. It was a diminishing pot because Anchor took a 10% fee for each completed loan.
Knowsley Council Source: CLASP (2009)	Set up with £200,000 in 1999 by the energy manager. Since then it has provided interest free loans for over 100 projects to install heating, lighting and water controls and other projects in the council's buildings. It takes around 2% of manager's time to run the scheme and is based on projects with a maximum 5 year payback. It allows the building operators to benefit from immediate savings and usually the annual amount repaid is less than the annual financial benefit gained.
Fylde Coast Energy Credit Union Source: CLASP (2009)	Blackpool, Fylde and Wyre Councils set up a joint credit union, hosted by Blackpool Council. With seed funding, the credit union will be providing very low cost loans to residents to pay for energy efficiency improvements, allowing them to spread the cost into affordable amounts with help from the savings made in their energy bills. The scheme was initially available to 15,000 employees of organisations who are members of the credit union and will then be rolled out to other recipients. It will include loft and cavity wall insulation, boiler and heating control replacement, as well as help for hard to treat homes.
Leicester City Council Source: CLASP (2009)	Leicester City Council provides a range of loans for the private and social housing sectors for energy efficiency and renewable energy: <ul style="list-style-type: none"> Leicester Loan: pot of £45,000, loaning up to £3,000 (90% max) for central heating systems over a five year period (pay back initially £600 then £56 a month). Energy Vision Leicestershire: pot of £90,000, loaning up to £3,000 (75% max) for central heating systems over two years. Leicester Solar Fund: pot of £40,000, using mix of grant-loans with EST and local solar hot water/PV supplier.
Kirklees Council Sources: LGA (2007); LGA (2008); CLASP (2009).	Kirklees are mentioned in many documents and have clearly developed a range of schemes linked to revolving loans. These include: <ul style="list-style-type: none"> An ESCo approach with revolving loan funds to enable installation of energy efficiency and renewables measures in the homes of local residents (LGA 2007). In August 2008 they launched the RE-Charge scheme, offering householders interest-free loans to install renewable and low carbon technologies on their property. Loans of up to £10,000 can cover a range of technologies. A condition of the scheme is that, if suitable, the home has loft and cavity wall insulation before the installation of renewable or low carbon technology. They have set aside £3 million to meet the costs of RE-Charge (LGA 2008). RE-Charge has complemented their Warmzone insulation to fund renewable energy schemes for home owners. Loans are made against the property, with repayments made when the house is sold (CLASP 2009).
Manchester City Council Source: CLASP (2009)	Began their scheme with £175k from HECAction funding and Manchester's capital programme. It is administered in partnership with Manchester Care and Repair. It provides interest free loans for homeowners and landlords to a maximum of £5,000 or up to £7,000 with a 'case conference'. So far, 412 loans have been made funding 437 measures to a value of £976,600.

Table: 11 Examples of Local Authority Revolving Loan Funds

With the exception of Knowsley, all the schemes above use revolving funds to target individual households. They provide useful evidence for how schemes can work, which many local authorities are likely to be happy to share. They indicate that revolving funds are widely used for energy related projects and internet searches also show that many more local authorities have used revolving funds to support work in other areas. Much of this could change in the future as the Government appears to be mainstreaming such approaches through their growing interest in invest to save type schemes, linking to new obligations on energy companies at the end of CERT, the introduction of Pay As You Save and by increasing consumer support (HMG 2010). However, these are not likely to benefit community-led renewable projects.

New initiatives and approaches are also emerging. Forum for the Future (2009a) produced Smarter Finance to find new ways of financing carbon savings in the public sector. They looked at over 60 case studies of financial models used by local authorities to put forward five funding models for financing carbon savings. They cite the Kirklees RE-Charge scheme, amongst others, suggesting that such revolving loan based models are three times more effective than grants. Their primary recommendations suggest, that of the five funding models they examined, revolving loans are one of the most widely used approaches. The report is linked to their Climate Finance support programme which has since recruited five organisations (including Low Carbon West Oxford) whom they will support over the next two years to get their own smart finance initiatives off the ground (Forum for the Future 2009b).

There are fewer examples of revolving funds that link closely with community renewables. The 2007 Energy White Paper highlights how One NorthEast and Yorkshire Forward funded community based projects through a Community Interest Company. It was funded using £4 million from private and public sector contributions, to assist around 4,000 households in fuel poverty with gas network extensions and the installation of renewables (HMG 2007). It appears that this project may have led to a scheme now being promoted by CO2Sense called the 'Renewable Energy Programme'. This promotes renewable energy in the Northeast and offers funding towards grid connected: 'emerging technologies; community-owned renewables; and flagship projects'. Its preferred method of funding is either a loan from £20,000 up to a maximum of £200,000, repayable with a commercial rate of interest; or for up to £750,000 investment, the purchase of a share of future revenue, for a limited period. Revenue received from these awards will be re-invested in further renewable energy projects in the region (CO2Sense 2010).

Another example, cited by Walker (2008) was from Highlands and Islands Enterprise's Community Energy Company which used a revolving fund for community enterprises. One of their investments was the Gigha wind project, which provided a 6% annual dividend back to H&IE on their investment, with the capital being bought back by Gigha within five years. He suggests that similar projects have been set up through the same arrangement and their annual report seems to show a target of four by March 2007 (HIE 2006). However, the Community Energy Company has since become Community Energy Scotland and it has not been possible to find any further reference to this fund. As described in section 1.3, it appears that their approach is more focussed to providing support and grant funding to enable larger community based projects to get to the point where they can access commercial finance.

As well as all the above approaches, there are a rapidly increasing number of examples from communities themselves, particularly in relation to renewable energy. This appears to relate to a range of drivers, including: a desire to take action on energy and regeneration; increasing support and interest in community renewables such from NESTA and DECC; and the introduction of FiTs that have removed some of the risk and made the level of returns more attractive for many renewables. As Houghton (2010:17) highlights, one of the positive factors supporting community led initiatives is their potential to create independent income streams: “The concept is simple, a community develops a renewable energy scheme (helping to cut carbon emissions) and makes money from energy sales, that revenue is then available to fund further carbon emission reduction measures in homes, businesses and community buildings”.

There are already a large range of community-owned renewable projects within Scotland, and an increasing number developing elsewhere in the UK. Many of the projects funded by NESTA and DECC plan to make use of revolving funds³, table 12; most are at the early stages of development and as such evidence is yet to emerge on their design or success. Given the dispensation that DECC has allowed projects, in terms of receiving grant funding and being able to claim income from FiTs and the RHI, it is clear they are interested in the financial models that may emerge from these pilots (DECC 2010b). As one of the pilots, CEP is in a good position to network with the other projects to find out more about the approaches they are taking; and having spoken to Carbon Leapfrog it is also clear that this organisation is helping several projects to develop their models and it may also be worthwhile to formally contact them, if this has not already happened.

