

Supporting Community Investment in Commercial Renewable Energy Schemes

Final Report

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Executive Summary

A review of community investment in commercial renewable energy schemes was commissioned by the Scottish Government Onshore Renewables and Community Energy Team. This report presents an analysis of the factors which support and limit the ability of communities to invest in commercial renewable energy schemes, and makes recommendations for action based on domestic and international evidence. It concludes that there is significant potential for increased community investment in commercial energy schemes, given the appropriate support, funding and advice.

Current context

In Scotland, there are currently 12 operational commercial renewable energy projects that have seen some form of community investment¹. Taken together, these projects account for just over 21 MW of current operational Scottish renewables capacity. This limited experience was reflected in survey results, with only a quarter of respondents reporting any substantial experience. There is however a real interest in developing community investment opportunities.

Key Findings

Community investment in commercial energy projects has the potential for far-reaching and positive impacts. This research has demonstrated that there is much interest in, and enthusiasm for, increasing community investment in commercial energy projects in Scotland. However, it has also highlighted a lack of experience in this area and considerable uncertainty or hesitancy. Indeed, a significant issue that arose throughout this project was the difficulty of accessing the requisite finance, which was often cited as a key reason why community investment does not move forward.

Key recommendations for action are made, which include:

¹ Energy Archipelago Database, May 2014. The total number is 13 if Housing Associations are counted as communities.

- The development of further **guidance and support materials** to facilitate community investment, tailored for both communities and developers, and reflecting the different needs of these groups
- The development of opportunities for **sharing experiences and building contacts** through networking events or activities which connect a range of stakeholders and enable mutual learning and mentoring schemes.
- The appointment of **independent project managers** (not connected to a developer or community), as well as named contacts within organisations, would facilitate communication and project momentum.
- Improved **access to start-up finance** for communities, as well as clear guidance on how and where it can be accessed.
- Clarification over the **definition of 'communities'** in this context, and the implications for both community investment and broader public engagement with the energy sector

These recommendations are designed to overcome the key challenges, which are identified as:

- The ability to invest, and lack of available finance
- Locating and accessing information, knowledge and skills
- Targeted advice and support
- Lack of trust
- Timing and the building of relationships
- Community cohesion – knowing with whom to engage and how

Balancing Benefits and Costs

This research identifies a number of benefits from community investment. For communities, these include anticipated financial revenue, which can help to make other projects more resilient, and provide a guarantee of income that is not dependant on public-sector grants. There is also the potential benefit of capacity building and empowerment. Benefits for developers include potential for a quicker planning process with an increased likelihood of success, and constructive relationships with communities.

However, concerns were identified across stakeholder groups, including issues around process complexity and finance. Given that community investment in commercial renewable energy schemes in Scotland is relatively novel, the landscape for accessing support or funding is still developing. Several existing funding models were examined as part of this research, and key issues in selection of the best approach included the nature of the project, the role and response of the developer, and access to funds available.

The findings are based on a review of the current position, including existing research and policy, direct engagement with developers, community representatives and other stakeholders regarding their experiences, and analysis of several case studies, both domestic and international.

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Terms used in this report

CARES – Community and Renewable Energy Scheme

CEDIF – Community Economic Development Investment Fund

CES – Community Energy Scotland

LES – Local Energy Scotland

REIF – Renewable Energy Investment Fund

SIB – Scottish Investment Bank

This report is about projects where the *finance* and *ownership* is shared in some way between a developer and community. We use both the terms ‘community investment’ and ‘shared ownership’ to describe this.

Section 1: Introduction

The Scottish Government has world-leading targets for the generation of renewable energy². It also intends that communities should be given the opportunity to invest in developments and have a direct stake in the energy being generated³. This report presents the analysis of a research project exploring the factors which support and limit the ability of communities to invest in commercial renewable energy schemes. It summarises the extent of current community investment in commercial renewable energy schemes and the sources of support available, and makes recommendations for the Scottish Government to support greater shared ownership of commercial renewable energy projects.

This report:

- Identifies the current state of the art, explores which models of shared ownership and investment are being used, and illustrates these through case studies in Scotland;
- Identifies the support mechanisms currently available, and provides a map which illustrates some of the key sources of support;
- Identifies the benefits to community investment, and also the hurdles which currently prevent it from being more widely used;
- Explores other approaches from across the rest of the UK and internationally to identify examples of best practice from which points of learning may be drawn for Scotland;
- Considers what is required to support communities to invest in commercial renewable energy schemes in Scotland, and makes recommendations about this.

Section 2: Methods

The research had four key parts:

- ***A review of policy and research relating to community investment in renewable energy schemes:*** This included reviewing relevant policy, guidance, and strategy documents relating to community investment in renewable energy projects as well as relevant academic literature relating to Scottish, UK and international experiences. This review examined what support is currently available and identified key debates around the role, value and practicalities of community investment.

² <http://www.scotland.gov.uk/Publications/2011/08/04110353/0>

³ <http://www.scotland.gov.uk/Resource/0045/00457876.pdf>

- ***A survey of developers, community representatives and other stakeholders regarding experiences of community investment in renewable energy schemes:*** This survey, which was developed and conducted in collaboration with Local Energy Scotland, explored experiences with community investment, perceived challenges, and perceptions of the support available. It was distributed to Scottish Renewables members and to a range of community groups and other stakeholders and was completed by 39 respondents.
- ***A deliberative workshop and focus groups with developers, community representatives and other stakeholders:*** This workshop, which was held in collaboration with Local Energy Scotland, consisted of brief presentations relating to community investment with commercial energy projects, and structured focus group discussions with participants. The workshop was attended by 75 delegates representing developers, communities, landowners, Scottish Government and financiers.
- ***A review of case studies of community investment and international comparisons:*** A number of Scottish case studies were analysed to explore current practice in community investment. Cases were selected to reflect the range of investment models currently being used in Scotland and were identified through the 'Energy Archipelago' database, developed by Scene Consulting and the James Hutton Institute, in collaboration with a number of other community- and academic affiliates. In addition, a series of international comparisons were also conducted. This provides an overview of current policies, practices and support mechanisms in the various countries and draws out learning points for Scotland. The countries reviewed are the UK, Germany, Denmark, Australia, Canada and South Africa.

Section 3: Structure of the report

This report firstly considers the current context in which community investment is taking place, and the benefits for both developers and communities. It provides an overview of the different funding models being used, and presents a map showing the range of funding and advice sources available. Details the challenges to community investment are explored, drawing on a series of Scottish case studies as examples. This is followed by consideration of a range of international cases, describing the differing policy context and examples, drawing out the key learning points for Scotland. The report then considers the resources that would help to facilitate more community investment, ranging from the specific to

broad national level changes at planning. It concludes with a summary of the key findings and recommendations.

Section 4: Current context

We begin by outlining the current context in which shared ownership in Scotland is taking place. Both the Department of Energy and Climate Change (DECC) and the Office of Gas and Electricity Markets (Ofgem) divide Scottish onshore renewables generating capacity into four sectors: commercial, community, domestic and industrial. Projects that include community investment into commercial projects, which are the focus of this research report, thus straddle these sectoral boundaries.

Relative to total onshore capacity, commercial energy projects in Scotland that have used or plan to use community investment account for only a minor contribution in MW terms. However, the Scottish Government encourages developers to consider an increased level of direct community involvement in renewable energy projects⁴ and there can be no doubt that interest in community investment arrangements is growing amongst both communities and developers, as we discuss in the following sections.

Investment by communities differs from schemes whereby a commercial developer provides financial benefit to a community, for example through a trust fund. Community benefit schemes have been considered elsewhere⁵, and are not within the scope of this research.

The classification of community investment is made difficult by the wide variety of arrangements used. In the Scottish context, two key defining characteristics of projects⁶ are:

(A) Whole or Part Ownership: is the renewables project 100% community-owned and – led, or does the community own a stake or derive a proportion of revenue from a larger project?;

(B) Community Body or Individual Investment: does the investment happen through a community organisation, or do individuals – who may or may not live close to the development – invest? Examples of the former include projects taken forward by local development organisations such as Development Trusts; examples of the latter include co-operative investments and ‘crowd-funding’. There are also projects which make use of a combination of both these investment channels; examples include ‘Societies for the Benefit of Communities’ (‘BenComs’).

⁴ Local Energy Scotland (2014) *Scottish Government Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments*. Produced by Local Energy Scotland on behalf of The Scottish Government.

⁵ Local Energy Scotland (2014) *op cit*

⁶ See also Harnmeijer (2014) *Response to DECC Consultation on Community Right to Buy in to Renewable Electricity Generation Developments*, available on <http://sceneconsulting.com/library>

The most common legal structures used by communities to invest in a commercial energy are Development Trusts, and co-operatives (these are also known as Industrial and Provident Societies or ‘IPSS’). In this research we discuss both of these structures. We are not focusing therefore on wholly-community owned and led projects. We are concerned with projects where the finance and ownership is shared in some way between the developer and community. Whilst we discuss in detail the different models that might be used in section 5, for readability, we use the terms ‘community investment’ and ‘shared ownership’ to describe this.

4.1 Current projects

In Scotland, there are currently 12 operational commercial renewable energy projects that have seen some form of community investment⁷. Seven of these involve local development organisations, and the remaining five involve co-operatives. Taken together, these projects account for just over 21 MW of current operational Scottish community renewables capacity. In terms of technology, the majority of the projects are onshore wind farms, and the remainder are biomass projects.

4.2 Benefits of shared ownership

Our research identifies a number of benefits from shared ownership: for communities, developers, and for the development of renewable energy more generally. Indeed, two thirds of respondents to our survey felt that shared ownership at least had the potential to bring benefits:

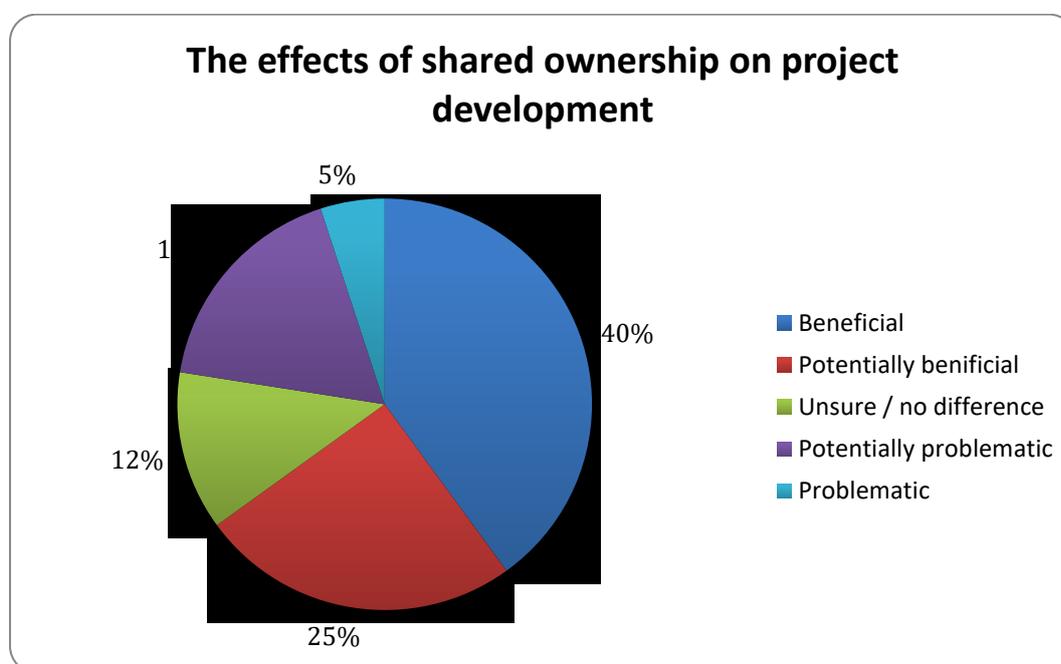


Figure 1: The effects of shared ownership on project development

⁷ Energy Archipelago Database, May 2014. The total number is 13 if Housing Associations are counted as communities.

4.3 Benefits for communities

For communities, our research identifies a number of motivations to invest in commercial renewable energy projects. These include anticipated financial revenue for the community, which can help to make other community projects more resilient, and provide a guarantee of income that is not dependant on public-sector grants. For remote, rural communities in particular, this income stream may be very significant, particularly when many funding sources for community projects are short term or vulnerable. There is also the potential benefit of capacity building and empowerment of communities. Shared ownership also facilitates local control relating to energy production, and with community support, the process of development can become more open and transparent for community members than a solely commercial project.

4.4 Benefits for developers

For developers, there are also a range of potential benefits. Previous research⁸ has documented the differing reasons why developers engage with the public about commercial projects, and this analysis is similarly applicable here. Firstly, for example, engagement with the public may take place for *instrumental* reasons⁹, with its main aim to avoid or overcome public opposition¹⁰. We find a similar sentiment here. Respondents told us that the benefits of shared ownership were that it “*should be easier to get the community on board and deflect opposition*”, particularly important because onshore wind is “*a very contentious subject*”. Emphasis was also placed on the possibility that shared ownership could increase the likelihood of planning success, and enjoy a quicker planning process. It has previously been found¹¹ that projects with shared ownership are indeed more likely to achieve planning success, and more quickly, than commercial projects. This was echoed in comments from our respondents, who said that shared ownership was a way of gaining local support and “*therefore improving chances of success*”, and that working with a community early on would “*make the planning process more streamlined*”.

Secondly, just as engagement might also be used for normative reasons because it is the *right thing to do*¹², so our respondents told us that shared ownership is positive because it provides communities with the opportunity to get fully involved in the development of “*a project within their community*” and that “*this in turn allows communities to thrive from*

⁸ Aitken, M., Haggett, C. & D. Rudolph (2014) ‘Wind Farms Community Engagement Good Practice Review.’ Report commissioned by ClimateXChange for the Scottish Government.

⁹ Wilsdon, J. & Willis, R. (2004), ‘See-Through Science: Why public engagement needs to move upstream’ available at www.demos.co.uk

¹⁰ Haggett, C. (2009) ‘Public engagement in planning for renewable energy’, in S. Davoudi and J. Crawford (eds.) *Planning for Climate Change: Strategies for mitigation and adaptation for spatial planners*, London: Earthscan; Warren, C. & M. McFadyen (2010) ‘Does Community ownership affect public attitudes to wind energy? A case study from south-west Scotland’ *Land Use Policy* 27, 2, 204-213.

¹¹ Haggett, C., Creamer, E., Harnmeijer, J., Parsons, M., and Bomberg, E. (2013) *Community Energy in Scotland: The Social Factors for Success*. Report commissioned by ClimateXChange for the Scottish Government

¹² Aitken et al (2014) *op cit*

what is essentially their development". Community investment is a way of improving relations between communities and developers, and of demonstrating a commitment to engagement with the community by a developer¹³, which can help to support *"long term community cohesion"*. Shared ownership provides *"tangible and empowering means of ensuring community benefit"* – which was seen to be of benefit to a developer as well as a community.

Thirdly, there are *substantive* benefits to shared ownership, where the outcomes may have a wider impact than on just the particular project. Respondents suggested that the image of renewables more generally could benefit from greater shared ownership: renewables could become *"more acceptable to communities who often have to put up with projects on their doorstep but don't get a huge benefit from them"*; and could serve to redress the balance between inter/national benefits and local disbenefits of renewable energy developments¹⁴. It was suggested to us that more shared ownership *"would ultimately improve the reputation of the sector and help us to really embrace renewables"*. Indeed, one respondent said that the impact of shared ownership on the development of renewable energy was such that it could be *"potentially transformational"*.