Programme	Projects
NESTA Big Green Challenge	<ul style="list-style-type: none"> • The Green Valleys – Brecon Beacons • Isle of Eigg Heritage Trust – Isle of Eigg • Low Carbon West Oxford - Oxford • The Meadows Ozone Community Energy Company - Nottingham
DECC Low Carbon Communities Challenge	<ul style="list-style-type: none"> • West Oxford Community Renewables - Oxford • Ellen MacArthur Foundation - Isle of Wight • Norfolk CC - Norfolk • Transition Town Totnes - Devon • Haringey Council and the Muswell Hill Low Carbon Zone - London • Berwick Core Ltd - Berwick upon Tweed • Hook Norton - Oxfordshire • Halton - Lancaster • Exmoor National Park - Somerset and Devon • Ladock and Grampound Road - Cornwall • Awel Aman Tawe Community Wind Farm - South Wales • Glogue, Hermon and Llanfyrnach - Pembrokeshire

Table 12: Projects Potentially Developing Revolving/Community Funds

4.3 Is there a Minimum Amount required to make a Revolving Pot Work?

It has not been possible to identify what the minimum amount of funding is required to make a revolving pot work. This will vary considerably between schemes, but could be modelled relatively easily based on the costs and anticipated repayments that projects supported

³ This is based on the simple web-based summaries each project provided for these programmes.

through a revolving fund would face. Some of the issues that would need to be considered are set out by EST (2006) and CLASP (2009) and include considerations such as:

- The initial starting capital within the fund.
- The level of loans that are going to be offered to projects.
- The amount of time the money is allowed out on loan.
- The percentage of the total fund that is out on loan.
- The interest level set on repayments.
- What level of interest is gained on the money that remains within the fund.
- What the administration costs of running the loan fund are and how these are covered.

An example of what might be a minimum useful size of loan fund is given by CLASP (2009). This is reproduced in full below in figure 5, but it should be borne in mind that this is for a household based approach, lending small amounts of capital for small scale works. Looking at the programmes mentioned in table 11, the amount of money in loan funds ranged from £40,000 to £3 million, but again these are all aimed at household level works. The only scheme that includes community renewables where it has been possible to find figures is the CO2sense funding, which has a total pot of £4.6 million for anywhere between £20,000 and £750,000 investment, depending on the route taken. If CEP require detailed evidence of the amount of money needed to make revolving funds work, it will be necessary to interview those involved with some of these schemes to better understand the relationships between total capital and the bullet points above. Alternatively, contacting Carbon Leapfrog, some of the other DECC pilots or using the support offered by the Office of the Third Sector's Social Enterprise Action Research programme (that has been offered to the LCCC winning communities), may give access to the modelling that some of these pilots have presumably carried out in the design of their revolving funds.

Fact Box

What's the minimum useful size for a loan fund? Effective funds have been set up with £50,000. A fund of £90,000 would provide 27 loans for central heating immediately (based on cost of £3,300 per house). Repayments each month + interest on fund balance on these could provide funding for two or three more loans thereafter.

Example - Leicester Loan

Installation total cost		£3,300.00
Client's contribution on completion		£300.00
90% loan	=	£3,000.00
Pay back over five years	=	£50.00 per month

Interest free loan schemes slowly lose money over time, because there's usually a 5% fee on the credit check, but it's small, only around £150 - so there is a very gradual rate of attrition on the capital. In the past, when bank interest rates were high, interest on the fund (if it was a slow month) would replace this attrition. Additional funding can be found to add to the pot if necessary.

Figure 5: Revolving Loan Example

Source: CLASP (2009:7)

5. Conclusions

Community renewables appears to be coming of age, with the alignment of a wide range of objectives from lots of different sectors and a strong drive from communities themselves to take action. This report has identified projects that vary considerably in their purpose, approach and benefits. Collectively they demonstrate the breadth of action that is taking place, highlighting the principal issues and lessons that have emerged, across the areas CEP are interested in.

5.1 The Evidence Base

There is a considerable amount of evidence to demonstrate the need for community-owned renewable energy projects. This includes the wide range of community projects that are already established and the new ones that are emerging, alongside the high level of demand shown for funding and competition programmes. National surveys consistently show high levels of support for renewable energy and a willingness to be involved with local projects, echoed by CPC's own evidence within Cornwall. This demand from communities is increasingly being matched by a push from Government and its agencies, who recognise the important role that community-led approaches can play in helping to deliver national, regional and local targets. This alignment can result in effective delivery partnerships that enable a wide range of benefits to be gained and objectives to be met.

There are some known barriers to the development of community-led renewable projects, which policy has started to address and support can help overcome. These aside, the evidence suggests that community renewables can and do bring a number of benefits for communities themselves, from meeting local needs and desires to raising a sustainable income stream. Alongside these, wider benefits can be gained such as increasing acceptance and planning permission, through to the delivery of targets. Comparing the advantages community approaches offer against more commercial schemes can be subjective because of the great variety of projects, communities and perceived benefits that exist, which change between the actors involved and the communities themselves. However, for those communities that are willing and able to act, it appears from the evidence that in most instances a community-led scheme will result in a wider range of benefits for local people and these appear to increase with local ownership.

The case studies used within this report provide examples of some of the notable successes, based upon different models, technologies and scales, there are many more available. Finding evidence for failed approaches has been more difficult, but what does exist seems to point towards wider systemic failures within the support for community renewables. The approach in Scotland of providing consistent support and funding has shown what is possible, enabling community renewables to flourish, whilst helping to identify what some of the key factors to success are. One of the main findings from all these examples is that communities need the flexibility to create projects that are most appropriate to their local circumstances.

This diversity in approaches means that there is no clear evidence on which technology is most successful, although wind projects do feature strongly in many examples. This may in part relate to its maturity and its ability to generate large income streams in comparison to other technologies. Though this is site and project specific, and many communities have

used other technologies such as hydro, and to a lesser extent solar and biomass. In relation to scale there is an even greater diversity of approaches and no obvious best approach. Projects range from small building-integrated community renewables through to commercial co-operatively owned wind turbines. In considering the economies of scale, it becomes apparent that the larger schemes, like Energy4All, are made possible through a 'community of interest' approach, whereas the smaller scale approaches tend to be designed to meet specific local needs and are generally linked to 'communities of geography'. Both the choice of technology and the scale of its use may well change as a result of the introduction of FiTs and the RHI, as communities become more ambitious or as commercial developers or new entrants seek to capitalise on the returns that they can offer.

Generally rural communities are more open to the development of renewable energy and more accepting of larger scale schemes. This may be because most renewables projects have been developed within rural areas, linking to the fact that the range of opportunities are greater and the levels of constraints are lower, compared to urban areas. It has also been in response to specific issues such as unreliable energy supplies, high energy costs, efforts to reduce levels of poverty and a desire to support wider regeneration goals. Revenue generating community renewables can play an important role in helping to create sustainable rural communities and if they also help to address some of these broader issues, they may be able to access grant funding. However, lower incomes in rural areas may also be a barrier for projects seeking to raise share capital as people may not be able to invest in a local renewable scheme. Using a wider catchment or a 'community of interest' would help overcome this, although this should be done in a way that still ensures that some local benefits are provided. FiTs may also impact rural community renewable projects, as some people with capital may prefer to install equipment on their own home or they may encourage farmers and landowners to put up their own turbines, rather than being involved with a community scheme.

Key Findings from the Evidence

- Community-owned renewables can meet local needs and wider energy, climate and sustainability goals and they should be encouraged.
- Community-led renewables and more commercial approaches can both bring a wide range of benefits, which vary greatly from project to project. However, in most instances the level of local benefit appears to increase in those schemes that are led by and/or owned by, the local community.
- There is no one right approach or model for community-owned renewables. The evidence provides a wide range of examples and a number of lessons for encouraging success. This includes the provision of funding and support to help overcome capacity issues, but most importantly enabling communities to find the most appropriate approach for their local circumstances.
- Communities based on geography tend to choose the most appropriate technology and scale to meet their local needs, whereas, 'communities of interest' appear to be linked to larger, more commercial scale projects and technologies, most notably wind. There is space for both approaches as a community's interest and willingness to engage with renewables will vary considerably from location to location.
- The introduction of FiTs and the RHI may change the way in which communities choose and scale technologies and they may also result in more commercial companies seeking to establish community scale renewable projects. The FiTs may also have a wider

impact on the development of community renewables, by either making them more economically attractive or by encouraging people or landowners to go it alone.

- Generally the acceptance of, and interest in, renewable energy will be higher in rural areas.
- Community-owned renewables will be attractive to many because of the socio-economic benefits they can bring, giving revenue generating schemes an important role in helping to create sustainable rural communities. It may also be easier to secure grant funding for rural projects; although poverty and deprivation may also mean that share based schemes may struggle to raise sufficient capital.
- In terms of CPC, the evidence shows that the development of this organisation could play an important role in helping to create more locally based community renewable projects. However, consideration should be given to ensuring a flexible approach that enables communities to develop a model and approach that is suitable for their own needs. It should also take account of some of the issues relating to the rural nature of Cornwall.

5.2 Growth and Replication

There is strong potential and much evidence to demonstrate how growth and replication can and does occur within community-owned renewable projects. This particularly seems to be the case for larger revenue generating schemes.

Growth and replication happens for many reasons and in a number of different ways. Nearly all projects examined showed at least one, and often several ways of scaling up their activity including the range of issues addressed; the scale or type of technologies used; and the capacity of those involved. Replication is also common within community-led renewables and can include: the use of particular models; the structure of funding; and the method of delivery. This can happen spontaneously from the communities themselves wishing to publicise and share their expertise and knowledge, and through new communities approaching existing projects directly; as well as being supported and facilitated by other organisations.

As within the previous section, allowing communities to find their own solutions to local problems rather than promoting one particular model appears to be an important element in growth and replication.

Key Findings for Growth and Replication

- It is important to enable communities to develop and deliver their own solutions and to learn from each other.
- This should be supported through communication, sharing experience, expertise and knowledge.
- It should not be assumed that a successful approach or model in one community will work within another.
- The proposed CPC structure should in some respects be able to effectively facilitate the sharing of experience and knowledge to enable other projects to replicate their approach. However, care will be needed in making this process flexible.

5.3 Financing

Community-owned renewables can be financed in a wide variety of ways, although this report has specifically looked at share based equity, which is a well established means of raising capital within community enterprises. Interest and use of this approach to securing capital has increased dramatically in recent years as communities seek to save local facilities and respond to bigger issues such as climate change. There are several examples of community-owned renewable projects making use of share based equity.

The actual process of raising share capital from a community is well understood, if somewhat overcomplicated by the different models and different views about which approach is best and why. A key consideration is getting the right legal structure in place and this will depend on a number of project specific factors such as the type of project, its scale and what benefits will be passed back to the community. There is no right or wrong approach to the legal structure of the organisation, although it is clear for projects that intend to raise share capital an IPS co-operative or community benefit society is the model of choice. This relates in part to the less burdensome regulatory and legal requirements for these structures and links back to wider issues such as what sort of organisation people want to be involved with and what benefits they will gain.

There are several good resources that set out what the key considerations are for legal structures and the process of running a share issue, there are also example share offers available and a range of organisations can provide support. Key areas that need to be considered include those relating to the model adopted by the organisation itself, such as: the legal structure; business and finance model; identifying the levels of risk involved; deciding on the policy on investor returns; and the position on tax relief. There are also wider considerations that help shape the organisation, such as: the type of share capital that's issued; the policies for membership; the minimum number of share that can be purchased; and deciding on the most appropriate level of democracy for voting and decision making. All of these are defined by the legal rules adopted by the organisation and many projects use 'model rules'.

Organisations can access a range of different sorts of capital, which in order of preference would normally include grants, equity and then debt; although a mix of all three will generally be required. Getting the mix right is an important part of the capitalisation plan for any project and a gearing ratio of less than one, in terms of debt to equity, will be essential for securing finance, particularly on favourable terms. The case studies show low levels of gearing in most cases, as grants and share capital have tended to provide around 60% to 80% of total capital costs. Share capital plays an important role in helping an organisation lever debt and other funding, including grants.

In addition to helping secure other funding, share equity has a range of other advantages linked to financial considerations, such as the fact it is permanent capital that is not redeemable by a fixed date and the interest on it can be set by the organisation. Share based approaches also bring much wider benefits linked to ownership, organisation management, and long term security. The fact the share holders have a stake in the organisation also means that there is a greater level of participation and democracy.

Whilst IPS structures have become common in many community-owned renewables, their use in Scotland is low. Here there is a preference for trading companies linked to community

development trusts that have charitable status. This in part appears to link to historical developments, but it has also enabled them to develop models that do not rely on individual shareholders, helping them to ensure that all of the benefits of a project, including income generation, go back into a community as a whole, rather than to individuals.

Key Findings on Share Based Finance

- There are many ways to raise capital, which in order of preference includes grants, equity and then debt, although a mix is generally required.
- Getting a good gearing ratio between debt and equity is an important factor in the success of projects raising capital and most projects appear to secure around two thirds of their capital from grants and equity and the rest from debt finance, although some of the more recent Scottish examples are nearer 50%.
- Projects raising capital through shares are becoming more common and this type of equity can bring a wide range of benefits, including: financial advantages; a way to engage a community and gain support; and the opportunity to create democratic organisations with high levels of participation and control that can help ensure benefits for the community.
- The right legal structure is essential and the evidence shows that IPS Co-operatives or Bencoms are the model of choice for community investment approaches. Of the examples within energy projects, co-operatives tend to provide financial benefits back to the individual investors, whereas Bencoms tend to deliver wider social returns for the community as a whole.
- As the approach in Scotland shows, there are other models that can allow community-ownership, without the need for individual share equity.
- Whilst recognising that things may have since developed, the underlying principals of CPC should be able to deliver a range of benefits to those that invest. Consideration will need to be given to raising capital within Cornwall, and how to ensure benefits for both investors and the local communities where a project is based. This can easily be designed into the model that is finally developed.

5.4 Use of Income

Projects have used their income for a wide range of different purposes and to deliver a number of broad benefits, which are very project specific. There appears to be clear split between those projects that have individual investors, in which the financial benefits go back to those shareholders, and those more community focussed projects that provide benefits back to the communities as a whole. These wider benefits include the support of a wide range of environmental, social and economic goals and often link to the long term sustainability of a scheme and its community.

Revolving funds are widely used, particularly by local authorities to support energy, climate and sustainability objectives. The principle is simply based on the fact that many projects face high upfront costs, but can provide long term benefits that include overall financial savings. By ring-fencing capital to support these projects it is possible to provide on-going funding through a revolving pot of money. This not only results in financial savings, but also in energy and carbon savings. It has been suggested that revolving funds are three times more effective than providing grants. Successes have included both projects aimed at the

public sectors own estates and schemes aimed at the domestic sector. A useful guide is available from the Northwest Climate Change Local Area Support Programme.