4.5 Balancing benefits and costs

We asked our survey respondents about who would benefit from shared ownership. It was felt that benefit or potential benefit would be more likely to accrue to communities than developers; and that developers were more likely to experience problems:

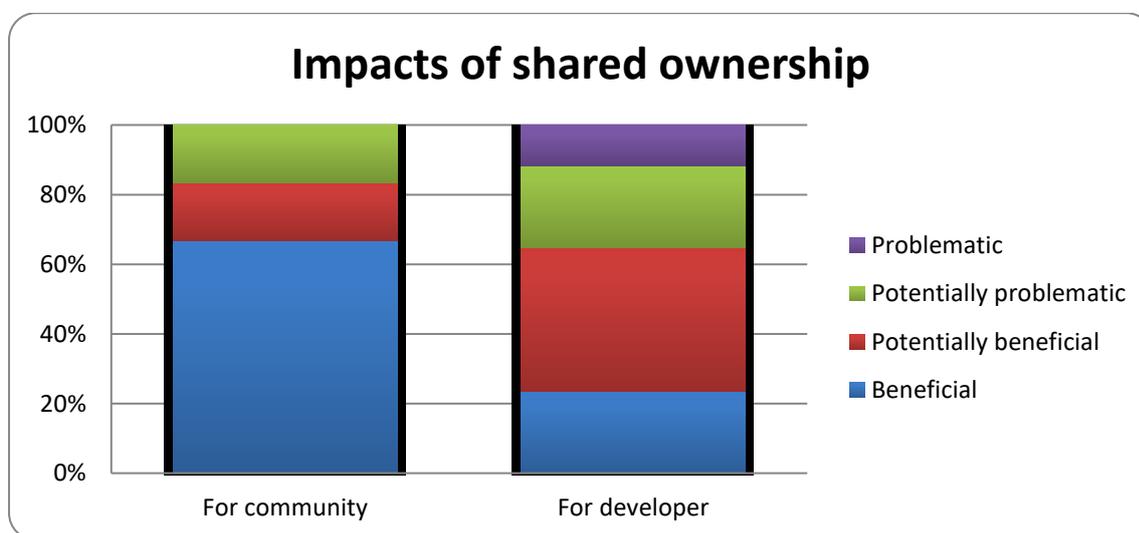


Figure 2: Impacts of shared ownership on communities and developers

¹³ Aitken et al (2014) *op cit*

¹⁴ Aitken, M. (2010), Wind power and community benefits: challenges and opportunities. *Energy Policy*, 38(10): 6066-6075; Walker, G., Devine-Wright, P., Hunter, S., High, H. & B. Evans (2010), 'Trust and community: Exploring the meanings, contexts and dynamics of community renewable energy' *Energy Policy* 38 (10): 2655-2663.

Accordingly, whilst our research finds support for shared ownership from representatives across all interested groups, there was also some hesitancy and concern. While shared ownership could make planning smoother and improve community-developer relations, there were concerns that it could slow the process, and at least at the initial stages might be “*challenging*”, and would need to be well handled and delivered. It was also suggested that there might need to be a trade off because of a feeling that community investment: “*...could increase development times but also increase engagement, learning and benefits*”.

Whilst some respondents described this balance, for others there were potential outright disbenefits, as shown in Figure 2 above. For communities, the complexity of the process might either deter them from participating, or even become a divisive issue for them. For developers, concerns were raised about the added complexity, a protracted decision-making process due to a need to get a group consensus among the community or its representatives, and increased costs as a result.

Our analysis suggests that the problems perceived by developers were related to their views about the community, and the timing and amount of involvement that they should have. For example, while developers might be “*understandably reluctant*”, those who valued the role of communities in general were more likely to accept the difficulties as part of the overall process: “*The start up progress is slower as all stakeholders need to be comfortable. However the planning process should be easier since there is clear community involvement*”. Another developer described the added time and complexity but said ownership rather than just benefit for a community leads to much greater community support “*and the benefits are much greater for the community, which ultimately also benefits the developer*”.

Alternatively, developers with less of an emphasis on the community viewed the process differently: “*the developer will take the lead and the community will follow - typically the developer offers a community stake to gain an advantage at the planning stage and to help the project*”. Another described the way in which they would only offer investment to a community once planning consent had been achieved, and another said that communities could become involved after planning permission has been given, “*On a ‘it’s going to happen so make the best of the situation’ principle*”; rather than getting involved earlier and being part of the process. Furthermore, there were concerns that shared ownership might bring extra time and costs, and that these could actually reduce the value of projects, with possibly the “*potential to scupper marginally-viable projects*”. There were also concerns raised that developers would be expected to provide investment opportunities, and more discussion of the role that shared ownership could have in planning decisions is given in section 6.4. The point here is that some developers expressed concern about community investment, and that their views about this were often quite strongly related to their views of community involvement more generally.

4.6 Lack of experience

We have discussed above perceptions of the potential benefits that could accrue from shared ownership. Many of the views expressed were ‘perceptions’ because there is a lack of experience with community investment in commercial energy projects. This applies to both developers and communities. The chart below indicates that across all the groups in our survey (developers, communities, financial and legal institutions, councils and others) only a quarter had substantial experience; with 40% having a little or some experience, and a quarter having none at all:

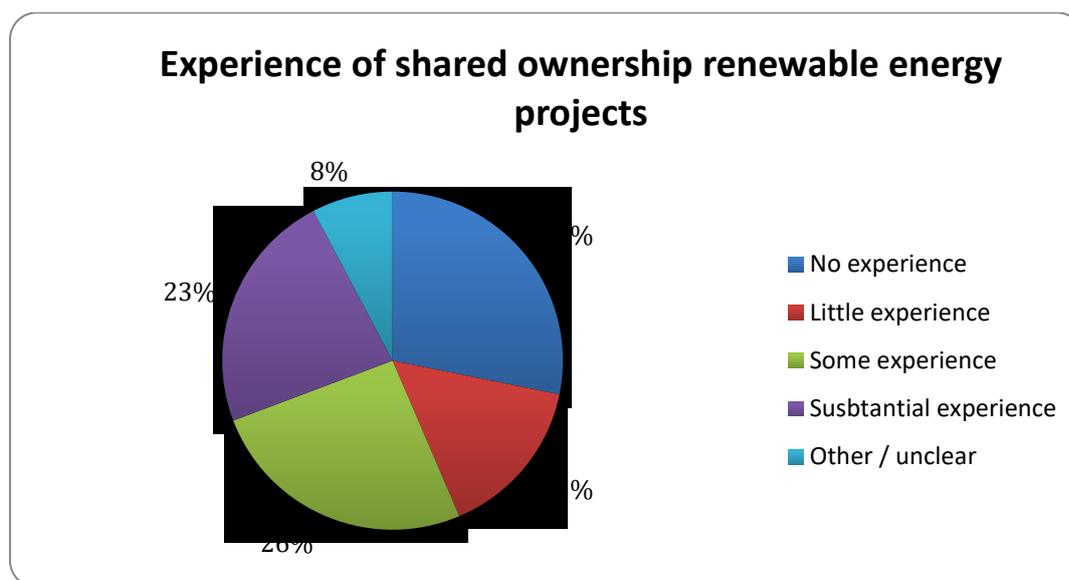


Figure 3: Experience of shared ownership projects

The extent to which developers reported throughout our research that they had not used shared ownership was perhaps surprising. However, we do find a real interest in taking this step. Developers told us that whilst they might not have used this sort of approach yet, they were “looking to explore shared ownership” and “would like to offer shared ownership” and that this was something that was becoming part of “numerous discussions with communities as part of the Community Benefit Programme”. It is interesting that, while many of our respondents asked for more support for communities (see below), there were also requests for more guidance for developers who lack experience and even expertise in being able to take shared ownership forward: training for developers to show them how community ownership can be achieved without undue complication, risk or expense; and even free legal advice on company structures for developers who are at the early stages of considering including community ownership in their developments were two of the suggestions reported. It was also suggested that local councils also lack experience, and need more support, more information about the value of shared ownership projects, and more guidance on the role that they should play. Communities were also very keen to pursue the possibilities of taking such a model forward, even if they had had limited experience of doing so thus far.

4.7 Sources of Support Currently Available

Having discussed the potential benefits of community investment, and the lack of experience for many respondents, we now consider the sources of advice and finance available. Given that community investment in commercial renewable energy schemes in Scotland is relatively novel, the landscape for accessing support or funding is still developing. As illustrated in Figure 4, there are a number of organisations with interests and relevant expertise in this area, however these have varying roles to play at different stages of the planning, development or operation of renewable energy projects.

Sources of funding include: Local Energy Scotland (which administers CARES funding¹⁵); the Scottish Investment Bank (which administers REIF funding¹⁶); Triodos bank¹⁷ and the National Lottery¹⁸; Pure Leapfrog¹⁹; and Social Investment Scotland²⁰.

Advice is available from Scene Consulting²¹; Community Energy Scotland (CES)²²; The Resilience Centre²³; Co-operatives UK²⁴; Development Trust Association Scotland²⁵; Friends of the Earth Scotland²⁶; and Scottish Communities Climate Action Network (SCCAN)²⁷. Local Energy Scotland provides a range of tools to support community investment, including a procurement framework to allow community groups to select legal and financial services quickly, a development officer network providing free-at-point-of-use bespoke support to community groups and (in the near future) the CARES toolkit which will include an interactive finance model, and a Partnership Portal.²⁸

As many of the powers related to the planning and administration of renewable energy are devolved, the Scottish Government plays a key role in the development of community-owned and commercial renewable energy schemes²⁹. Changes in Government funding mean that CARES grant funding is now also accessible to communities in the initial ('conception' or 'scoping') stages of a potential shared ownership project. In addition to CARES and REIF funding provided by the Scottish Government, communities can potentially

¹⁵ <http://www.localenergyscotland.org/communities/>

¹⁶ <http://www.scottish-enterprise.com/services/attract-investment/renewable-energy-investment-fund/overview>

¹⁷ <http://www.triodos.co.uk/en/business/equity-funds-home/bb-triodos-renewables/bb-tr-for-who/>

¹⁸ <http://www.biglotteryfund.org.uk/global-content/programmes/scotland/investing-in-communities-growing-community-assets>

¹⁹ <http://www.pureleapfrog.org/page.jsp?id=31>

²⁰ http://www.socialinvestmentscotland.com/files/7513/4391/6552/Scottish_Community_Renewables.pdf

²¹ <http://sceneconsulting.com/>

²² www.communityenergyscotland.org.uk

²³ www.theresiliencecentre.co.uk

²⁴ www.uk.coop

²⁵ www.dtascot.org.uk

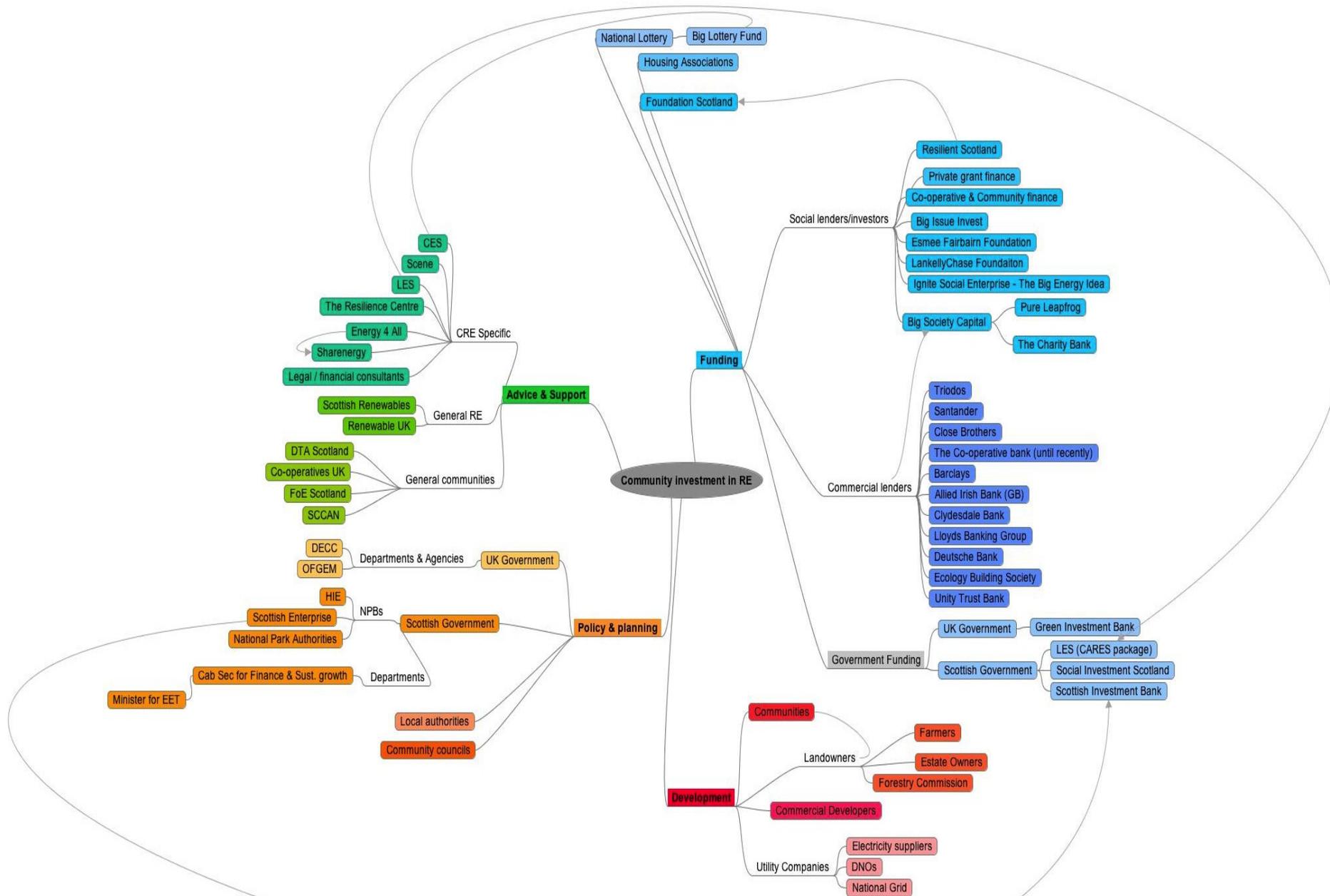
²⁶ www.foe-scotland.org.uk/CommunityPower

²⁷ www.scottishcommunitiescan.org.uk

²⁸ <http://www.localenergyscotland.org/sharedownership>

²⁹ Toke, D., Sherry-Brennan, F., Cowell, R., Ellis, G., and Strachan, P. (2013). Scotland, Renewable Energy and the Independence Debate: Will Head or Heart Rule the Roost? *The Political Quarterly*, 84(1), pp.61–70.

access a range of other grants, low-interest and commercial loans. These are detailed in Figure 4 below. It is of note that there is some overlap between organisations that provide funding and advice, with some offering both.



Section 5: Models of Community Investment currently used in Scotland

Following on from the sources of advice and finance in the previous section, this section discusses in more detail the various different models of community investment used in Scotland and presents case studies to illustrate each of these models. The Scottish Government has stated that it wishes to encourage new models of investment in commercial renewables³⁰; we detail those currently in place here.

The first point to make is about the variety and complexity of the models available and being used. As shown below, there are a range of factors which characterise projects; in the sections below, we discuss in more detail the methods of raising finance and associated legal structures.

| Characteristic | | Types | Examples |
|----------------|-------------------------------------|------------------------------|---|
| 1 | Method of raising community finance | Gifted to community | Fintry DT, South African Community Trusts |
| | | Community body | Local development organisations |
| | | Individuals | Co-operatives ('share raises'), crowd-funding ('debentures') |
| 2 | Legal structures | Of project vehicle | Many SPVs, LLPs |
| | | Of community entity | Many Development Trusts, charities, private limited social enterprises, bona fide co-operatives, community benefit societies |
| 3 | Respective roles | Community leads | Neilston, P & L Turbines |
| | | Intermediary leads | Energy4All |
| | | Developer leads | Fintry, Stewart Energy |
| 4 | Timing of community investment | Pre-planning | P & L Turbines |
| | | Post-planning | 'Energy4All model', Stewart Energy |
| | | Through 'community warrants' | Several in development |

Table 1: Overview of key characteristics of shared ownership models

5.1 Community Co-Investment

Some commercial energy projects involve communities as a traditional investment partner (see Figure 5). Community organisations buy shares in a project vehicle, and receive a dividend from the sale of electricity. Projects in this category are sometimes termed 'joint

³⁰ <http://www.scotland.gov.uk/Resource/0045/00457876.pdf>

ventures’, although this term could also be applied to other models (see below) in certain circumstances and is thus perhaps best avoided to prevent confusion. Even amongst the few projects of this kind in the UK, large diversity exists in the legal arrangements and business models used. Projects also differ in other important respects, such as *how* the community raises finance for its stake in the development, *when* the investment opportunity was made available to the community, and when the actual investment was made.

‘Community Co-Investment’

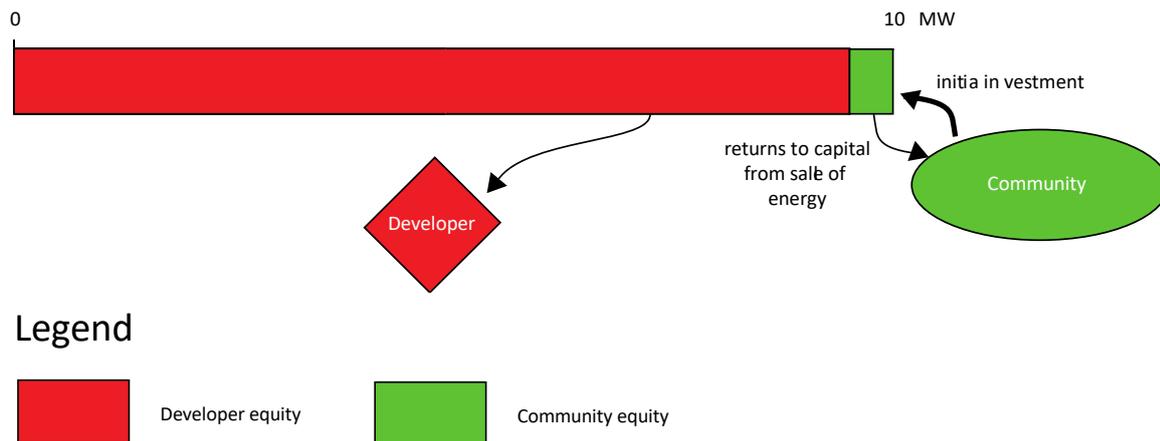


Figure 5: A community co-investment arrangement. An example is the Neilston Community Wind farm in East Renfrewshire.

In Scotland, shares in projects are usually held in trading companies that are fully-owned subsidiaries of parent community organisations. The latter are typically some form of local development organisation, such as a Development Trust, limited by guarantee and often with charitable status.

Examples of co-investment arrangements include the Neilston Community Wind Farm (East Renfrewshire) (page 30), P&L Turbines (Highlands) (page 38) and the Stewart Energy project (South Lanarkshire) below.

Case study 1: Stewart Energy (South Lanarkshire)

With support from CARES, the Lesmahagow Development Trust is in the process of investing in a three-turbine project with a farmer-developer in South Lanarkshire. Although many details are still confidential, the model is already attracting significant interest, providing a noteworthy example of what is possible in terms of partnering up local communities with small land-owning rural enterprises. The Trust received funding through CARES to employ consultants to explore the feasibility of a turbine project. As part of the project the Trust is organising a development plan and consulting local residents about their ideas for future developments in the community financed by returns from the renewable energy project.

5.2 The ‘Fintry Model’

The ‘Fintry Model’ is a unique kind of shared ownership model. It is named after a well-known agreement struck between Falck Renewables and the Fintry Development Trust on

the 35 MW Earlsburn Wind Farm in Stirlingshire in 2007³¹. In this arrangement, the community owns a ‘virtual turbine’. What this means is that the community owns one of the fifteen turbines, but had to raise the capital to be able to do this. Difficulties in doing this resulting in the developer lending the community the capital to be able to own the turbine, and negotiating a repayment scheme with the community. After the sale of electricity generated by the turbine is used to pay for the turbine itself, surplus flows to the community organisation (see Figure 6). This model is administratively and legally complex, and much of the work needs to be done by the developer. As a result, developers have not been enthusiastic about replicating ‘Fintry-style’ projects elsewhere.

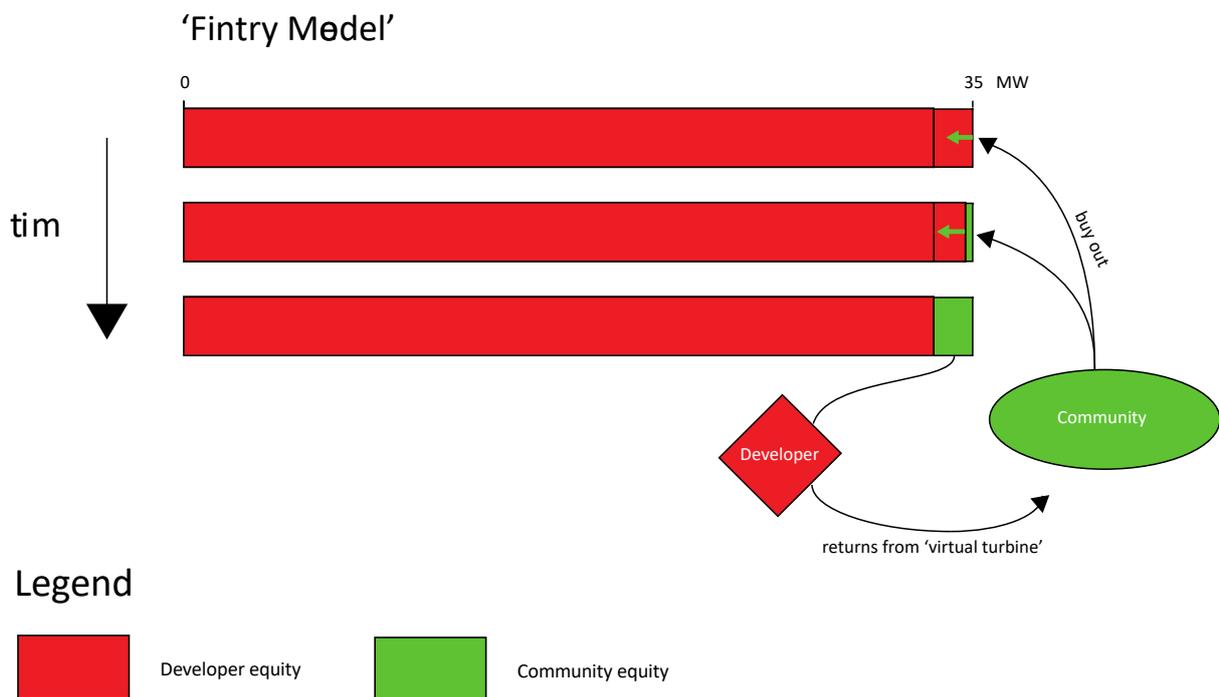


Figure 6: The ‘Fintry Model’: a bespoke community benefit arrangement that works somewhat like a mortgage. This model was adopted in 2007 by a partnership consisting of the Fintry Development Trust and Falck Renewables on the Earlsburn Wind farm in Stirlingshire, but has not subsequently been replicated anywhere.

Case Study 2: Fintry³²

Based on the initiative of two villagers, in 2003 the community council of Fintry was about to explore some sort of renewable energy generation in the local area, when they were informed by West Coast Energy about their intention to erect the 14 turbine Earlsburn wind farm nearby. The community therefore decided to explore a shared ownership approach

³¹ www.fintrydt.org.uk/

³² FDT [Fintry Development Trust] (2014) The wind turbine. Available online at: <http://www.fintrydt.org.uk/the-wind-turbine/>

with the developer West Coast Energy and the ultimate owner Falck Renewables, rather than pursuing an autonomous project. The Fintry Development Trust, which consisted of four members who formed the Fintry Renewables Energy Enterprise, entered negotiations with West Coast Energy and Falck about the project. Although there were some other options for community involvement, such as a co-operative buy-in and standard community benefit payments, the group chose a community turbine as the best option for the community.

All three parties agreed to add another turbine to the wind farm, which would be subject to its own planning application and grid connection. This turbine would be owned by the community, who would pay the capital costs. The community trust commissioned a feasibility study for their turbine which was covered by a grant from the Scottish Community and Householder Renewables Initiative. The planning application was submitted with support from West Coast and Falck and approved by Stirling Council. However, the feasibility study demonstrated that the community required £2-2.5m of capital to realise the project. Despite initial negotiations with banks and commercial partners, Falck suggested that they lend money as part of their overall project finance, leaving the community with the ownership of a 'virtual turbine' from the outset. Falck and the community then negotiated a repayment scheme of the loan.

Essentially, the relationship between the developer and the community is that the Trust (through its trading subsidiary Fintry Renewable Energy Enterprise) receives income generated from the wind farm which is worth one turbine (i.e. the equivalent of the revenues of 1/15 of the total income). The revenues of this share are then donated by the Enterprise to the Trust and represent the returns generated by the 'community turbine'. Like community co-investment models, the 'Fintry Model' sees a community partner share in the fortunes – good or bad – of a wind farm. Returns to the community are not fixed, as they would be in traditional '£x-per-MW' benefit payment arrangements, but are dependent on extrinsic factors: wind speed, electricity prices, obligation certificate prices, possible changes to finance terms, etc. The crucial difference from other shared ownership models is that, in the case of the 'Fintry Model' no money is raised or invested by the community at the outset; and that the proceeds of the community's 'virtual turbine' are used to pay for it.

5.3 The 'Windcrofting' Model

The so-called 'wind-crofting' model (Figure 7) was designed specifically to facilitate community buy-in into commercial wind farms, and is currently being piloted at several sites across Scotland. It is very similar to traditional co-investment models, with one important difference: through a simple financial instrument called a 'community warrant', communities are given the right but not the obligation to invest before a planning determination is made. For the community, which often struggles to raise finance at the pace of the private sector, this model has the advantage of 'buying time': the investment

can be made at a pre-agreed time and price after a planning determination has been made (see also section 6.5 on the issue of timing). For the developer, meanwhile, the risk of having to reach financial close prior to applying for planning is removed – but having issued community warrants, developers are still able to demonstrate their ‘community-friendly’ approach to planning authorities.

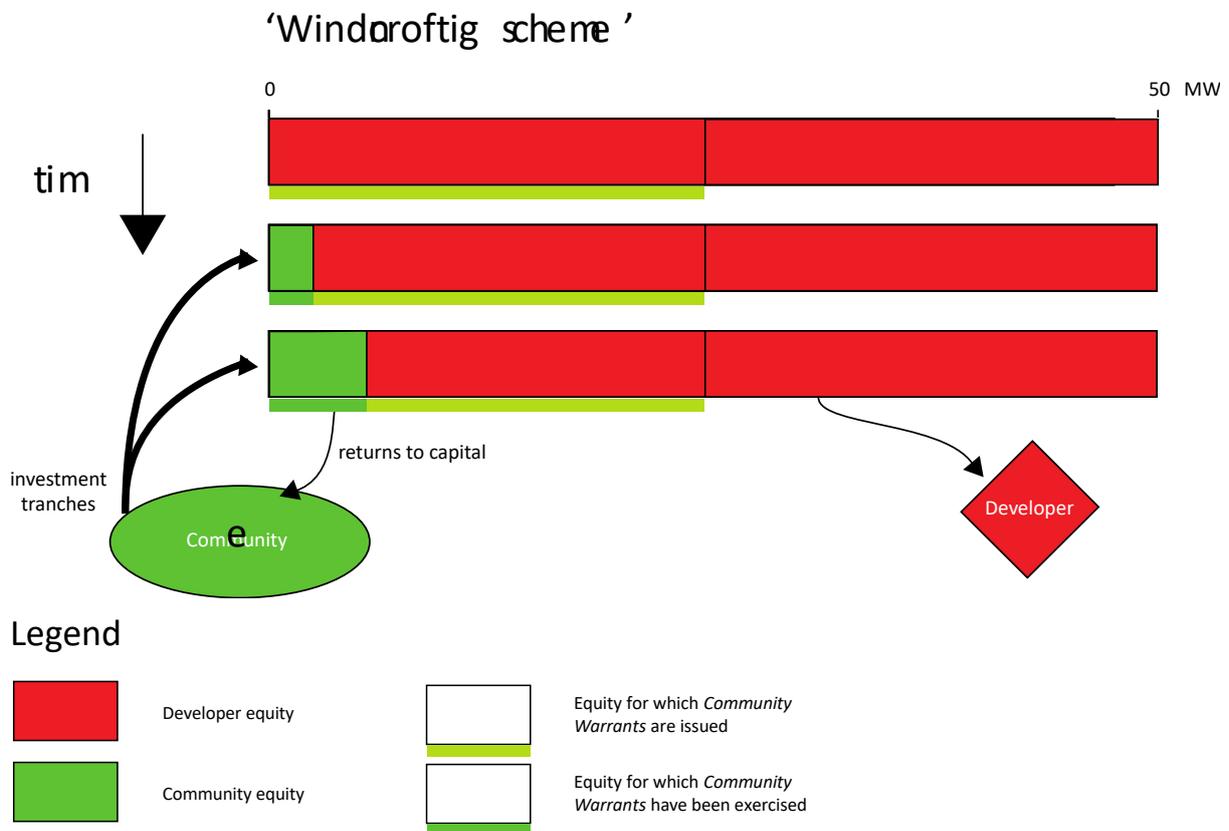


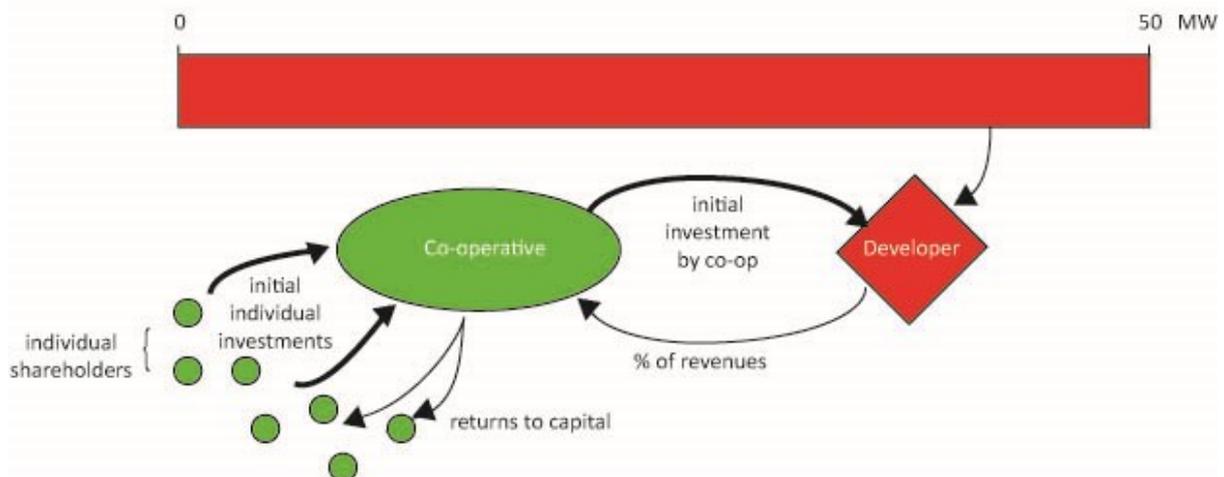
Figure 7: The ‘wind-crofting’ model.

Because of their fledgling state, details on projects making use of the wind-crofting model are currently confidential.

5.4 Revenue-sharing arrangements

Because of their legal status, it is problematic for some community organisations to own equity *sensu strictu* in renewable developments. In such cases, contractual arrangements can be made which entitle community organisations to a share of revenues flowing from the projects (Figure 8). Such ‘revenue-sharing arrangements’ are commonly used where community organisations are incorporated as Industrial and Provident Societies (‘ISPs’, commonly called co-operatives). An initial investment is made by selling shares to ‘co-op’ members. Once the development is up and running, a proportion of revenues from the project flows to the co-op, which distributes it to its members. An increasing number of co-operatives use a proportion of their income to fund local community projects, rather than distributing it all to their members.

'Revenue Sharing Arrangement'



Legend



Figure 8: A revenue-sharing arrangement

Examples of revenue-sharing arrangements include several projects facilitated by Energy4All in conjunction with Falck Renewables as commercial partner: Boyndie (Aberdeenshire), Great Glen (Highlands), Isle of Skye (Highlands), and Kilbraur (Highlands) – see below.

Case Study 3: Kilbraur Wind Farm³³

Kilbraur Wind Farm consists of 27 turbines with a total capacity of 67.5 MW. It was initiated by Falck Renewables and is owned by Kilbraur Wind Energy Ltd as a subsidiary of Falck Renewables. The community is involved through a co-operative society (incorporated as an IPS) which operates in a similar way to a limited company. Voting rights are equally distributed amongst the members regardless of their shares and investments in the project. The co-operative is managed to the benefits of its members who are protected through its limited liability.

The wind farm was developed by RDC Scotland in association with West Coast Energy. Planning permission for the first 19 turbines was granted in March 2006 and operation commenced in October 2008. The co-op consists of 528 members who raised £1,043,900 to purchase a stake in the wind farm on 3rd Nov 2008 from Falck Renewables. A single class of shares has a nominal value of £1, whereas the minimum share is £250 and no member of the co-op is allowed to hold more than 20,000 shares. All members who hold shares in the co-op receive annual dividends on their shares. An extension of eight turbines was

³³ Falck Renewables (2011) Kilbraur. Available online at:

http://www.falckrenewables.eu/attivita/elenco/kilbraur/overview.aspx?sc_lang=en; Kilbraur Co-op Ltd. (2014) Welcome to Kilbraur Wind Energy Co-operative Ltd. Available online at: <http://www.kilbraur.coop/>

completed in 2011 and the members of the co-op were given the opportunity to purchase a further stake in the extension.