Examples of revolving funds linked to community renewables are less common but this is changing rapidly. One example of a large scale scheme is a £4.6 million pot in Yorkshire that can provide loans of up to £200,000 at a commercial rate of interest, or can offer more when a share of future revenue is agreed. Smaller scale examples, from communities themselves, are rapidly emerging with 16 possible examples of revolving community funds being used in the Big Green Challenge and LCCC. These have emerged most likely in response to the introduction of FiTs creating a predictable income stream and particularly in relation to a wider desire from communities to find long term, independent sources of sustainable income to meet their wider needs and regeneration goals.

It should be possible to approach some of these projects to find out more about what design and modelling they have done for these planned revolving funds. This may help indicate what level of funding is required to make a revolving pot successfully function, as it has not been possible to determine this from the funds that are in place. Although, in theory this could be modelled relatively easily by considering a range of key variables such as the size of fund, the conditions placed on loans and the management of the funding.

Key Findings on Income

- Revenue generation community-owned renewables include those that provide benefits for individuals and those that provide benefits to communities. These relate back to the model adopted and the purpose of the project.
- Schemes designed around communities provide a wide range of social, economic and environmental benefits, which are possible because of the independent sustainable income stream that community renewables can provide.
- The use of revolving funds is widespread and can enable long term financial and environmental savings, at a much greater level than grants can achieve. Providing the money is ring-fenced and non-diminishing they can also be sustainable in the long term.
- Using revolving funds to support community renewables is growing rapidly and evidence for their design and structure should soon be available.
- In terms of CPC, the use of a revolving fund could clearly play an important, if not vital, role in enabling the effective capitalisation of small scale renewable projects. However, this is one area where there seems to be differing understandings between those involved or aware of the project, and it would make sense to clarify and further research the use of a revolving fund in Cornwall. It could clearly be an important mechanism to enabling projects to happen.

Summary

Community renewable energy projects can bring a wide range of benefits to those communities that develop them, whilst supporting the delivery of national, regional and local targets for energy and climate change. In most instances, projects that are led and owned by the communities in which they are placed will deliver the biggest range of benefits. And these benefits seem to increase for those revenue-generating projects that are owned by the community as a whole, rather than individual shareholders.

It is clear that there is a strong desire from communities to take action, as demonstrated by the vast array of projects that are already up and running. This is also supported by several national surveys that show peoples' support for renewable energy projects and often show a willingness to be involved with them.

One of the central themes to emerge within this report is the great range of diversity shown by community renewable projects. This includes, amongst others, the technologies chosen, the scale of implementation, the reason for development, the actors involved, the model of ownership and the benefits that they bring. In some respects this makes it difficult to say clearly this is what works, and why. The main implication though, is that it cannot be assumed that what successfully works in one community, will work in another. Instead communities need to be supported and allowed the space to develop their own response to their own needs or reason to act. This will require flexible approaches to support and enable community-owned renewables to develop.

As a final point, it's important to bear in mind that many of the findings within this report are very subjective, as there are so many differing understandings of what defines a benefit or what a community-owned project is. This will vary between different actors including those within a specific community itself.

Community Power Cornwall

This report has not sought to evaluate, or make recommendations for, the proposed development of CPC, but it is clear many of the findings contained within can help to shape the development of this project, which can clearly play an important role in helping those communities that want to invest in a local scheme to do so. It is worth noting, that from speaking to several different people involved with CPC, and those aware of it, there does not seem to be a shared understanding about what it is and what it will offer. This should be addressed and include a clear framework between CEP and Kabin, and any other organisations that are central to the development of this idea. Given the rapidly changing landscape for community renewables, and wider changes in national and local policies, it may make sense to run a pilot of CPC to assess its potential impact.

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Annex 2: Community-owned Renewable Case Studies

Baywind

Sources of Information

- http://www.baywind.co.uk/baywind_home.asp
- TLT Solicitors (2007)

Summary of Project

- Baywind Energy Co-operative was formed in 1996
- Its owns turbines at Harlock Hill and one turbine at Haverigg II (a commercial wind farm)
- It has over 1,300 members, 60% of which are outside Cumbria

Reason Developed

- Followed successful approach pioneered in Scandinavia to establish a similar model in the UK.
- As well as establishing the co-operative wind ownership model, Baywind aims to promote the generation of renewable energy and energy conservation.

Benefits and Lessons

- All profits derived from electricity generation are paid back to the individual shareholders.
- Since beginning operation, returns on investment have averaged over 6% gross per annum which, along with the Government's Enterprise Investment Scheme, takes the total average return to 7.6% per annum for income tax payers.
- At the same time it has provided 0.5% of the annual cash income from the Harlock Hill scheme to fund energy saving measures for residents in the area of the site.
- Educational visits held for schools and adults.
- Increased awareness of environmental issues at the grass roots level.
- It has provided a co-operative approach that is commercially successful, that provides steady dividends and brings wider benefits to local communities.
- It was only able to secure 40% of its share capital locally, despite a desire to attract local members.

Scale

- Harlock Hill is a 2.5 MW wind farm, consisting of five 500kW turbines.
- Its one turbine at Haverigg II is rated at 600kW.

Costs and Funding Route

- Raised £1.2 million in first share issue and further £670,000 in second share issue.

Growth and Replication

- Baywind were keen to extend the co-operative ownership model to other areas of the UK and established Energy4All to achieve this.
- A further 6 co-operatives have been developed to date, with more in development. As additional co-ops are established they too will share in the ownership of Energy4All.
- They have also created a wind development steps website, to help guide other communities through the process of getting a wind energy project up and running.
- They recently launched Energy Prospects Co-op Ltd, a new Fund for Community Wind Farm Development.

Model

- Co-operative Industrial & Provident Society.

Use of Funding

- Income primarily goes towards individual share dividends.
- It also covers the costs of a full time administrator, pays into a fund to support local projects and covered the set up costs of Energy4All (through a reduced dividend payment in yr7).

Bro Dyfi

Sources of Information

- http://www.energy4all.co.uk/energy_aboutus.asp?ID=ABT1&catID=2
- <http://www.bdcrcr.org.uk/content/index.php>
- <http://www.ecodyfi.org.uk/energy/energybdcrcr.htm>

Summary of Project

- Small community-owned, community-led wind turbine in the Dulas Valley, Wales.
- Commissioned 75kW second-hand Vestas wind turbine in 2003 and later a 500kW turbine.
- The idea conceived by a few people living in Pantperthog village and the Centre for Alternative Technology (CAT) in October 1999.

Reason Developed

- Primary goal was to achieve reductions in carbon dioxide within the local community.
- Establish a community energy fund to invest in local energy saving measures.

Benefits and Lessons

- Local community carried out development work.
- Estimated to have put £55k into local economy through construction carried out via local consortium, administration and O&M contracts.
- Many of partners involved were paid in shares in project.
- All revenue from the project retained within the local economy.
- Took over 2 years to develop project.
- Interest spread by word of mouth and 75 people joined.
- 94% of the shareholders and beneficiaries live in the Dyfi Valley.

Scale

- Single 75kW turbine.
- Estimated to generate about 122MWh/yr (2005).

Costs and Funding Route

- Total cost £78,565 and annual running costs £2,300.
- Secured 55% of capital costs from ERDF grant (£23,569); Scottish Green Energy Trust (£10k); EST (£10k).
- Share issue raised over £23k and further funding from EST and Baywind was secured.
- Power Purchase Agreement set up with CAT for sale of power and later a new PPA was established with Good Energy that offered a better return.