In addition to the benefits through individual dividends for members, Falck also set up a standard community benefit fund which brings an annual income of £95,000 for local communities in the area, which is based on payments per produced MWh and installed MW. This Kilbraur Community Benefit Fund is funded by Kilbraur Wind Energy Ltd which supports any activity that benefits the local communities. Residents and community groups were invited to discuss how the community benefit package should be arranged and how funds could be invested in the local area. In summary, the development of the wind farm project was led by the developer, and the community as a co-operative society bought in to the project once it raised the capital and the wind farm was fully operational.

5.5 Methods for communities to raise finance for investment

We have so far discussed some of the different models that have been used to facilitate community investment. In this section, we focus in more detail on some of the means through which communities are able to raise the money to allow them to invest.

5.5.1 Debentures

This method works by selling debentures to members. These debentures effectively act as loans, with both interest and principal (the original amount invested) wrapped into repayments. The debentures will have a fixed term, over which repayments are made – this can range from a few years, to the entire project lifetime. Surplus profit remaining after members are paid flows to the community body itself (see Figure 9 below). An example of such a system is that used by Abundance Generation³⁴. An example of a project that uses this method is the Hoo solar scheme in Monkton, Kent, which raised £385,000 through 300 investors. Another example is Resilient Energy Great Dunkilns, Forest of Dean, which raised £1,400,000 through 429 investors.

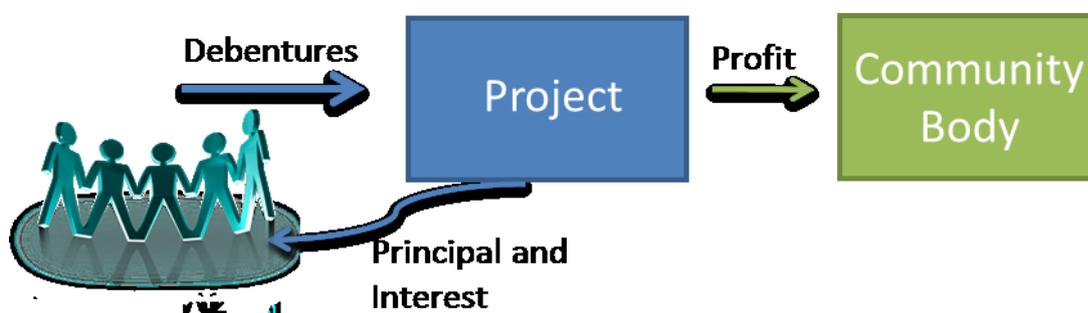


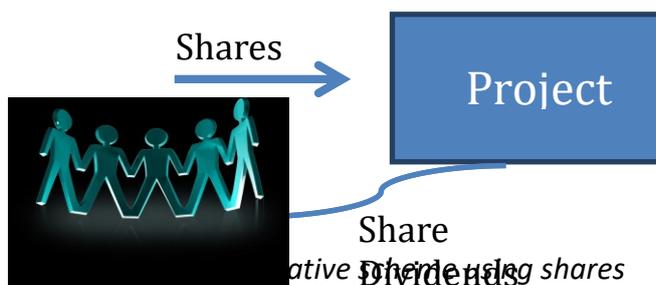
Figure 9: A scheme using debentures

³⁴ www.abundancegeneration.com/about/

There is no reason why this model could not be employed to invest in commercial projects, although to date the use of 'co-operative equity' (see below) has proved more popular when it comes to community buy-in into commercial projects.

5.5.2 Co-operative Equity

This method of raising community finance works by selling shares to members, which entitle them to a certain percentage of profits flowing from wind farm projects. In this arrangement, co-operative members act as the community, and are responsible for setting the rules as to what happens with project income. Profit may be distributed amongst the shareholders, or it might be used for more charitable purposes, or possibly a mixture of the two. An example of such a system is that used by Energy4All³⁵. Examples of community projects that use this method and have raised more than £1,000,000 are Boyndie, Kilbraur and Isle of Skye energy co-operatives, which have all allowed 'buy-in' into commercial wind farms. The legal structure in which members have one share and one vote, is called a bona fide co-operative.



5.5.3 Loans and grants

The map on page 18 lists the range of different sources which may provide funding to allow community groups to invest in a commercial energy project. The most important of these is the financial support offered through CARES³⁶, currently administered by LES³⁷. Two key sources of finance are available to communities wishing to invest; a start-up grant of up to £20,000; and pre-planning loan of up to £150,000. The start-up grant allows communities to investigate the viability of investing in a commercial project, for example, by commissioning a consultant-led feasibility study or conducting community consultation exercises. The pre-planning loan gives communities the opportunity to progress beyond feasibility. The loan is provided to cover up to 95% of a community's pre-planning costs, and if a project is unsuccessful, communities can apply to have it written off.

At the next stage, if a project does achieve planning permission, communities can apply to the Renewable Energy Investment Fund (REIF), which is delivered on behalf of the Scottish Government and its enterprise agencies by the Scottish Investment Bank, the investment

³⁵ www.energy4all.co.uk/

³⁶ <http://www.scotland.gov.uk/Resource/0045/00457861.pdf>

³⁷ <http://www.localenergyscotland.org/funding-resources/funding/applying-to-cares/>

arm of Scottish Enterprise. REIF has flexible capital support available for communities which can be adapted to the specific project which requires finance.

In addition, the map shows a wide range of other potential sources of funding; however, many of these may be hard to access for communities, particularly commercial banks, a point we consider in more detail below and in section 8.3.1.

In summary, this section has outlined the different funding models that are available to and being used by communities investing in commercial energy projects. It has demonstrated that different models are available, and that the choice is likely to be determined by the particular project, the role and response of the developer, and the access to funds available. Despite the range of models and *potential* funding sources available, a key issue that arose throughout our research was the difficulty of accessing the requisite finance. Indeed, this was often cited as a key reason why community investment in commercial projects does not move forward. We discuss this, and other impediments to community investment, in the next section.

Section 6: Challenges to shared ownership

As has already been mentioned, despite a range of potential benefits from shared ownership, our research also identifies a number of hurdles, as listed in the figure below from our survey. We discuss each of the hurdles identified in turn.

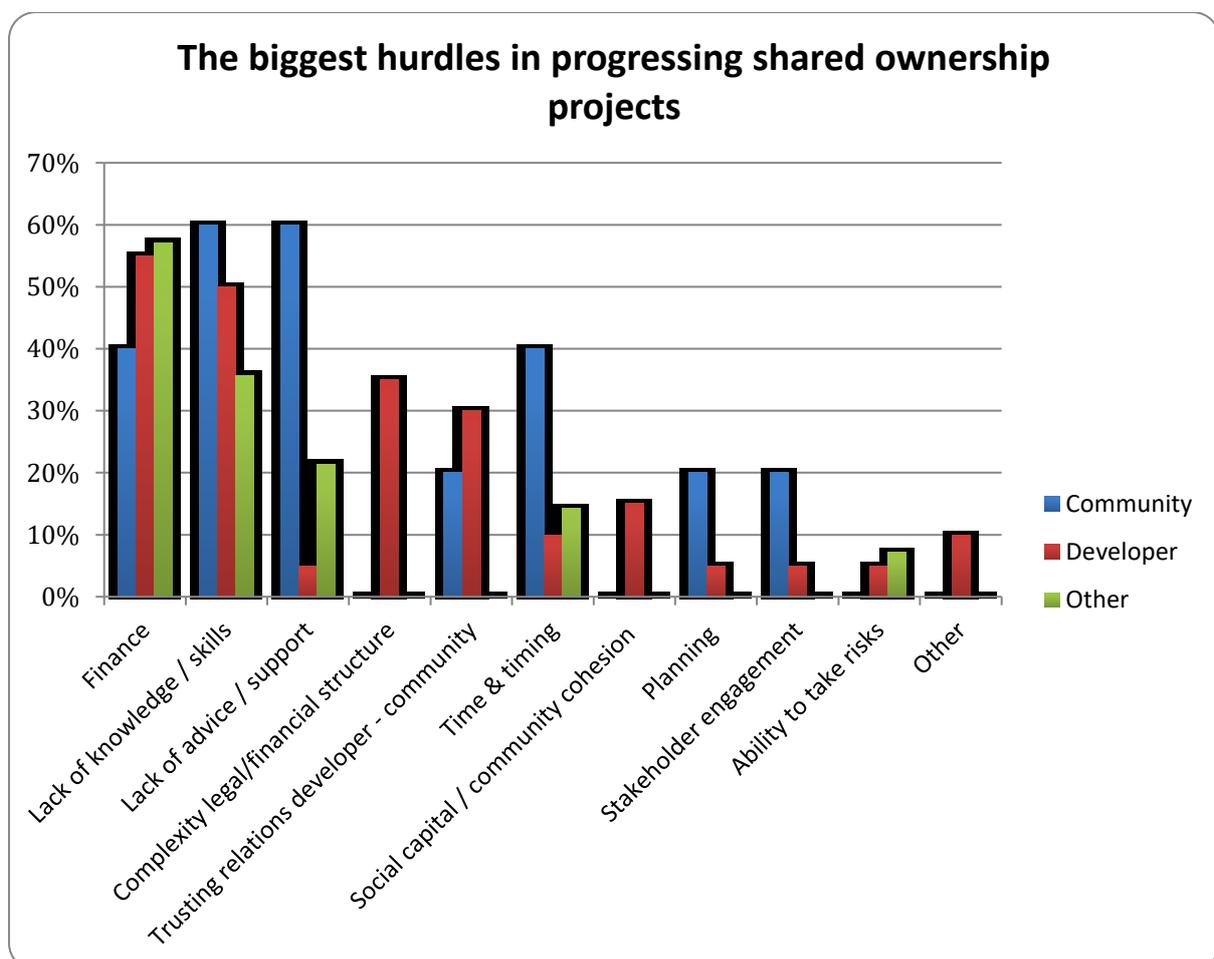


Figure 11: Hurdles in progressing shared ownership projects

6.1 The Ability to Invest

“Finance is undoubtedly the biggest hurdle just now”

Whilst there are a range of sources of finance available (illustrated in the map on p18 and discussed in section 5.3), as shown in Figure 11 above, our research found that finance for shared ownership projects was a key issue. It was the most commonly cited problem in our survey, and reiterated throughout our research. It was reported that communities frequently struggle to secure finance, and raising equity locally remains far from being straightforward. For some communities, this was an insurmountable hurdle; because of the difficulties or perceived riskiness of taking out a large loan, some communities preferred to accept community benefit payments and receive a guaranteed income without the risks that community investment involves. Even if communities are willing to raise the finance to invest, our research highlights the perceived lack of knowledge of how to go about doing so; and the limited funding sources available, particularly because *“banks prefer larger projects, and prefer sole ownership”*. The case of Neilston Community Wind Farm demonstrates the difficulties in funding that even ultimately successful projects experience, and that different sources may need to be drawn upon simultaneously: as a result of a complex process, the Neilston Development Trust received a loan for 80% of their stake from the Co-operative Bank, and then had to raise the rest of their stake through a variety of different loans (from Social Investment Scotland, Charities Aid Foundation, Big Issue Invest and the West Lothian Fund). So while there are funding opportunities available for communities (for example, through the different strands of CARES, REIF, and the recently announced Local Energy Challenge Fund³⁸), our research found at the very least a *perception* that finance was very difficult to raise, and that this was off-putting for communities.

In part as a result of communities struggling to obtain funding in order to invest, and others showing little interest in investing, there have been calls to diversify the number of shared-investment models available. Already there has been a recent growth in co-operatives in Scotland (see section 5.4), where investment is put forward by individuals rather than community groups. This option can eliminate the need for debt finance. Some of our respondents were supportive of the suggestion of opening up investment opportunities to non-geographical communities, arguing that doing so would increase public participation and ownership of renewable energy – and would generally increase support for renewable energy developments in the process. However, concerns were also voiced about this proposal. Individual investment (through the co-operative model, for instance) is limited to those individuals with sufficient savings to invest and could potentially undermine social cohesion if some community members are benefiting whereas others are not. Expanding the geographical scope was sometimes deemed potentially problematic as it might mean

³⁸ <http://www.localenergyscotland.org/funding-resources/funding/local-energy-challenge-fund/> Note – this fund was very recently announced, and after we had conducted our focus groups and data collection, so it was not mentioned by our respondents

that developers shun local communities if they are limited in their resources or skills, in favour of more capable distant community groups. This in turn could create ill feelings between the local community who have to 'put up' with the development, and the distant community that is set to benefit financially from it.

Thus, although expanding the ways in which individuals and communities can invest in renewable energy has its benefits, there are also concerns regarding the inclusiveness of certain models of investment that will need to be addressed; and what is intended to be achieved by promoting shared ownership opportunities needs to be considered. Although encouraging a wide range of individuals and communities with the required finance and resources is potentially the quickest way to increasing the number of shared ownership projects, it runs the risk of undermining social cohesion and limiting community development efforts. We return to this point in section 6.6 below.

6.2 Information, knowledge and skills

Our map in Figure 4 demonstrates a range of sources of information; however, it has been recognised that although interested communities can draw on the assistance of a large number of intermediary organisations, there can be significant challenges with locating and accessing the requisite information and expertise.³⁹ Indeed, almost half of those who responded to our survey identified lack of knowledge as one of the biggest hurdles in progressing shared ownership projects. Almost two-thirds of the community groups and half of the developers identified this as a key impediment. Although there are a variety of information sources available to community groups, some indicated that this information is not sufficient, others said that the signposting to the various forms of information and assistance could be better, and one respondent said that *"the vast array of information is daunting and can put people off even trying to grasp a basic understanding of how it could work"*. The picture that emerges therefore is not necessarily one of too little information (as demonstrated by our map on page 19); but that it needs to be clearer and more accessible. Additionally, our research showed there is a need amongst all stakeholders, including developers, councils, and landowners, for greater knowledge and information regarding shared ownership projects. Developers told us that they feel they currently have nowhere to go for advice, with their current knowledge either developed through in-house research or trial and error. Councils were seen to be inexperienced and unsure about their role. Our respondents described a need for targeted information, made available to different stakeholder groups, and also made publically available to help different stakeholder groups understand what knowledge other stakeholders may have.

Related to the potential difficulties associated with locating and accessing information is the significant issue of community capacity and skills. As one respondent said, *"finding people in the community with the time and necessary drive to make the project happen"* is a key hurdle. Community groups are faced with the challenge of maintaining the motivation of

³⁹ DECC (2014) Community Energy Strategy. People Powering Change

volunteers throughout lengthy and uncertain planning phases⁴⁰. In order to be successful community groups require a mix of skills (including community engagement and consultation; financial and accounting skills; project management and delivery; business planning; monitoring, evaluation and impact assessments)⁴¹. For example, the financial details for the Fintry model, detailed below, are complex; perhaps dauntingly so. Both developers and community representatives acknowledged the issue of community skills. A significant number of developers indicated that one of their key concerns is whether local people have the necessary skills, time and knowledge to take on projects and whether they are capable of raising the necessary finance. Likewise, community representatives acknowledged that not all communities will have the required skills or knowledge prior to their involvement in a project.

Case study 6: Financial model for Fintry

The Fintry Development Trust ('FDT') shares in the revenues of the Earlsburn wind farm through a contractual arrangement, in which revenue components are multiplied by a negotiated set of 'community multipliers'. Net revenue to the FDT can be estimated on the basis of the following formula:

Net Revenue to the community, per MWh production of total wind farm,

$$R = (OR) \times [(CM1 \times TBP) + (CM2 \times ROC) + (CM3 \times ROCREC) + (CM4 \times LEC)] - OC - FC$$

Where multipliers, revenue- and cost components are:

OR: Ownership Ratio, or the relative amount of the total wind-farm held as a community 'virtual turbine'. In the case of Fintry, OR = 0.0604, or just under 1/15th. In the case of the Altaveedan development, a 2 MW community 'virtual turbine' on a wind farm consisting of 9 x 2 MW installations would correspond to an Ownership Ratio, OR = (2 / 18) = 0.1111;

CMN: Community multiplier N. This is set of multipliers, one for each individual revenue component. Multipliers take values less than 1, and thus act to decrease the net revenue to the community. The higher the value of the multipliers is set through negotiations with the commercial developer partner, the better for the community;

TBP: UK traded bid price for electricity (in £/MWh);

ROC: 'Buy-out price' of Renewables Order Certificates ('ROCs'), a form of government subsidy for renewable energy generation (in £/MWh);

ROCREC: The ROC Recycling rate, a form of government subsidy for renewable energy generation (in £/MWh);

LEC: Levy Exemption Certificate, an entitlement to electricity generators that are exempt from the Climate Change Levy (in £/MWh);

OC: Operating Costs (in £/MWh);

FC: Finance Costs, including repayment of principal and interest on the community 'virtual turbine' (in £/MWh).

⁴⁰ Willis R. and J. Willis (2012) Co-operative renewable energy in the UK: a guide to this growing sector.

⁴¹ *Ibid*; Haggett, C., Creamer, E., Harnmeijer, J., Parsons, M., and Bomberg, E. (2013) *op cit*

6.3 Need for advice and support

Respondents from all groups in our research felt that they lacked knowledge and skills. In terms of addressing this, increased availability of different sorts of advice, and from different sources, was felt to be beneficial. It was suggested that advice was needed for *“developers to show them how community ownership can be achieved without undue complication, risk or expense”*, and that *“free legal advice on company structures for developers who are at the early stages of considering including community ownership in their developments”* would be helpful in taking shared projects forward, reflecting the number of developers who cited this as an issue in our survey (see Figure 11). This was suggested alongside *“good quality professional advice to communities”* even just to let developers know about what support is available, and when. It was also noted that the advice, tools, and models given to communities needed to be in an easy to understand format so that they didn’t feel *“overawed”* by the process.

It was consistently suggested that this advice should be offered by a third party – this is both because the developer might not be able to do so: *“communities need to be helped at every stage of the process and this cannot always be offered by the developer”*; and because this should be an *“independent person who is able to support communities and facilitate them coming together”*. This person or organisation would need to be clearly identified and well supported to be able to provide *“personal back up”* for information given to communities, because projects *“need to be managed well to ensure the benefit”*.

6.4 Trust between the community and the developer

Throughout our research, the issue of trust between developers and communities emerged as an important hurdle to progressing shared ownership projects. Stakeholders described skewed power relations between an ‘all-knowing’ developer and a ‘clueless’ community, which they considered to be at the source of this distrust, and an *“inherent distrust amongst communities of developers inviting them to be part of project”*. It was clear that this related at least in part to misunderstandings or (perceived/actual) lack of communication between different parties and could potentially be mitigated through clearer communication.

Some community representatives indicated that they were worried that developers were only pursuing shared ownership to further their commercial interests, for example to win the community’s approval for the project; and indeed, we do have some evidence for this (see section 4.4). Furthermore, a requirement for communities to invest up front without immediate or short-term returns was identified as a further source of distrust between community groups and developers.

In addition, developers had their concerns about community groups. They indicated that community groups often do not understand the commercial constraints facing developers, and that this creates unrealistic expectations about developers and potential partnership projects. Thus, a key reason why there might be a lack of trust between the community and the developer is a lack of understanding on both sides regarding the challenges and

constraints that each of them experience. There is a recognised need for more open relations between communities and developers⁴². For shared ownership projects, this may include developers being open about their (financial) motivations and what role and responsibilities they expect communities to adopt. Similarly, communities may need to be upfront about their capabilities and what assistance they might require in order to participate in a project. This openness was seen as being “*essential from start to end*”, and would need to be conducted in ways which allowed community groups to “*access the language of development and investment models*”. Indeed, for one respondent, this was part of the wider need to have a good project – a well-structured, well financed project at the outset could then be transparent so that all parties understand the deal.

It is also worth noting some differences between developers in their approaches. As we discussed in section 4.5, some developers enter into shared ownership as a way of reducing public opposition, thereby improving planning prospects. For some developers therefore, the issue of trust was not a predominant one: “*from our point of view shared ownership would be better to set up once a project is commissioned and FiT-secured*”. Others took a different view: “*once developers understand that they must work with communities in a fair and equitable way, more communities will engage with renewables which in the long-term will change the culture of communities from passive users of services to active, resilient communities*”. Previous research has suggested that good engagement with communities and efforts to build trust matters not just for each individual project, but for the wider image of the renewables industry more generally⁴³. There is clearly a balance to be struck between trying to achieve planning success in a particular case (and perceptions of the best way to achieve that), and the development of the industry as a whole.

6.5 Timing

Through our research we found that developers often find it difficult to identify the best time to involve the local community. Although some participants emphasised the benefit of early engagement when developing a project (“*engagement should start almost before project is properly up and running*”), and that this should be continuous (“*ensuring the community group moves at the same speed as the developer*”), some developers argued that early engagement can also be problematic (see above). If the idea for a project is not yet fully developed, it may be more difficult to gain the community’s support. Furthermore, if a project doesn’t go ahead – for example if planning permission is refused – then this will have potentially wasted the limited time and resources that community groups have available.

It was suggested that a suitable solution could be to start a dialogue between developer and community early on in the process, but to only fully involve the community at a later stage. However, developers will need to be aware that if a community perceives that it is being

⁴² Aitken et al (2014) *op cit*

⁴³ Aitken et al (2014) *op cit*

excluded from the process this could undermine trust between the two parties and hamper co-operation at a later stage.

There is likely to be not one single ‘right’ way for developers to engage with the local community. The extent to which communities can be involved throughout the process will also be dependent on their capacity and finances.

6.6 Community cohesion and defining communities

A recurring issue throughout our research was the definition of what is a ‘community’. This is a topic of much debate in the academic literature⁴⁴, which documents the difficulties in defining communities, conceptually or even geographically. It is also the case that communities are not homogenous, and very disparate interests and views can co-exist within them.

This can have practical difficulties for progressing shared ownership projects. Indeed, the developers we spoke to indicated that it can be difficult to define and negotiate with communities near a proposed development, for example if there are multiple communities with conflicting interests or priorities, or if the people within in a single community or location are divided in their opinion. Both community representatives and developers struggled to cope with having both opponents and supporters for developments in one community. In addition, some respondents also suggested that there often seems to be a disconnect between communities and those who represent them, and the need for *“inclusion of community groups other than the community councils”*.

Thus, there was a desire expressed by our respondents for both developers and community groups themselves to improve their engagement with the wider community; to try and ensure that the diverse range of views are captured, and to be as inclusive as possible. It was noted that an independent facilitator to guide the developer and community group(s) through this process could be very helpful. We have already discussed in section 4 the potential benefits of community investment in terms of local acceptance; what is clear from our research and the international case studies in section 7 is that community investment opportunities are no ‘magic bullet’. Communities may still have concerns about a project; about which the opportunity to invest is unrelated. The case of Bandirran wind farm below demonstrates the value of shared ownership; and also that it is no guarantee of local support.

Case Study 7: Bandirran Wind Farm

⁴⁴ Haggett et al. (2013) *op cit*; Walker, G. (2011) The role for ‘community’ in carbon governance. Wiley Interdisciplinary reviews: Climate Change. 2:5, 777-782; Bell, C. and Newby, H. (1971) Community studies: an introduction to the sociology of the local community. London: Allen and Unwin; Cohen, A. (1985) The symbolic construction of community. London: Tavistock; Delanty, G. (2003) Community. London: Routledge.

The Bandirran Wind Farm wind farm proposal has been developed by Banks Renewables and offers community investment. This can be through purchasing a direct stake in the wind farm which creates shares in the annual gross revenues; or purchasing an equity share of the wind farm once it is commissioned. These options allow the community to design its long-term guaranteed revenue stream. The proposed wind farm consists of six turbines with a total capacity of 20.4 MW. The proposed 2.5% of annual gross revenues would result in an income of £4.2m over the expected life-time of 25 years⁴⁵. This share is also underwritten with a guaranteed minimum community payment of £5,000 per installed MW per year equating to a total community funding of £2.5m over 25 years. In addition, a community fund will finance identified community projects within 10km of the proposed site covering four community councils⁴⁶.

The project was launched in early 2013, and liaison with local communities included a number of community meetings with council and community groups as well as exhibitions in order to engage with local communities, to involve them in the wind farm design, to explore potential benefits from revenues and funds. In late 2013, Banks Renewables delayed the planning application to provide additional time and information for communities to find out more about the proposal and the partnership scheme. In doing so, they ran a series of community panel meetings led by independent facilitators and attended by experts to discuss and provide in-depth technical advice. However, despite wide-ranging community engagement activities, the possibilities of owning shares and financial benefit from the wind farm, and support from local landowners and businesses, a substantial local and national opposition emerged to fight against the Bandirran Wind Farm. Local opposition groups and 'Scotland Against Spin' described the community benefits as bribery and coercion. Also, at least one of the four community councils that could financially benefit from the development submitted a formal objection to wind farm proposal. The planning application was submitted to Perth and Kinross Council in January 2014, and is pending consideration at the time of writing.

In addition to the issue of having different interests represented within a single location there was also the question of whether a 'community' needs to refer specifically only to the people living near a proposed development. Several respondents questioned this idea and argued that opening up community involvement to groups that are geographically distant could help to foster more widespread participation in renewable energy, specifically from urban groups. If local communities are unable or unwilling to invest, then other community groups should be given the chance to invest. Thus, there was a desire among the developers

⁴⁵ Banks Renewables (2013) Bandirran Wind Farm. A proposed partnership with Your Community. 26th June 2013. Available online at: <http://www.banksgroup.co.uk/wp-content/uploads/2013/07/Bandirran-Presentation-A-Proposed-Partnership-with-Your-Community.pdf>

⁴⁶ Banks Renewables (2014) Bandirran Wind Farm Proposal. Planning Statement. Available online at: <http://www.banksgroup.co.uk/wp-content/uploads/2014/02/BANDIRLAN-PLANNING-STATEMENT.pdf>

to find out which communities are interested and capable of participating in a shared ownership project, and suggestions made about a 'database' of opportunities to allow communities who don't have renewables on their doorstep to invest in projects elsewhere. However, other research participants noted there are also downsides to expanding the notion of community. It might create a situation in which developers choose the most capable community with whom to work, no matter their geographical location. This in turn might hamper the capacity building efforts of local people, with the benefits of shared ownership being limited to those already more capable. The case below illustrates some of the benefits and difficulties of drawing on a non-geographic 'community', at least in part.

Case Study 8: Community Turbines (Invernesshire)⁴⁷

'Community Turbines'⁴⁸ is an innovative community renewables project. Three different not-for-profit community organisations are involved in developing a small two-turbine site in Invernesshire. Two of these, 'Portobello Transition Town' and 'Greener Leith', are based in Edinburgh, while the third is a local community council. Initial funding was provided by Centrica's 'Energyshare' grant. The project in Invernesshire took shape as the initial intention of 'Greener Leith' and 'Portobello Transition Town' to build a turbine in Seafield area of Edinburgh failed when landowners Scottish Waters pulled out of the project. The two partners therefore looked for an alternative location for two turbines with a combined capacity of 1.6MW, and secured land south of Inverness. Portobello Transition Town and Greener Leith formed a joint company to pursue the project and will control and own the majority of the project, while consultants Scene will own a minority stake. However, Greener Leith and Portobello Transition Town intend to expand the partnership by offering part-ownership to local community groups and to buy shares of the project. The construction budget is expected to be £3 million, whilst the revenues over the lifetime of the project are expected to be £7m to be distributed between the communities participating in the project. Thus far, two partnership options for how local communities can be involved in the benefit streams from the turbines have been proposed, either through community benefits payment or through equity investments of up to 20% in the project from the outset and later annual cash returns. In this process, the project was presented in front of the Strathnairn community council and meetings were held with the Dores and Essich community.

6.7 Guidance versus flexibility

As we have discussed, both community representatives and developers suggested a need for more information and guidance. Indeed, one respondent described the need for an "*off the shelf package*" to simplify the process, and another said that local authority policy should include guidance on when developers should become involved with the community. However, we also found that although there is a desire for more guidance to be available, it

⁴⁷ Scene Consulting Ltd. (2014) Community Turbines. Invest in a turbine for your community. 28th April 2014. Available online at: <http://communityturbines.files.wordpress.com/2014/04/brochure-cover.jpeg>

⁴⁸ <http://www.communityturbines.wordpress.com>

was felt that that this should not restrict communities and/or developers from bringing forward new innovative solutions towards partnerships, not least because “*every project is different*”. Some communities were seen as more able than others to take a project forward, due to differing resources, time, expertise, and funding. Stakeholders emphasised that it is important for projects to be developed in a way that is appropriate for the local context and circumstances, a point strongly supported in academic research⁴⁹. Developers described the need for flexibility, particularly in the early stages of developments.

Thus, although there is a desire for standard templates and guidance to be made available, it is important that this is done in a way that does not restrict stakeholders from ‘thinking outside of the box’ in order to find locally contingent solutions. There is likely to be not one single ‘right’ way for developers to engage with the local community. The extent to which communities can be involved throughout the process will also be dependent on their capacity and finances.

Having discussed the main hurdles to greater shared ownership, we now consider current practice in a range of international case studies, and draw out the key points of significance and learning for Scotland, before discussing a range of resources to address the issues raised.

⁴⁹ Hagggett. C. (2010) The principles, procedures, and pitfalls of public engagement in decision-making about renewable energy' in P. Devine-Wright (ed.) Renewable Energy and the Public, London: Earthscan

Section 7: International Comparisons

This section reviews community investment in commercial energy projects in selected international case study countries. These countries have been selected to embrace a wide range of institutional conditions, reflecting different stages of community investment possibilities and anticipating some transferability of experiences to Scotland. The selected countries are:

- *Denmark and Germany*, due to their mature community renewables sector, the domination of community projects and community-driven rise of renewable energy projects
- *Canada and Australia*, due to their similarly immature but nascent community renewables sector under changing (Canada) and unfavourable (Australia) institutional conditions
- *South Africa*, due to its immature renewables sector and unique planning regime based on procurement and demanding community -engagement and –benefit requirements

The table below provides an overview of the key characteristics of community investment in each of the case study countries. The sections that follow provide brief summaries for each of the countries, compare key features for community investment regimes and highlight key points relevant to Scotland. A more comprehensive description of the current status for community investment in renewables in these countries can be found in Appendix 1 along with a few detailed accounts of case studies in order to provide a more profound contextualisation of the relevance of community investment in renewables.

| | UK | Germany | Denmark | Canada | Australia | South Africa | Scotland |
|--------------------------------|--|---|---|---|--|---|---|
| History | Very limited community investment | Long tradition of financial participation of communities and individuals in decentralised energy projects | Pioneers of community owned projects; recent decline in communities taking projects forward, hence new policy | Very limited community investment | Unfavourable political conditions | Procurement programme based on auctions replaced a FiT scheme. This stimulates large projects and deters communities, so obligation introduced | Very limited community investment |
| Current state | Emerging: supported by UK Govt, and new DECC policy, but little uptake so far | Established: These conditions allow for a financial, conceptual and organisational participation of communities and individuals in local energy policy | Legislated: Developers have recently been obliged to offer 20% of the ownership to local people with a priority for those living within a 4.5km radius | Emerging: Legislative changes and introduction of premium FiT rates for community-commercial partnerships led to initial investment in projects, especially in Ontario and Nova Scotia | Slowly emerging: being driven forward by community groups and non-profit organisations | Legislated: Developers obligated to offer at least 2.5% community ownership and to commit a revenue for community projects (meaning they need to identify local needs at the outset) | Emerging: supported by Scottish Govt, but little uptake so far |
| Policy support | DECC 'Shared Ownership Taskforce' and Community Energy Strategy; voluntary for developers to offer ownership opportunities | Ready access to finance through community banks; a favourable, coherent and stable FiT regime since the early 90s have guaranteed dependable revenues | Favourable but variable FiT pre-conditions | Several national and provincial programmes provide financial support, knowledge and advice (particularly for aboriginal communities). Support varies between provinces | Electricity sold to suppliers under negotiated purchase agreements for a fixed time, providing some certainty for developers and communities | Legal obligation for provision of community ownership, and financing streams for communities | Community Energy Policy out for consultation; Community Energy fund; Advice from LES others |
| Main sources of finance | Private sector, charities, national funding | Co-ops raise equity, but funding programmes and | Co-ops raise equity, but also individual | Raising equity through debt finance and | Co-ops raise equity through selling | Funding for communities, which are typically suffering | CARES funding, funding from |

| | UK | Germany | Denmark | Canada | Australia | South Africa | Scotland |
|------------------------------------|--|--|--|--|--|---|---|
| | programmes, co-ops | widespread availability of local co-operative banks enable access to debt-finance | debt finance through banks possible | provincial support programmes | shares to members; loans | from levels of deprivation, is provided by national development finance institutions | REIF. Some debt finance from main-street banks available |
| Role of FiT | FiT system is focused on providing protection from the market forces | Amount of payments per kWh are determined nationally and decrease gradually | Amount of payments per kWh are determined nationally and decrease gradually. Previous removal of FiT led to reduced community projects | Tariffs are project-specific and vary regionally. Particular rural and aboriginal projects are supported more strongly through even better rates | Tariffs are project-specific and vary regionally and according to the agreements between the projects developers and electricity retailers | FiT scheme dropped in favour of a tender and bidding scheme, thus allowing larger developers to assess and offer a certain price for the produced energy as part of their bid | FiT schemes only available for smaller installations of less than 50kW. Future now uncertain for > 10 MW projects |
| Most common legal structure | Co-ops | Co-ops (variety of different models and funds mostly raised by members) | Co-ops | Co-ops (also using finance from private sector and lending institutions) | Co-ops (also using finance from private sector and lending institutions) | Community Trusts, similar to Scottish Development Trusts | Development Trusts |
| Key issues | Limited access to up front external funding; lack of coherent financing programmes; little incentives for developers to partner with communities | Comparatively easier access to lending institutions in financing early projects stages and feasibility studies | Early subsidies; Comparatively easier access to lending institutions in financing early projects stages and feasibility studies | Few but specific supportive funding programmes | Unfavourable political conditions, Very few supportive funding programmes | Community initiative hardly possible; community benefits depend on developers' choice, and distribution of beneficiary communities may be unequal. Lack of best-practice guidance as first projects only came online in Spring 2014 | Access to and knowledge about up-front funding; no specific incentive for developers |

Table 2: Comparison of key characteristics of international case study countries

7.1 Country-specific features and support mechanisms

7.1.1 United Kingdom

- Community ownership and investment in renewables is currently emerging in the centralised UK energy market, and policy support and societal awareness have led to an increasing uptake of community investment in renewables.
- Only smaller projects of less than 5MW benefit from a Feed-in-Tariff (FiT) scheme in the UK, while larger renewables projects are subject to the Renewables Obligation system.
- A recently established shared ownership task force develops consistent ways of how communities can invest in and benefit from renewables.
- Structures for a financial participation of communities include smaller community-led and self-funded projects, but also the co-operation with commercial developers and shared ownership.
- An initial problem for community investment is the limited access to up front external funding sources and a lack of coherent financing programmes that provide financial capacities for communities in addition to equity shares from within the community.
- Community groups investing in renewables can be organised as Community Benefit Societies, Corporate Societies, and Development Trusts that are all usually incorporated as an Industrial and Provident Society offering certain advantages and protections of member.