Growth and Replication

- They went on to install a second 500kW wind turbine.
- Funded through £175,500 of shares made available to individuals plus EU funding via Mid Wales Energy Agency and Ecodyfi.

Model

- Co-operative Industrial and Provident Society.

Use of Funding

- Approximately 50% of the annual project profit goes into a community energy fund for energy efficiency measures.
- Balance covers operation and maintenance and annual dividends to shareholders.

Fens Co-operative

Sources of Information

- CSE (2009); www.fens.coop

Summary of Project

- Wind farm development comprising eight 2 MW turbines in Lincolnshire, operating since 2006.
- Local people given opportunity to directly invest via Energy4All model.

Reason Developed

- Commercial development, but the developer Wind Prospect, aims to balance benefits of wind with local environment and community concerns, which in this instance they did through the development of a liaison group during the consultation process.
- This group helped to inform the development of options for local ownership.

Benefits and Lessons

- Developer set up liaison group with community as part of consultation process.
- Resulted in community share issue being developed.
- The site has regular open days for the public and schools.
- Also established a local trust that received £30k at start-up and an ongoing £10k annually to fund local projects mainly around energy efficiency and conservation.

Scale

- Large wind – co-op owns two 2MW turbines.

Costs and Funding Route

- Social Enterprise East Midlands awarded Fens Co-op a development grant of £50,000 and the Co-op is also supported by the Lincolnshire Co-operative Development Agency and Lincolnshire Co-operative.
- Share offer raised £2.66 million, enough to purchase 2 of the turbines.
- Each shareholder invested an average of £2,400.
- The total cost of establishing the co-op was £4.4 million.

Growth and Replication

- Fenlands Co-op is part of Energy4All Co-operative.

Model

- Co-operative Industrial and Provident Society.

Use of Funding

- As well as the local fund, dividends are paid directly to the individual investors. This is likely to be in the 6-8% range that other Energy4All co-ops provide.

Fintry Renewable Energy Enterprise (FREE)

Sources of Information

- Adams (2008)
- <http://www.free-energy.org.uk/>

Summary of Project

- FREE is located in Stirlingshire and is the commercial arm of Fintry Development Trust.
- It has 150 members.
- Negotiated with developer of a local wind farm that an additional turbine be included for the village as part of the development.

Reason Developed

- Wind farm coming anyway, so wanted to capitalise on it, rather than just oppose.
- Their aim is to reduce energy use in the village, with the ultimately goal of making the village a zero-carbon, zero-waste community.

Benefits and Lessons

- Proactive response to commercial wind development.
- Got good initial buy-in from local community (150 members from population of 500).
- Innovative finance model and range of projects since developed.
- Supporting other villages which have wind farms planned – similar model.
- First obvious example of this sort of community-led commercial wind partnership.
- Income use for a variety of local projects including the insulation of homes and provision of grants to sports club, school and village hall. Further insulation work is planned.
- Developed FRESCo (micro-renewables) financial model & FEET (Fintry Energy Efficient Transport) project.
- Income from turbine added to through applications to other funding sources such as climate change funds and more traditional supplier funds such as CERT.

Scale

- Single 2.5MW turbine.

Costs and Funding Route

- EST funded feasibility study.
- Then Awards4All - £5000; Stirling Council - £2500.
- £2.5m upfront cost of turbine covered by developer which Fintry Development Trust has a mortgage on, over 15 years, re-payable to the wind farm development company.

Growth and Replication

- Expanded out into wider issues – insulation, micro-renewables, transport, biomass.
- Developing micro-renewables loan scheme currently for individual homes.
- Est. separate org to enable other communities to benefit from their experience and expertise
<http://www.frost-free.co.uk/>

Model

- FREE tried to establish itself as a charity but were unable to because of the commercial link to the wind farm, so became not-for-profit company limited by guarantee and set up Fintry Development Trust to carry out charitable projects.

Use of Funding

- Income from turbine used to pay back the mortgage & provided income to local initiatives.
- Raised all cost for FRESCo model from grants and social investors.
- Their 1st yr accounts suggest an income of £228k of which £140k was donated for community projects.

Gamblesby Village Hall

Sources of Information

- Walker et al (2007)
- CAfE Case Study 22
- Evans (2006)

Summary of Project

- Gamblesby is a small village in Cumbria.
- Renovation of village hall incorporated energy efficiency and a ground source heat pump.

Reason Developed

- The main driver was the need to renovate the village hall which was run down, cold and damp.
- They wanted to make it warmer and more useable than it has been in the past.

Benefits and Lessons

- Main driving force for project was the 12 people making up the village hall committee who carried out nearly all the development work themselves.
- They also carried out much of the practical work themselves to reduce costs.
- Supported by the local Community Renewables Initiative team.
- Able to raise the funding themselves through a variety of sources.
- Created a sustainable building with a low environmental impact.
- Reduced old heating requirement from 8 kW (4 electric heaters) to 3kW for the heat pump – reducing bills and carbon emissions.
- Local people became more committed and vocal about environment with suggestion that many are considering installing renewables into their own homes.
- The project brought the community together and developed their knowledge and skills.

Scale

- Building installation - 1 Ground Source Heat Pump and later a 6 kW wind turbine.
- Costs and Funding Route
- Total cost £42,100 (GSHP and renovation).
- Funding secured EU (40%); Northern Rock Foundation (26%); community fundraising and in-kind support (17%); Eden District Council (10%); Shell Better Britain Campaign (5%); and CLAREN (2%).

Growth and Replication

- The committee later went on to install a wind turbine on the village hall.
- They participated in several case studies and community renewables events to promote replication.
- It was reported that project resulted in installations in people's homes.

Model

- Existing Register Charity that owned the village hall.

Use of Funding

- This was not an income generating scheme.
- However, it clearly significantly reduced the running costs of the hall and made it more useable.
- These savings in effect helped keep more money within the local community.

Gigha Community Wind Farm

Sources of Information

- Warren & McFadyen (2010); <http://www.gigha.org.uk/windmills/TheStoryoftheWindmills.php>

Summary of Project

- Island bought by community in 2002, to take charge of their own future.
- History of socio-economic problems – job losses, out migration, falling school numbers.
- These trends changed following buy-out.
- 3 wind turbines meet large proportion of island energy needs.

Reason Developed

- To meet own electricity requirement.
- To drive socio-economic regeneration of island.

Benefits and Lessons

- Found residents consistently more positive about wind power & local wind farms than commercial comparisons - attribute this to ownership.
- Higher rate of returns gained through community ownership than commercial developers tend to provide through local funds.
- Met local need.
- Positive engagement – 100% buy in from community.
- Effective finance model developed.
- Secured income stream for reinvestment within island – jobs, etc.

Scale

- Three 225kW second-hand wind turbines.

Costs and Funding Route

- Total capital £440k raised through three routes: £132k grants (lottery & SCHRI); £148k commercial loan (Social Investment Scotland); £120k equity holdings (Highlands and Islands Enterprise & Gigha Heritage Trust).
- Equity held by Highlands and Islands Enterprise comprises shares upon which a 6% dividend is paid.