7.1.2 Denmark

- Denmark is the pioneer in community wind farms, and the bottom-up origination process dating back to the 1970s was supplemented by the provision of favourable legislative conditions.
- Energy co-operatives are the principle model for community investment in renewables in Denmark, which are originally grounded on full community ownership.
- Legislation has changed over time in order to regulate the scattering of small community-owned wind turbines and farms, to cluster larger wind farms developed by commercial developers, to deregulate local ownership and to allow access for spatially distant investors.
- In order to impede the decline of local ownership, commercial developers are now obliged to offer 20% of the ownership to local people with a priority for those living within a 4.5km radius, which may lead to an increase of developer-led partnerships.
- This has also led to communities starting to invest in offshore wind farms.

- Denmark also gives evidence of the extent to which community investment is determined by favourable and stable FIT pre-conditions

7.1.3 Germany

- There has been a long tradition of financial participation of communities and individuals in decentralised renewable energy in Germany.
- Relatively low investment volumes that can be jointly raised as well as a favourable, coherent and stable FIT regime since the early 90s have guaranteed dependable revenues from renewables, mostly solar and onshore wind power.
- These conditions allow for a financial, conceptual and organisational participation of communities and individuals in local energy policy.
- Citizen participation and co-ownership are usually achieved by a collective provision of equity, whereas the character of (co-)determination depends on the legal structure of the business model.
- A large amount of equity can usually be raised either through energy co-operatives or closed-end funds, which differ in terms of their regional confinement, project size and co-determination.
- There are several funding programmes and banks in Germany that enable a financial investment of communities or individuals.
- The widespread availability of local co-operative banks has ensured ready access to debt-finance for community owned- and co-owned renewable developments.

7.1.4 Canada

- The development of renewable energy systems and community investment in renewables represents a novel policy field in Canada and hugely differs between the provinces.
- Initial efforts of community investment took the shape of communities buying into larger commercial developments.
- Legislative changes and the introduction of FIT schemes and community-specific FIT schemes in some provinces resulted in more favourable conditions and initial community-led projects, especially in Ontario and Nova Scotia.
- Legal entities for community investment include larger community funds with particular tax advantages, co-operatives or partnerships with the private sector in order to pool capital to develop renewable energy projects.
- There are several national and provincial programmes that provide financial support, knowledge and advice for communities interested to start community renewables schemes, in particular for aboriginal communities.

7.1.5 Australia

- Australia demonstrates the least favourable political conditions for renewable energy across the case study countries, even though community groups and non-profit organisations have been trying to eradicate the barriers for community investment in renewable energy.
- Electricity from renewables is usually sold to electricity suppliers under negotiated power purchase agreements for a fixed period of time, providing some certainty for developers and co-operatives investing in renewables.
- Equity for investment is usually raised through co-ops selling shares to their members and through loans, which is then used to buy in to commercial projects or to initiate more community-led projects featuring various degrees of community involvement
- Non-profit organisations provide assistance, advice, knowledge and funding for communities interested in investing in renewables.

7.1.6 South Africa

- The South African regulatory system for renewables differs fundamentally from all the other case study countries.
- A unique procurement programme based on an auctions system for the development of renewables replaced a FiT scheme.
- Auction / tender systems tend stimulate larger developments from commercial developers and large energy companies that are able to offer better tariffs through corporate finance, which has been rather daunting for local and smaller developments
- Therefore the South African procurement programme imposes an obligation on developers to offer community ownership of at least 2.5%, but also to commit to diverge a certain amount of revenues to local socio-economic development purposes.
- Developers are obligated to include specific socio-economic development projects in their application, which requires them to deal with and identify local needs from the outset of project planning.
- Community Trusts, similar in many respects to Scottish 'Development Trusts', are by far the most commonly used legal structure for allocating community benefits. Funding for communities, which are typically suffering from levels of deprivation deprived, is provided by national development finance institutions.

7.2 Comparison of support mechanisms

A crucial precondition and support mechanism that encourages the development of community renewables in almost all of the reviewed countries has been the introduction of Feed-in Tariffs. FiTs give communities certainty of stable revenues from the produced energy for the lifetime of the project beyond their investments. However, Feed-in Tariffs

are differently characterised in the described countries. While in Germany and Denmark the amount of payments per kWh are determined nationally and decrease gradually, tariffs in Canada and Australia (PPA) are project-specific and vary regionally and according to the agreements between the projects developers and electricity retailers. In Canada, particular rural and aboriginal projects are supported more strongly through even better rates. In the UK the FiT system is more focused on providing protection from the market forces. Community energy represents an “experimental niche directly linked to FiTs” (Nolden 2013:546) and which can help to raised awareness of the economic viability of community projects. The case of Denmark also demonstrates how susceptible community projects are to the availability of FiTs and certain payments. The temporary abolishment and changes to the FiT scheme resulted in a downturn in community-led projects. An exemption is South Africa in which the FiT schemes was abandoned in favour of a tender and bidding scheme, which allows larger private power producers to assess and offer a certain price for the produced energy as part of their bid. However, so far this bidding process has discouraged local, smaller and community-led projects. This lack of voluntary community investment is set off by the obligation of commercial developers to grant a certain percentage of community ownership and to fund local development programmes.

Another important success factor are early subsidies as employed in Denmark, but also fees, funding programmes (Canada, Australia) and access to lending institutions (Denmark, Germany) which help to overcome difficulties in financing early projects stages and feasibility studies before members of the community begin to invest in the project development. So, the lack of sources for financing community-led energy schemes of a particular size in the UK, beyond specific grants, is deemed to be a factor hampering the growth of the community energy sector. Therefore, a third crucial precondition for community investment is the access of community groups, however legally structured, to equity capital which is usually provided in the UK, Denmark and Germany by a combination of bank loans, funds and shares of individual members. The dense network of a local banking system in Germany consisting of co-op and saving banks has been regarded as more compatible with the financial needs of small-scale, decentralised and distributed energy schemes than for example in the UK (Hall et al. 2014).

The most common way communities can be involved in and can partake in the development of renewable energy projects is through co-operatives and community trusts, which are usually structured as limited liability companies that either work on their own (Denmark, Germany, UK) or in partnership with commercial developers (UK, Canada, Australia), or at the discretion of commercial developers (South Africa). Revenues and dividends generated by renewable energy projects are then equally disseminated within a community (community trust) or distributed among the shareholders in accordance with their investments (co-operatives). Community development funds are usually set up in the UK to enable a distribution of revenues within communities, in addition to the dividends that individual shareholders receive.

Due to the relative novelty of community renewables in Canada and Australia, and various different characteristics of community investments and organisational structures of projects, it is difficult to classify business models in these countries. Community projects have usually been initiated by community groups which are organised in co-operatives, but the private sector and lending institutions are often involved in the finance pool of these projects. Hence, co-operatives are often organised as limited liability partnerships with developers. So, even though the projects in Australia and Canada seem to generally qualify as community-led projects, as communities initiate the ideas for developing community energy projects which are also often solely operated by co-operatives, these projects often rely on the financial and technical contribution of external developers. Likewise, revenues can be fully or partially returned to host communities. Most co-operatives seem to have an open membership and are not territorially defined to raise sufficient equity capital, but are yet dominated by local shareholders. Legal entities for community energy projects in these countries are usually corporations with a limited liability of the shareholders. Support schemes and policies for community investment are also fairly new and regionally fragmented. Their success still needs to be proven, whilst others have only been enacted temporarily. A particular feature of the emerging community-renewables sector in Nova Scotia, Canada, is that co-operatives are organised as Community Economic Development Investment Fund (CEDIF) funds, which deliver long-term tax benefits for their shareholders. South Africa's procurement programme is unique in terms of its socio-economic development requirements consisting of three revenue streams for communities: ownership revenues, socioeconomic development revenues and enterprise development revenues. While developers in Denmark are obliged to offer an ownership share to communities, developers in South Africa are obliged to additionally engage with communities in order to identify and design plans for local economic development within a certain radius around the infrastructure project. Thus, developers not only have to include communities in the equity share of a planned project, but also have to make a clearly designed contribution to the local area as part of their application. However, the institutional conditions for the development of renewables in South Africa are rather aimed at the national level, while discouraging the advancement of smaller and community-led developments. This is also reflected in the role of community trusts in South Africa which tend to represent a previously defined community and manage revenue streams for an entire community, instead of individuals who work together in a co-operative and receive dividends according to their shares in the project.

7.3 Learning points for Scotland

There are some learning points from the international case studies that are applicable to community investment in commercial projects in Scotland:

- *Novel arrangements* may be required to bring about a big uptake in community investment – including new ownership models, policies and funding programmes - ensure that communities can generate revenues from renewables and that local

benefits are shared among the communities. In some of the countries studied, a very clear steer and policy change from Government has been required to generate interest in community investment.

- *Generating public interest* and awareness is key, both locally and in general. All the case study countries demonstrate that public interest and awareness of possibilities, as well as a favourable commitment from policy-makers, need to go hand in hand in order to achieve a successful and thriving community energy sector. This is also reflected in the slowly emerging community energy sector in Canada, where the public interest in community renewables was addressed by regional support instruments increasing the viability of small-scale projects for communities. Likewise, the rather unfavourable and geographically fragmented conditions in Australia indicate how difficult it can be for communities to achieve their ambitions if complementary and sympathetic policies and programmes not in place. In addition, local awareness of the possibilities for community energy and an interest in environmental issues are also important factors that shape the emergence and constitution of community energy co-operatives in general and investment in specific projects in particular⁵⁰. National level policy therefore needs to be accompanied by efforts to generate interest on the ground.
- There are *different business models* to allow communities and individuals to participate in shared ownership, some of which have already been adopted in Scotland. The most common business models are embedded in the idea of co-operatives raising equity from shareholders, which then usually work as limited liability companies to protect their members. The equity capital raised within a community is then used to develop community-led and community-owned projects or to buy in to commercial projects. While the first approach reflects the original idea of community energy as predominantly practiced in Denmark and Germany, initial community energy projects in Scotland give evidence of the implementation of both approaches.
- *Early support programmes to secure early project financing* are critical. In addition to guaranteed and stable revenue streams through feed-in tariffs or power purchase agreements with electricity suppliers, the provision of early support programmes to secure early project financing during the more risky early planning stages is critical. Even though equity capital is often raised through shareholders, community groups require a start-up capital for preliminary and feasibility studies before shareholders

⁵⁰ Wirth identified four elements institutional features of communities that contribute to the emergence of energy co-operatives, which are: community spirit, tradition of co-operatives, the value of locality, and a common sense of responsibility in terms of protecting the local environment and population. Wirth, S. (2014): Communities matter: Institutional preconditions for community renewable energy. – Energy Policy 70, pp. 236-246.

come into play. As the case studies indicate, this can include bank loans for collectives and individuals participating in a co-operative, different national support programmes or funds from charities to provide more financial security for community groups at the beginning before any investment can be undertaken.

- *The potential benefits* to communicate to the public are wide-ranging, and include local control and revenue, and environmental benefits. The case studies demonstrate the importance of capacity building for communities, and the necessity of through support programmes, accessible knowledge, steady advice and funds, and the guidance from umbrella organisations to provide this.
- The *time gap* between up-front investments and the flow of revenues once the project is operational and debts are paid off may be significant. Community investment (even with shareholders providing equity) usually necessitates debt finance and the repayment of debts before any revenues become noticeable for community members. Immediate investments in a community by the developer can contribute to overcome this time gap of community buy in, so that people experience an immediate impact of the development in their community before any revenue flows happen, as required in South Africa.
- *Local acceptance* may be increased by community investment. As reflected in the historical development of renewables in Denmark, the involvement of grassroots community-owned projects can consolidate local acceptance of renewables in comparison to solely commercial projects from external developers, and there is some evidence of a causal relationship between community ownership benefits and local acceptance. However, other examples in Germany show that this cannot simply be taken for granted.
- *The role of non-local and remote investors* can be delicate in terms of the distribution of costs and benefits emerging from a development, as seen in Denmark. Non-local private or co-operative investors bear the investment risks but also equally benefit from individual dividends and revenues; moreover, the geographical community may not receive any of these benefits but bear the possible costs of living in close proximity to the development.
- A *legal obligation* on developers to provide community investment opportunities exists in Denmark and South Africa. This may also increase local acceptance, but as the case studies from different countries demonstrate, this cannot simply be taken for granted. A potential impact of ownership obligations to stimulate community investment in Scotland cannot be easily inferred from these countries, due to their novelty, but also due to the different socio-economic context in South Africa and the original intention in Denmark to stem a decline in community ownership and acceptance with shared ownership obligations (further discussed in section 9, page 57).

Section 8: Suggested Resources

Our research has identified support from across different stakeholder groups to increase community investment opportunities; but at the same time, a lack of experience, and a number of significant hurdles. Given the relative novelty of community investment in commercial energy projects in Scotland it is clear that further guidance and support materials are needed to facilitate community investment. This is important for both communities and developers and should reflect the different needs of these groups taking account of varied experiences, backgrounds and knowledge levels. In this section, we firstly discuss what our research participants thought about the current resources available to support shared ownership; secondly, the further resources that were deemed to be necessary; and thirdly, we draw on our case studies and empirical research to discuss factors related to the broader context which would help to facilitate greater community investment.

8.1 Current resources

We asked our survey respondents how helpful they found the current range of tools offered by CARES and LES. The results are detailed in Figure 12 below:

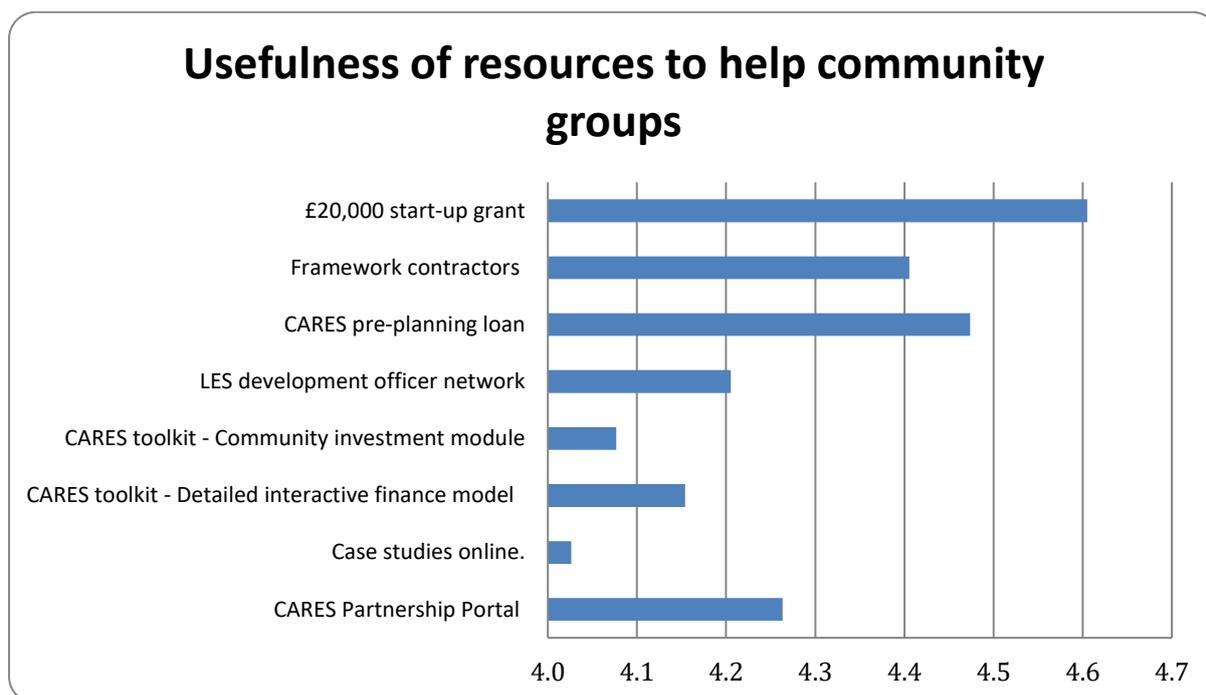


Figure 12: The perceived usefulness of resources available to community groups. All resources were (on average) deemed to be helpful (4) to very helpful (5).

As demonstrated by Figure 12, all the tools that CARES and Local Energy Scotland offer were seen to be of value - “All the items listed are extremely useful” – and nothing was rated less than a ‘4’ (‘helpful’) on a scale of 1-5, from ‘not at all helpful’ to ‘very helpful’. There was clear agreement about the value of the £20,000 start up grant, with almost all respondents saying that this was very helpful. This reflects the points made earlier about finance being

the critical issues (see section 6.1), and the point from the international case studies also about early finance (section 7.3). Interestingly, while the LES development officer network was one of the resources less commonly selected, this may represent a lack of direct experience or knowledge of this role, particularly as one of the key themes that emerged from our data was the need for an independent third party to provide advice; which we discuss again below. LES are also in the process of developing a portal to allow developers and communities to connect with each other and on a toolkit of resources (more on both of these below), all of which was welcomed: *“all of this would be brilliant, well thought out practical advice”*.

8.2 Required resources

In addition to asking respondents about the value of the tools currently available, we also asked about what further assistance shared ownership projects require. Figure 13 below lists the most commonly requested resources. We also asked respondents what factors would support shared ownership; these are listed in Figure 14, and we then discuss these in more detail below:



Figure 13: Additional resources required to support shared ownership

Support factors for shared ownership of renewable energy

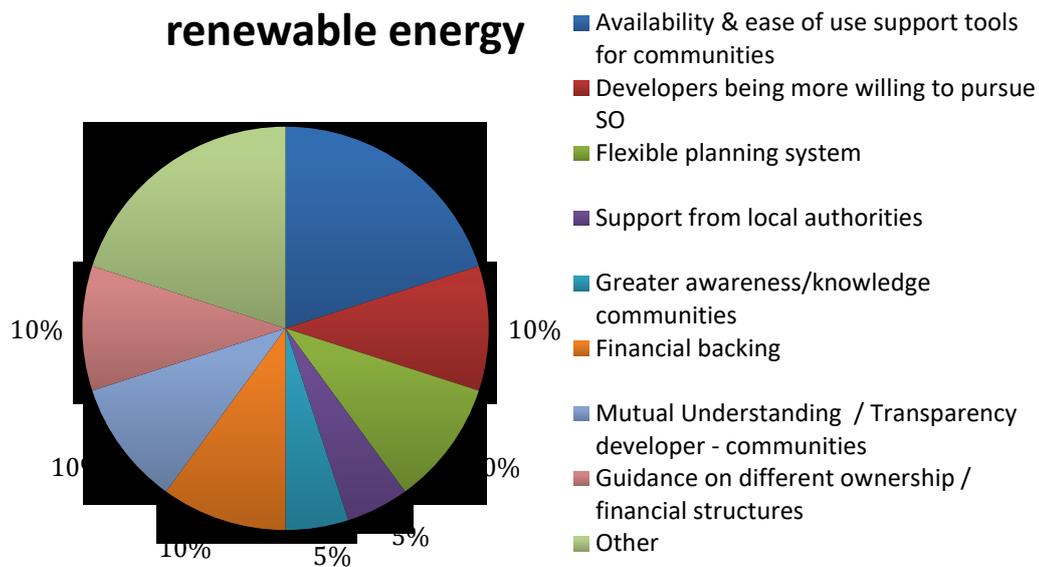


Figure 14: Factors that would support shared ownership of renewable energy

The resources and support factors listed in these two charts range from specific help, to general context. We discuss specific resources in this section; and issues relating to the broader context in section 8.3.

8.2.1 Increased face to face contact and networking opportunities

Throughout our research we found that ways to help developers and communities increase *“the ability for developers and communities to be able to connect”* were of real importance. There was a strong desire amongst both community groups and developers for direct interaction. Indeed, the most-often named resource was the opportunity for face-to-face contact, networking opportunities, and sharing experiences. In particular, events with a variety of stakeholders (e.g. developers, community groups, financial and legal experts) present were considered to be extremely useful for all involved. Site visits to successful projects, hosted with community project representatives, were also discussed as a potential vehicle. Not only could these events be used for the matching of project partners, but they are also thought to have the broader benefit of enhancing communication and trust between different stakeholder groups. It was also suggested that these events or discussions could take a form *“where communities and developers can talk in a relaxed way that is not intimidating for either party”*.

In addition to face-to-face networking, the need for communities and developers to find potential partners and to explore any interest in a shared project was identified as important; one respondent even described the *“potential for a ‘database’ of opportunities”*, and others talked about ways to include communities and community groups other than the community councils. LES are currently setting up a ‘Partnership Portal’ which will directly address this, and be a means by which developers and community groups are able to

register their interest, and connect with potential project partners. While there was support for the Partnership Portal among our respondents, concern was raised about the extent to which it might encourage communities who were non-local to invest in a project: *“Is it the intention that the Partnership Portal will make all developments open to wider investment? We feel it should be those neighbouring the windfarm that have this opportunity”*. However, another respondent said that the Partnership Portal should be focused on the *“biggest opportunity which is for local people to invest their own money into renewable energy schemes”*, and that it would allow this and *“unlock the disadvantage of people who don't have the opportunity to develop their own project”*. We have discussed this issue in section 6.6; and return to it again in section 9.

8.2.2 A personalised mentoring scheme for communities

Our research found that many stakeholders, especially those from community groups, would welcome a peer-to-peer mentoring scheme. Many community representatives interested in community investment indicated that they find it difficult to know where to start. Some are not aware of the wealth of information that exists, whereas others are aware but find it difficult to identify which information and assistance is most appropriate to their situation. A scheme where experienced community groups – those that have gone through part or all of the development process – act as a mentor to help those just starting out could be one informal, but structured way of sharing knowledge and expertise between communities.

8.2.3 Assistance and advice for developers

Whilst some of our respondents described the experience that developers have in taking projects forward, there was also concern that developers themselves also need advice and support; and indeed, our chart in section 4.6 shows that a significant proportion of the developers in our survey had little experience of community investment in a project. As we discussed in section 6.2, some developers feel that they lack information and do not know where to go for advice, with their current knowledge either developed through in-house research or trial and error. The support tools being developed by LES should – at least in part – provide an opportunity to address this, as part of the ‘community investment toolkit’. This relates to a slightly wider issue, identified in Figure 14 above, about finding willing developers. Clearly, community investment cannot proceed without having a developer willing to offer a share to a community. The LES ‘Partnership Portal’ will be one way of locating developers who are already willing. However, some respondents said that shared ownership should *“become a regular, standard component of most developments”*, and that *“there should be more developers offering such opportunities”*. Further, it was felt that more *“open minded developers”* were required, and that developers needed to be informed and persuaded of the benefits of such schemes. LES are developing a document entitled ‘Why Shared Ownership?’ which should help to encourage developers to consider

community investment; this work is currently ongoing, and our research underlines the value of it.

8.2.4 Legal and financial guidance documents

Respondents throughout our research described the need for financial and legal templates, as well as guidance documents. Generic templates were seen as potentially valuable by both developers and community groups who thought it would help streamline the process and make it easier to communicate between the various stakeholders. However, the point was clearly made that such documents should only be used as a starting point for orientation, and should not restrict the types of agreements that could potentially be set up between communities and developers. These documents should also not come to be regarded as a substitute for professional legal advice.

8.2.5 Support tools for communities

Our respondents described the *“huge potential for communities if they are given the proper tools to take advantage”* from shared ownership schemes. These tools include those currently available (detailed in Figure 12), all of which were welcomed. It was also felt that further information for local communities on the risks and work involved in being part of a shared ownership scheme was necessary, and an opportunity to discuss the finance and risk of projects. However, our research finds that tools and models should be made simple and accessible so that *“communities don't feel overawed by the process”*; and we have already discussed the complexity of information available. LES are currently developing a ‘toolkit’, a selection of information, advice, case studies and resources from which communities will be able to identify and select the information that they need, and this work is ongoing. In addition, our research identified the issue of the skills that community members need; and training days and skills courses were also suggested as helpful to increase community capacity to engage in a shared ownership project.

8.2.6 Sharing success stories

Following on from the previous point, both developers and community groups indicated that they would find it useful to hear about success stories and the factors that led to their success. A varied sample that includes different legal and financial structures would allow stakeholders not only to see the diversity of possibilities but also identify the structure most likely to suit them. This would enable different stakeholders to understand how community ownership can be achieved without undue complication or risk. (Local) success stories could also be used by community groups to inform and enthuse the wider community. There is some desire from stakeholders to not only include success stories, but also the stories of projects that have not succeeded – as important lessons can be learned from those as well.

8.2.7 Project managers and named contacts

An issue identified by both community representatives and developers was the difficulty in identifying their main point of contact within the other's organisation. For commercial organisations, this might simply be a case of better communication of the company's structure for the community group, although of course staff can change and roles may be reallocated. The structure within community groups is sometimes even less clear (especially as members are often involved in a voluntary or part-time capacity) which was sometimes perceived to impede a smooth and fruitful dialogue. Clearer identification and communication of different community members' responsibilities was seen as helpful by the various stakeholders.

In addition to named contacts within community groups and developers, third party help during the process was also suggested. It was generally agreed that an experienced and independent project manager, working full-time on behalf of the community, would be helpful to pool and strengthen the capacities of communities. This could then be an *"independent person who is able to support communities and facilitate communities coming together"*. The project manager could act as a designated point of contact for other stakeholders (the developer as well as legal and financial contractors/consultants) and ensure the smooth running of communications between the various parties involved. As this was expected to reduce the risk of the project it was also thought that it could help to increase confidence of funders. CARES could play a role here. First, it was deemed helpful if the website included a list of project management contractors with experience in the community sector, as it is currently limited to legal and financial contractors. Second, respondents thought it would be helpful if communities were able to fund project managers as part of their CARES start-up grant funding, and/or that grants are available to communities to help them appoint an advisor or consultant to help them through the process and broker or negotiate with the developer.

8.2.8 Guidance on timelines

It became clear throughout our research that there is a need to improve trust and understanding between communities and developers. Part of the current problem is that communities and developers do not always know what to expect of one another. Managing expectations is a first step towards enhancing this mutual understanding. One concrete suggestion that came out of our workshop was to produce timelines that represent the different process and investment stages, and that clearly indicates key milestones. This was expected to help communities understand some of the long-term challenges, such as what skills a community needs to participate in a project, and at what points there would be high demands on their time.

Although a simple version of such a timeline is available on the Local Energy Scotland website⁵¹ a more detailed version – perhaps one that could be edited according to the specific project’s timescale – could provide a foundation for improved communications between developer and community.

8.3 Resources, context and policy

In the previous section, we have discussed some of the specific tools and resources which our research suggests would be beneficial in facilitating greater community investment. Here, drawing on findings from across our research, we discuss some wider issues relating to planning, policy, and the wider context in which projects are developed.

8.3.1 Finance

Finance has emerged as one of the key – if not the key – issue throughout our research (see for example section 6.1). We mentioned it in the previous section in terms of the value of the CARES £20,000 start-up grant. We mention it again here as part of a discussion about the wider landscape because of suggestions that were made about the role of the banking sector. One respondent described this in terms of “*the banking sector experiencing a complete market failure in financing smaller projects on a non-recourse basis*”. Suggestions were made about the role that bank financing could play if it were made available for shared projects; and more specifically that LES could work with banks to support community projects, or that the Green Bank could underwrite community projects. The accessibility of debt-finance from the banking sector in some of the international case studies was a significant difference to the situation in Scotland; and had a significant impact on the development of community investment when available.

8.3.2 Nationwide campaign to increase awareness

Our research found that one of the biggest challenges to community investment in renewable energy is a lack of awareness among community groups about the possibility to do so. The focus on 100% community-owned projects has ensured that progress has been made in that area, but respondents indicated that this approach is not a viable option for many communities. Therefore, in order to encourage the public to invest in renewable energy – whether as individuals in co-operatives or as communities – engagement strategies need to be broadened. It was also felt that shared ownership provides “*the ideal opportunity*” to raise awareness about energy generation and consumption more generally. A government-led national campaign to encourage people to invest was identified as one potentially fruitful strategy to achieve greater civic engagement. Our international case studies demonstrate the value of attempts to raise public awareness and interest nationally as well as locally. Nonetheless, during our discussion with stakeholders it was emphasised

⁵¹ Local energy Scotland (n.d.) The Project Roadmap. Available online at <http://www.localenergyscotland.org/resources-advice/cares-toolkit/project-development/the-project-roadmap/>

that transformational change will not happen overnight, and may take some time to achieve. Therefore this should be seen as part of a broader mix of strategies, including the quicker-to-implement suggestions listed above.

8.3.3 Support from the planning system

Some of our respondents felt that the current planning system, and local councils and their planning departments, do not do enough to support community investment projects. It was felt that greater recognition needed to be given both within the planning system, and from local councils, on the value of these projects, and that they should be looked upon favourably from a planning and local authority perspective, with flexible planning arrangements for ownership opportunities. The wider policy context was also discussed in terms of the need for a national framework and guidance to help developers and communities on finance and management structures; and clear guidance from Ofgem and HMRC regarding Feed-in Tariffs, grid arrangements and tax advice for each model. Some respondents also felt that this positive attitude from planning should encompass a requirement on developers to include shared ownership opportunities, as will be discussed below.

8.3.4 Material considerations in planning

In contrast to Denmark and South Africa (as we discussed in section 7), on Scottish soil developers are currently under no obligation to consider or offer investment opportunities to communities. Entertaining the possibility of community investment, and entering negotiations thereto, is entirely at the developer's discretion. Indeed, it is becoming increasingly common for local community representatives, rather than developers, to initiate conversations towards co-investment. There was a very mixed response among our respondents about whether shared ownership should be a material consideration in a planning decision, and about whether developers should be obligated to provide such an opportunity. Some respondents said quite definitively that "*community shared ownership should be a material consideration in planning terms*" or indeed "*must*" be accepted as materially valid. This was because of the economic benefits that a shared ownership project would bring, both locally and nationally. As our international case studies demonstrated, a legal obligation for shared community ownership could trigger and ensure more investment. It could also increase local acceptance, although as the case studies from different countries demonstrate, and as discussion in section 6.5, this certainly cannot be taken for granted.

However, other respondents were much less keen on obligating developers to offer shared ownership or on doing so being a material consideration in planning. One developer said that even the expectation that the industry felt to deliver investment options to communities was already of concern, because they had found that the majority of communities do not necessarily wish to invest and would prefer a more traditional community benefit payment. The difficulties for communities of investing, and the number

of hurdles that need to be overcome, do hinder communities from participating in shared ownership, as we have discussed. It may be the case that the barriers need to be addressed before the issue of whether shared ownership opportunities are mandated or made a material decision are addressed.

There is also the critical issue of developing and maintaining trust between communities and developers. Whether or not a shared ownership opportunity was made a material consideration has the potential to affect this. Rather than being seen as a way for developers to engage with communities, to share benefits, and improve the image of renewable energy, shared ownership might be seen as only being offered 'because it had to be' if made mandatory. It may also be that forcing all developers to offer this opportunity means that the focus on building relationships and developing trust is not as prominent as it needs to be at present. In addition it is also vital of course that any project is a good project – that issues of social impact are addressed from the outset and there is a balanced redistribution of benefits that address the needs of the community – and that whilst shared ownership might enhance a project, it will not make a 'bad' project into a good one.