Growth and Replication

- Scotland's first community owned, grid-connected wind farm.
- Financial model that has been developed is robust and capable of widespread replication by communities throughout Scotland.
- Anticipate many more community wind farms will follow (4 suggested by Warren & McFadyen).

Model

- Gigha Renewable Energy Limited, a trading subsidiary of the Isle of Gigha Heritage Trust.
- The financial model for the project was based around a combination of grant funding, loan funding and equity, including an £80,000 shareholding through HIE.

Use of Funding

- Estimate gross annual income of £150k after running costs, the creation of the capital sinking fund, the loan repayments/equity re-purchase. Net profit for 1st 8yrs around £75k/yr.
- Loan is being repaid over 5yrs @ fixed rate.
- Equity currently held by HIE will be bought back by the Gigha HT.
- Rest into capital reinvestment fund of approximately £160k over 8yrs to replace the turbines in the future.

Isle of Eigg Heritage Trust

Sources of Information

- Houghton (2010); www.islandsgoinggreen.org; and Community Renewable Toolkit

Summary of Project

- Residents of the Isle of Eigg have worked to create a green island by generating renewable electricity, installing insulation, producing local food and developing low-carbon community transport schemes.
- Eigg is not connected to the mainland electricity supply and after decades of diesel generators, they created Eigg Electric to provide 24hr from wind, solar & hydro from February 2008. Backup power is provided by a battery bank and 2 diesel generators.

Reason Developed

- In 2008 the residents decided to make the most of their natural resources and adapt their way of life to depend less on oil and coal, to help reduce CO₂. It also enabled them to develop a more reliable island-wide supply of power.

Benefits and Lessons

- The system generates power at a number of locations around the island using hydro, wind and solar. This is available to all households and businesses via an island-wide high voltage distribution grid. They expect to meet 95%-98% of their energy needs renewably over a year.
- They have reported that behaviour change and habitats have changed, helped by the provision of OWL meters in all homes that enable people to monitor energy use. They are set to sound an alarm when electricity use exceeds 4kW and every household has agreed to a voluntary cap on electricity use at 5 kW at any time – the first voluntary demand curb in Europe. They have also introduced traffic light system to show the level of power available on the island on any one day.
- Repair and servicing is the responsibility of a trained maintenance team of island residents.
- Income from energy use now stays on the island, the use of fossil fuels has gone down and the islanders have successfully become more self sufficient and sustainable. The scheme has also increased living standards, quality of life and increased their energy security.
- Range of challenges been overcome from design, funding, installation and running of the system, but their project team & other committed stakeholders ensured these could be addressed.

Scale

- Hydro – one 100kW scheme and two smaller 5-6kW schemes.
- Wind – four 6 kW turbines.
- PV - 10kW system.
- Installed own 11km distribution grid.

Costs and Funding Route

- The total cost was £1.66 million and funding came from a wide range of sources including: SCHRI, ERDF, Big Lottery Fund, HIE Lochaber, EST, IEHT & its residents and Highland Council.

Growth and Replication

- They have set up an online resource to share knowledge and experience with other small island communities that want to become more sustainable – it shows the work being done on Eigg and on other islands that they are working with, and aims to encourage others to follow in their footsteps.

Model

- EHT registered not-for-profit company & charity; Eigg Electric is a community-owned company.

Use of Funding

- Income generated from electricity sales (15p kWh plus 12p standing charge) & from ROCs.
- This covers maintenance costs and provides a sinking fund for replacement.
- The levels set insure the system is financially self-sustaining.

Kielder Biomass District Heating

Sources of Information

- Walker et al (2007); EST (2007).
- Forestry Commission [http://www.forestry.gov.uk/pdf/eng-nee-dhs-kielder-tech-leaflet.pdf/\\$FILE/eng-nee-dhs-kielder-tech-leaflet.pdf](http://www.forestry.gov.uk/pdf/eng-nee-dhs-kielder-tech-leaflet.pdf/$FILE/eng-nee-dhs-kielder-tech-leaflet.pdf)

Summary of Project

- Kielder Community Enterprises Ltd (KCEL) is the trading arm of Kielder Limited, a charity who aims to ensure the well being and maintenance of Kielder Village as a thriving community.
- Its community run biomass district-heating scheme provides heat and hot water for six community houses, workshop units, youth hostel, school and Forest Enterprises Kielder Castle Visitor Centre.

Reason Developed

- Help regenerate declining village and provide tourism opportunities linked to renewable energy
- Reduce energy costs and carbon emissions for the residents of village.
- Support the financial sustainability of Kielder Community Enterprises.
- Create and safeguard jobs in the region, particularly in the forestry industry through the introduction of new income streams.
- Assist the development of the market for renewable energy from biomass, with the village biomass district heating scheme action as an accessible demonstration.
- Help build confidence for subsequent similar developments across Northumberland.

Benefits and Lessons

- It was developed by Tynedale Council in co-operation with the Forest Enterprise and KCEL using an automatic self fed combustion boiler, fed with wood chips from the felling waste from Forest Enterprises forest operations. This partnership working was vital to the success of the scheme.
- The wood is chipped and stored by Forest Enterprise at fuel store in village.
- KCEL has been established as a community-owned ESCo providing a permanent source of local employment.
- It helps contribute to the overall prosperity of KCEL through this employment and by keeping the income for the provision of heat within the community.
- The use of biomass has saved around 57 tonnes CO₂ per year.
- Most of the contractors were from local companies.
- A lot of expert external advice was required to enable community to set up and run its own ESCo.

Scale

- 300 kilowatt Austrian K b boiler.
- Annual wood chip consumption is 250 - 450 tonnes.

Costs and Funding Route

- Total cost of scheme was £650,000 which was funded through Tynedale Council; One NorthEast; the Forestry Commission; European Regional Development Fund; Northumberland Strategic Partnership; Northumberland National Park Authority's sustainable development fund; Powergen and Northumberland County Council.

Growth and Replication

- It is not clear what additional development took place, although KCEL run a wider range of other community services. It has become a working demonstration for biomass district heating and is widely referred to within the literature.

Model

- Both Kielder and KCEL are not-for-profit companies - any resident can become a shareholder and all board members are elected by local people.

Use of Funding

- The community only makes a modest profit based upon heat charges of 3p/kWh, but the ESCo has provided employment which is likely to support the wider remit of KCEL.

Knoydart Hydro

Sources of Information

- Adams (2008)
- Knoydart Foundation <http://www.knoydart-foundation.com/>
- Scottish Renewables Toolkit

Summary of Project

- An off-grid community in Scottish Highlands that uses hydro to provide electricity to all the properties via a small local grid.
- Provides constant power through hydro and backup diesel generator to 67 customers.
- The Knoydart Foundation established to take ownership of the Knoydart Estate in partnership with local residents, the Highland Council, Chris Brasher Trust, Kilchoan Estate & John Muir Trust.
- The hydro project was first installed in the 1970s and renovated in 2001.

Reason Developed

- Their aim is to preserve, enhance & develop Knoydart for the well being of the environment and the people.
- The hydro projects purpose is to provide cost-effective, clean & efficient electricity to local community.

Benefits and Lessons

- Successful example of project meeting local need.
- Only had one period where rainfall been insufficient to run hydro.
- Are self-reliant for power and income generated covers operations.
- Over the past two years seen 30% increase in the number of buildings wanting a supply, causing potential issues for maintaining supply.
- The growth in customer base been possible through better monitoring and understanding of demand for power and the management of water levels.
- Have suffered from mechanical failures, technical issues and damage, but these have been overcome with better management and maintenance meaning outages are less common.

Scale

- Max rated output 280kW.

Costs and Funding Route

- Raises money for refurbishment from EU Regional Development Fund - £500k.
- Funding for monitoring equipment came from SCHRI, Fresh Futures & the company itself - £23k.

Growth and Replication

- One off project to meet local need.
- They have become much better at managing the overall system demand and performance.
- Are considering using spare capacity to provide further connections and have suggested they may consider a local hydrogen development.

Model

- Community owned company limited by guarantee.
- Run by a board of directors from the local community.
- Highlands and Islands Community Energy Company continue to give support and advice.

Use of Funding

- Output sold @ 10p/kWh.
- This pays wages, maintenance, insurance and other running costs.
- Surplus to date has been invested in upgrading rest of the distribution system and the company are now paying back the investment that Knoydart Foundation contributed.

The Green Valleys

Sources of Information

- Houghton (2010)
- The Green Valleys: <http://www.thegreenvalleys.org/>

Summary of Project

- Developing community-owned micro-hydro schemes, and improving the energy efficiency of homes in the Brecon Beacons National Park.
- It enables and supports community groups in the area to source and install community-owned micro hydro generation projects.

Reason Developed

- It aims to become zero-carbon valley through renewable generation and energy efficiency.
- Ultimately hoping to be an exporter of renewable electricity, with much of this revenue reinvested into carbon reduction measures in the community.

Benefits and Lessons

- Dyffryn Renewable Enterprise will be the first installation to occur. Planning has been submitted and the necessary funds are in place for a 16kW generator that is expected to provide an annual return of £11,000 per year.
- They were very effective in finding local and often free expertise (engineering/financial/construction) to install schemes at very low cost.
- Their goals aligned with strategic goals of Brecon Beacons National Park Authority increasing partnership working and support, whilst enabling learning in both organisations.

Scale

- Small scale installation, but they realised that any single micro-hydro scheme is too small and insignificant to attract standard private finance, so their approach aggregates 40 micro-hydro projects to provide a more attractive investment portfolio with lower levels of risk.

Costs and Funding Route

- Initially they were the winner's of the British Gas Green Streets challenge, which scooped them £140,000 for their work in Llangattock.
- Received funding from a variety of sources for the Dyffryn Hydro Scheme: National Park Sustainable Development Fund; EAGA; The Waterloo Foundation.
- They are also one of the NESTA winners (£300,000).

Growth and Replication

- Possible that this project has come out of their early engagement and enthusiasm through winning the British Gas Green Streets Challenge, but expanded out to look at ways to slash carbon emissions at a bigger scale.
- Part of the purpose of this project is to enable set up of multiple schemes in the area.
- Model supports the development of micro-hydro schemes by local communities, farmers and other land owners for local benefit and the wider project goals of reducing carbon within the national park.
- The model is being promoted by other agencies throughout Wales and a number of Welsh regions have expressed an interest in adopting similar approaches.

Model

- Not for profit Community Interest Company.

Use of Funding

- A share of funding that comes from each project into Green Valleys will be recycled into an investment fund which will allow them to invest in another scheme elsewhere in the area.
- Further shares of this income go to local communities and they decide what to do with it.

Torrs Hydro, New Mills

Sources of Information

- CIFCS (2010)
- Torrs Hydro: <http://www.torrshydro.org/index.php>
- <http://www.co-operatives-uk.coop/live/cme2823.htm>

Summary of Project

- Community-funded and owned hydro-electric scheme to create electricity from the Torr Weir on the River Goyt in Derbyshire.
- Started in 2006 with support through Water Power Enterprises, a social enterprise whose mission is to set up small-scale hydro plants and reduce carbon emissions.

Reason Developed

- Act on climate change and raise awareness of it.
- Regenerate local area.

Benefits and Lessons

- Income from sales of power support local regeneration projects in New Mills.
- Developing an educational programme on environmental issues and supporting existing and new services that contributes to the local economy/community.
- The local Co-operative food store buys electricity, with any surplus sold to grid.
- About half the shareholders (231 in total) are local people and businesses, a further 15% are within a 20 mile radius of New Mills.

Scale

- Maximum output 63 kWh.
- Hope to achieve average annual output of 240,000 kWh.

Costs and Funding Route

- Total cost around £226k.
- Community share issue raised nearly £100k; with grant funding from East Midlands Development Agency, The Co-operative Fund and the Sustainable Development Fund of the Peak District National Park providing the other £100k. A small loan from Co-operative bank of £26k.

Growth and Replication

- They hope to encourage others to think about the challenges that climate change presents.
- Water Power Enterprises have gone on to support similar schemes in other areas.

Model

- Incorporated as an Industrial and Provident Society.
- Shares do not provide dividends, instead the income is reinvested locally – it's a social dividend, rather than personal financial reward.
- Shares withdrawable on 180 days notice, but only after an initial period of three years in which they are non-withdrawable.
- The board also has the powers to write down the value of shares, if the liabilities of the society exceed the value of its assets.

Use of Funding

- Income expected to be in the region of £20k a year.
- It will be used to help regenerate the community and environmental sustainability of the New Mills area.

West Oxford Community Renewables/Low Carbon West Oxford

Sources of Information

- Houghton (2010)
- Low Carbon West Oxford: www.lowcarbonwestoxford.org.uk

Summary of Project

- WOCR develops community-owned renewable energy projects and donates most of the income to Low Carbon West Oxford to support projects on renewable energy generation, domestic energy efficiency, land use management, and production of local food.
- It is developing a portfolio approach to the development of renewable energy projects.

Reason Developed

- Low Carbon West Oxford was set up after the 2007 floods by residents concerned about climate change and local flooding.
- It aims to combat climate change by cutting community CO2 emissions by 80 % by 2050, encouraging residents to live more sustainably, and contributing to a more cohesive and resilient community.

Benefits and Lessons

- The community was successful at gaining extensive free advice and support from a local law firm.
- They have developed a portfolio approach to technologies spreading the technical risks for investors - balancing ease of installation (PV) against technologies that have a longer development process (wind and micro-hydro) with a bigger financial return.
- Their goals aligned with the strategic goals of the local RDA (SEEDA) which has aided partnership working.

Scale

- Various, portfolio based approach.

Costs and Funding Route

- Low Carbon West Oxford has issued a share offer to provide capital for investment in a portfolio of renewable energy projects which will provide a long-term income stream to sustain their initiative.
- They have sought member investors concerned about long-term broader societal and environmental goals rather than short-term financial gain.
- Once the energy projects are up and running, they will start generating revenue derived from selling the electricity to the grid. The revenue generated provides a return to individual investors.

Growth and Replication

- They have developed a model contractual arrangement for leasing roofs for photovoltaic systems. Key elements of this can be repeated by any community, particularly urban communities with many large roofs able to be leased for large-scale solar PV projects.
- The model has already been repeated in new community projects - Low Carbon Hook Norton & Muswell Hill Low Carbon (DECC Low Carbon Communities Challenge winners).
- They are now receiving more enquiries from around the country and are planning to run a disseminating event and provide material to help others quickly and safely follow their model.

Model

- West Oxford Community Renewables is an Industrial and Provident Society.
- A key part of their offer to investors is full accounting that will allow it to make carbon returns as well as financial ones and it will report to its members annually on financial, environmental and social results of its investments.

Use of Funding

- The income from their renewable projects will go into financing carbon reduction measures in local homes and in the community, including a revolving loan fund to help householders undertake low carbon retrofitting.

Annex 3: Examples of Community Share Issues

The following examples include both energy and other share based community initiatives. They are drawn from the case studies used within several reports. It should be noted that many more examples are available, particularly in the non-energy sectors. This includes the case studies from Community Shares, the Development Trust Association and Co-operativesUK websites:

- [Community Shares](#)
- [Development Trust Association](#)
- [Co-operativesUK](#)

Energy4All – IPS Co-operative Model

Westmill Wind Farm Co-operative is an example of the Energy4All approach and is cited by Brown (2008) and Community Shares (2010f). This is the biggest 100% community-owned wind farm in the UK, consisting of five 1.3MW turbines. It had a total construction cost of £7.6m which was raised through a public share offer and a loan from the Co-operative Bank.

The public share offer sought to raise £3.75m and at the close of the offer they were oversubscribed with more than £4m sent in, requiring them to scale back some of the applications. However, later contractual problems with suppliers resulted in increased costs and required them to raise a further £1.25m, which they were able to do in just three weeks.

The share prospectus was published in accordance with the UK Prospectus Regulations 2005 at a cost of £150,000. It forecast dividends on share capital of 5% pa gross, rising to an average of 12% pa over the 25 year life of the project. Members were required to invest a minimum of £250, up to the legal maximum of £20,000. If members wanted to qualify for Enterprise Investment Scheme (EIS) tax relief (20%), thereby raising the effective rate of return, the minimum investment was £500.

Shares in the Westmill are transferable, although the shares are not traded on any market and any transfer in the early years could affect EIS tax relief. There is also provision in the Rules for members to redeem up to 5% of the total equity each year after the first 5 years, on a first-come, first-served basis and at the discretion of the board. Cash reserves will be accumulated in a depreciation fund to allow all remaining shares to be repaid in full after the twenty-fifth year.

It has not been possible to get a copy of this share issue, but Energy4All currently have an open share offer for their new co-operative: Energy Prospects. This is slightly different from their previous offers, as it's linked to a portfolio of projects, but it is a prospectus based approach aimed at raising a £1 million that follows a similar approach to their previous schemes – it is currently from: http://www.energy4all.co.uk/energy_prospects_register.asp. It uses the following structure over 45 pages:

- Introduction letter
- Summary of offer
- Risk factors
- Persons responsible and directors declaration
- Background to renewable energy
- Background to Baywind, Energy4All and renewable energy co-ops
- Information on Energy Prospects Co-op
- Accountants letter
- Information on offer

- Rules
- Notes on applying for shares
- Application form

Torrs Mill Hydro – IPS Community Benefit Society

Torrs Mill Hydro has also been cited by Brown (2008) and is a Community Shares (2010g) case study. It is also one of the case studies in Annex 2. Their estimated costs for the scheme were £226,000 and they expected an income of around £20,000 per annum, with pre-tax profits, after year three, projected to be in the region of £11,000 to £15,000.

They raised £100,000 of capital from grants and loans leaving a shortfall of £126,000 which they sought from a public share offer. They used a set of model rules developed by Wessex Reinvestment (see 3.2) to help shape their share offer. Shares would be withdrawable on 180 days notice, but only after an initial period of three years. The board also has the powers to write down the value of shares, if the liabilities of the society exceed the value of its assets. Looking at the budget within their invitation to invest, it appears it cost £5,000 to establish their company and a further £6,000 in consultancy costs – only some of these costs are likely to be associated with developing and issuing the offer.

The minimum investment was set at £250 (£500 to qualify for EIS) and it was forecast that the society would be able to pay a maximum of 7.5% interest per annum on share capital after an initial period of three years. However, they made it clear within their invitation to offer that they did not intend to issue dividends, with the income instead being used to fund wider community regeneration projects.

The share offer ran from late Nov 07 to the end of Jan 08 and raised a little under £100,000 from just over 200 applicants. The shortfall in their total budget required them to seek further grant funding and a small loan from the Co-operative Bank.

A copy of their invitation to invest is still [available](#) and it used the following Structure over 17 pages:

- **Invitation to Invest:** Introduction; Torrs Hydro Electric Scheme (Scheme); Governance and Directors of THNM; Shares offered; What are you investing in?; Why do we need your investment?; Project Management by h2oPE; The Hydro Scheme; Finances; The Social return on your investment; Tax relief; Timetable.
- **Investment information for the Issue of Shares:** Investment Information; Legal Information; Shareholdings; Nomination option; Voting; Dividends; Risk Factors; Social Investment; If not, do not buy the shares.
- **Terms and Conditions for applying for Shares:** Your Application; Your Payment; Your promises to us; Demutualisation – protection from “carpet-baggers”; Miscellaneous; Advisers and Bankers; Miscellaneous.
- **Application to Invest**

Green Valley Grocer – IPS Co-operative

This is one of the projects being supported by Community Shares and is a small IPS Co-operative based in Slaithwaite, West Yorkshire. It is an example of a community pooling its resources to buy a greengrocers that was closing down. A core group of local people developed a business plan with the aim of raising £15,000 through £10 shares. It managed to raise £18,000 from just over 100 people – the largest investor bought £1,500 of shares, but most invested £100 to £150. These members now own and control the business and can stand for the board. The co-op provides wages for four people who work in the shop.

Cost were not shown in their accounts for establishing the co-op. Registration of Slaithwaite Co-operative Limited funded by Co-operative Group enterprise Hub, the costs of developing the business plan and share offer was undertaken by the Founding board and legal costs were provided Pro-bono by a local solicitor.

The share offer was held in 2009, but remains open. It consisted of three documents: a business plan; the share offer itself; and a set of detailed financial information. The share offer is available from: <http://www.slaithwaite.coop/sites/default/files/ShareOffer.pdf> , it is four pages and covers:

- Offer letter
- Money laundering regulation requirements
- Share Issue Offer Notes
- Share Issue Application Form

West Oxford Community Renewables – IPS Community Benefit Society

This share offer is currently open, and like Torrs Hydro it uses a standard set of rules - the Wessex Model Rules. Its structure and contents in terms of its 'investment information for the issue of shares' is identical to Torrs Hydro above, although the invitation to invest is different. The offer is available from: <http://www.wessexca.co.uk/userfiles/file/WOCR%20Share%20Offer%20doc.pdf> and is 11 pages. The invitation provides information under the following headings:

- West Oxford Community Renewables
- Our offer to you
- What are you investing in?
- Tackling our contribution to climate change
- Strengthening our community
- Our planning returns to investors
- Share giving
- Schemes for Investment
- Governance and Directors for West Oxford Community Renewables Ltd
- Risk Factors

Other Examples

Hill et al (2007) also provides some examples of community share offers. These are both for IPS bencom structures and were issued by Headingly Development Trust to develop an enterprise and arts centre and Fordhall Community Land Initiative for securing an organic farm. These are available from page 19 onwards in the Hill report:

<http://www.dta.org.uk/Resources/Development%20Trust%20Association/Documents/Other/community%20shares%20Final.pdf>