8.3.5 Flexibility

Related to the discussion above is the issue of flexibility in the planning system. The need for flexibility was emphasised throughout our research. Whilst the specific resources above were important: *“All these tools/assistance are of benefit but as every project will be different, each will need to be customised for the individual project needs”*. There was also a need for different financial models, in order to *“reflect commercial investment as this will vary from wind farm to wind farm”*. Projects, locations, developers, and communities all differ – and there was a clear call to make the resources, guidance, and regulations regarding shared ownership sufficiently clear but sufficiently flexible to acknowledge this. For example, as one of our respondents said: *“There is likely to be not one single ‘right’ way for developers to engage with the local community. The extent to which communities can be involved throughout the process will also be dependent on their capacity and finances”*. Having a clear structure, clear sources of information and advice, and clear planning guidance is therefore important; but the flexibility to adapt these to each project is also key.

Section 9: Summary and Recommendations

Community investment in commercial energy projects has the potential to have far-reaching and positive impacts. Our research has demonstrated that there is much interest in, and enthusiasm for, increasing community investment in commercial energy projects in Scotland. This is evident amongst both developers and communities (as well as other stakeholders). Community investment can be an opportunity for increasing public involvement in renewable energy projects, improving relationships and building trust between developers and communities, and improving the image of the renewables industry. As such, community investment is often viewed as a mechanism for increasing public buy-in to commercial energy projects in more than a financial sense. For communities, investment in commercial energy projects represents a financial investment but also an opportunity to build capacities and empower community members (e.g. through skills development and strengthening networks within communities). It can also be a means of giving some control or input into local energy production, and can be a mechanism for redressing perceived imbalances in national or global benefits of renewable energy production compared to local costs or disruption.

However, despite such enthusiasm for increasing community investment in commercial energy projects our research has highlighted a lack of experience in this area and considerable uncertainty or hesitancy about the practicalities of pursuing increased community investment. Developers have a number of concerns regarding the impact that community investment might have on projects, particularly in terms of securing finance and the implications for increasing time and resources relating to community engagement. Communities are often worried or uncertain about the amounts of finance which they would need to raise and how to access this. There are also problems associated with different parties' perceptions and/or expectations of one another. Developers are often unsure as to whether community groups have the necessary skills, experience and resources to participate effectively or efficiently in development processes relating to energy projects. Simultaneously, community groups are often sceptical of the motives of developers engaging with them or feel that developers do not appreciate the challenges that community groups face. There is therefore the need for greater communication between developers and community groups and for improving mutual understandings of each parties' roles in development processes as well as clarifying different parties' expectations of one another. The last 18 months or so have seen a notable increase in innovation on shared ownership arrangements in Scotland, and we have discussed the diverse models being used. Indeed, this diversity in business models and legal structures is not (to our knowledge) encountered anywhere else, and may have arisen at least in part because of a lack of policy constraints on such arrangements.

It is clear that further guidance and support materials are needed to facilitate community investment. This is important for both communities and developers and should reflect the different needs of these groups taking account of varied experiences, backgrounds and knowledge levels.

These support materials would include:

- Increased face to face contact and networking opportunities
- A mentoring scheme for communities
- Sharing success stories
- Independent project managers and named contacts
- Legal and financial guidance documents
- Guidance on timelines
- Nationwide campaign to increase awareness
- Greater access to start-up finance for communities

The issue of whether shared ownership should be a material consideration in the planning system is much debated. Our research demonstrates a very mixed response as to whether this should be the case. We suggest that developers who engage in shared ownership *only* because of the material gain it may give them may not be fully embracing the benefits of engaging with communities; and that communities are likely to be able to tell this; indeed, we have demonstrated a case where a shared ownership opportunity was deemed to a 'bribe' by some members of the community.

Similarly, the related issue of whether developers should be obligated to provide a shared ownership opportunity is also contentious. We have also demonstrated that whilst shared ownership may be potentially very beneficial for communities, they may not have access to the financial resources, advice and skills to make a project happen. It may be the case that the barriers need to be addressed before the issue of whether shared ownership opportunities are mandated or made a material decision are addressed. We have drawn on case studies from Denmark and South Africa where developers are obligated to provide shared ownership opportunities for communities, although these are both very different policy and social contexts. We find that in South Africa, this context and obligation mitigates against small and local community groups entering into ownership arrangements, which is perhaps not what is wanted for Scotland; and in Denmark, we find that obligations to provide investment opportunities do not necessarily correlate with increased social acceptance (although of course it can do). Neither of these cases therefore provide compelling evidence to suggest that community investment opportunities should be made mandatory in Scotland, at this stage.

There is also a contentious issue about the definition of communities. Again, our research reveals a very mixed response to how this should be done, particularly about whether a 'community' has to be geographically proximate. Allowing the opportunity for a wide range of individuals and community groups to invest in a project increases the likelihood of raising

the requisite finance, allows a broad engagement with renewable energy, and increases the number of people with the opportunity to become involved. Making wider use of different forms of co-operative model is a sensible option, given the current difficulties in raising finance, and the difficulties in finding community members with available time and resources. It is also a way of encouraging a wider awareness and interest in energy generation and ownership from a broader section of the public. It is not however an easy option; finance may still be required for start up (either from loans or grants), and there is the critical issue of 'outsiders' investing in communities, from which they may be very distant. Indeed, as the Danish case study in particular demonstrates, opening up community investment opportunities to those outwith the geographic area may contribute to a weakening of public support for such projects. We therefore suggest that, while our research certainly indicates the value of a wider use of a diverse range of funding models as appropriate for each context, priority should be given to local people and community members, before those who are non-geographically proximate are invited to be involved.

Based on our research we make the following recommendations:

- Further guidance and support materials should be developed to facilitate community investment. These should be tailored for communities and developers and reflect the different needs of these groups taking account of varied experiences, backgrounds and knowledge levels. They should also set out what to expect when becoming involved with community investment (whether as a community member or developer) but should enable flexibility to respond to local contexts and community needs.
- There should be more opportunities for sharing of experiences and building of networks through events or activities which connect a range of stakeholders and enable sharing of experiences and mutual learning.
- Mentoring schemes and networks through which people can seek advice and share experiences should be established.
- Guidance should include templates which can be adapted by community groups and developers; independent project managers and named contacts; guidance on timelines; and legal and financial guidance documents
- Greater access to start-up finance for communities should be made available to communities; as well as clear guidance and information on how and where they can access it.
- There should be attempts at a national as well as local level to raise public awareness and interest in community investment opportunities.
- Further consideration should be given to how 'communities' are defined and what the implications of such definitions are community investment and also for broader public engagement with the energy sector. Our research suggests that widening the

participation opportunities available, with a greater diversity of models, tailored to the specificities of each project and location is a positive way forward. However, our research suggests that geographically local communities should be given the first opportunity to invest; before this opportunity is extended to non-geographical communities and individuals.

- Whilst our research demonstrates the need for flexibility in approach and structure, we suggest that in most cases it is likely to be in the best interests of all those involved to at least engage with a community at the earliest possible stage; even if they do not become a formal part of the project and commit to investment at this stage.
- Projects should not necessarily be obligated to provide a community investment opportunity until greater access to funding and resources for communities, and to advice for developers is available.

Appendix: International Case Studies

1. United Kingdom

In recent years community energy has received considerable attention across the UK, and the participation of the civil society in energy production has become a growing field⁵² in the traditionally centralised and internationalised energy market⁵³. Currently, there is a capacity of at least 60MW of community-owned electricity generation in operation⁵⁴, which is only a fraction of the energy sector. Nonetheless communities have already invested £17 million in community renewable electricity through 40 community share offers⁵⁵. There has not only been an increasing societal interest in community energy, but also an intensified uptake of this trend through governmental programmes over the last decade⁵⁶. Community energy schemes and their driving force of Feed-in Tariffs (FiT) are still a novelty to the UK, are still in the process of being established and are not yet a widely diffusible concept in the UK⁵⁷. Also FiT only applies to relatively small development of up to 5MW while the Renewables Obligation operates for larger schemes. The political will to engage local communities in the generation of energy and the introduction of the FiT system in the UK in April 2010 has, however, increased the financial viability of community-led renewable energy projects and the awareness of communities for these opportunities⁵⁸. The political will to strengthen the involvement of communities in the local generation of energy is reflected in the Shared Ownership Taskforce which was established in early 2014 to develop a framework to guide shared ownership of renewable energy. This taskforce is part of the UK Government's Community Energy Strategy, published in January 2014. Representatives from the renewables sector and from the community energy sector work together in this taskforce to design ways of how communities can participate in and benefit from the generation of renewable energy in their area. Their draft report that is currently under consultation suggests three ownership models that should be offered to communities⁵⁹:

- Split Ownership in which a legally constituted community enterprise buys a proportion of a commercial projects (e.g. a turbine or a number of PV panels)

⁵² Walker, G., Devine-Wright, P., Hunter, S., High, H. & B. Evans (2010) Trust and community. Exploring the meanings, contexts and dynamics of community renewable energy. – Energy Policy 38, 9, pp. 2655-2663.

⁵³ Hall, S., Foxon, T.S. & R. Bolton (2014) The new 'civic' energy sector: implications for ownership, governance and financing of low carbon energy infrastructures. BIEE 10th Academic Conference; Balancing Competing Energy Policy Goals. St John's College Oxford, September 17-18th, 2014.

⁵⁴ DECC (2014) *op cit*

⁵⁵ *ibid*

⁵⁶ Walker et al (2010) *op cit*

⁵⁷ Nolden, C. (2013) Governing Community Energy – Feed-in tariffs and the development of community wind energy schemes in the United Kingdom and Germany. – Energy Policy 63, pp. 543-552.

⁵⁸ Nolden (2013) *op cit*

⁵⁹ Shared Ownership Taskforce (2014) Report to DECC. Draft Report Consultation. 23rd June 2014. Page 6.

- Shared revenue, in which a community enterprise buys the right of a virtual revenue stream as a proportion of the real output, as if it would have acquired the actual shares of the infrastructure
- Joint venture in which a commercial operator and a community enterprise work together to create a joint venture to develop, own and manage a project

In practice so far, community energy projects in the UK include community-owned and self-funded renewables but also those that are partially owned or developed in co-operation with commercial developers. The origins of community energy projects are mostly rooted in the civil society, and are citizen-led from the outset⁶⁰. The vast majority of existing community energy projects are based on communities of place⁶¹, and were therefore initiated by local groups in a particular area. Prior to the introduction of the FiT-system in the UK, one of the few mechanisms to support community energy were grants for capital costs of equipment installation in order to advance communal energy generation, but the nature of the competitive energy market based on Renewables Obligations implied that only very few communities were able to successfully develop projects and benefit from the returns. Although the FiT-system raised awareness of the financial opportunities involved in community energy projects, other barriers, such as the lack of available finance at early planning stages, the uncertainty of planning outcomes and grid connection costs, limited the development of community-led projects. However, there have been a number of attempts to overcome these obstacles through the establishment of particular business models to secure the financing of community energy projects. Key financing tools include grants which do not have to be paid back, loans and the issue of shares in a project⁶².

Programmes for grant funding are provided by different governmental institutions and levels which all address particular community-based projects from different origins and with different foci not necessarily on energy generation, such as the Low Carbon Communities Challenge (LCCC), the Low Carbon Building Programme Phase 2E, the Rural Carbon Challenge Fund (RCCF), the Community Sustainable Energy Programme (CSEP) and the Renewable Energy at Community-scale Programme (RECSP)⁶³, which can be very competitive and instable⁶⁴. Another emerging funding mechanism is through Social Investment Funding drawing on capital from the Big Society Bank that was established under the Big Society banner in order to invest in social purpose enterprises which may also focus on renewable energy projects⁶⁵. One attempt to circumvent the lack of access to

⁶⁰ Seyfang, G., Park, J.J. & A. Smith (2013) A thousand flowers blooming? An examination of community energy in the UK. – Energy policy 61, pp. 977-989.

⁶¹ *ibid*

⁶² Park, J.J. (2012) Fostering community energy and equal opportunities between communities. – Local Environment 17, 4, pp. 387-408.

⁶³ *ibid*

⁶⁴ Walker, G. (2008) What are the barriers and incentives for community-owned means of energy production and use. Energy Policy 36, pp. 4401-4405.

⁶⁵ Seyfang et al (2013) *op cit*

funding is to raise equity capital by launching community share models. Although this may be a viable way to raise capital within a community, it is deemed that the total volume that can be raised locally is comparatively low to the necessary financial requirements of starting a community energy project⁶⁶. Only larger projects have other funding possibilities available through loans from the Co-operative Bank, Triodos Bank and the Green Investment Bank which, however, tend to focus only on larger projects leaving little leeway for smaller community projects⁶⁷, which has also been described as a 'finance gap'⁶⁸. Also the centralised banking system, capital tied to volatile market forces and the hesitancy of investment capital to lend to small projects resulted in unfavourable conditions to acquire suitable financing for comparatively small community energy projects⁶⁹. This implies if communities really want to engage in the production of renewable energy to receive benefits, "it is easier to get utilities and commercial developers on board than to opt for community-led developments"⁷⁰. Thus, the scope of individual and collective effort often depends on local circumstances and available capacities facilitating and managing co-operation, collaboration and knowledge transfer between the stakeholders participating in the development process. Therefore it would be naive to assume that these new opportunities are equally available to all interested communities⁷¹. Also, in order to facilitate the uptake of shared ownership, there will be a greater need to clarify the levels of support that are available for both commercial developers and community groups⁷².

Community energy groups have often worked in partnership with other organisations so far, such as local authorities, charities, NGOs, local businesses, other community groups and governmental departments, to promote the development of renewable energy projects but also to establish reciprocally supportive links and a mutually beneficial network⁷³. Even though they represent a fairly new part of the national energy market in the UK and regardless of the current efforts of the Shared Ownership Taskforce, embedding communities in the development of renewable energy facilities can have different organisational and legal forms. Community co-operatives have not historically been defined as a legal entity, but communities have to be legally constituted and recognised as a community enterprise in order to invest in and buy in renewable energy or enter into financial shared ownership agreements. These legal forms can be Community Interest Companies, Development Trusts, Co-operative Societies, Limited Companies or Community Benefit Societies⁷⁴. However, many community projects have recently been registered as

⁶⁶ Nolden (2013) *op cit*

⁶⁷ *ibid*

⁶⁸ DECC (2014) *op cit*; Hall et al (2014) *op cit*

⁶⁹ Hall et al (2014) *op cit*

⁷⁰ Nolden (2013) *op cit*, page 548

⁷¹ Seyfang et al (2013) *op cit*

⁷² Shared Ownership Taskforce (2014) *op cit*

⁷³ Seyfang et al (2013) *op cit*

⁷⁴ Shared Ownership Taskforce (2014) *op cit*, page 7

Industrial and Provident Societies (IPS) which can take two forms; Community Benefit Societies and Co-operative Society⁷⁵

Community Benefit Societies and Co-operative Society

Community Benefit Societies (BCS) are intended to serve the entire community, whereas Co-operative Societies (CS) are mainly operated to benefit their members and shareholders⁷⁶. A BCS can integrate an 'assets lock', which prevents shareholders and members from being able to benefit from the assets of the BCS beyond their investment in case the BCS is converted into a company or locked down. This ensures that the original purpose of the society is maintained⁷⁷. Both CBS and CS models hold equal rights for their members. Since both models are oriented towards social purposes revenues for the shareholders, administrative and legal requirements are low in comparison to those applying to private companies⁷⁸. Through an IPS it is also possible to restrict access to the society to certain geographical areas and to enforce the purchase of a minimum number of shares on members. Besides the investments from members and shareholder, larger co-operative renewable energy developments can also be supplemented by bank loans or a co-operation with commercial developers⁷⁹.

Development Trusts

Development trusts have been particularly used in Scotland to represent communities in revenue-generation enterprises⁸⁰. They are vehicles for broader community interests and ensure that returns from investments are used for specific community purposes. Development trusts are enterprises that can have various legal forms and do not have any shareholders or owners, but a board of trustees overseeing the activities of the trust. Income from the activities of the Trust is spent to develop and regenerate the community. As most trusts are established as charities, they may experience difficulties to obtain loans from banks and enter a contract, even though they may receive grants more easily. Therefore, renewable energy projects are better achieved if development trusts are organised as IPS or Community Interest Companies⁸¹.

Community Interest Companies

A community interest company (CIC) is a distinct legal form that is established as a private limited company by shares or guarantees, but is designed to benefit the entire community rather than particular shareholders. They must be assessed to ensure that they are established for a purpose that benefits the community. However, CICs can also pay limited

⁷⁵ Roberts, J., Bodman, F. & R. Rybski (2014) *Community Power: Model Legal Frameworks for Citizen-owned Renewable Energy*. ClientEarth: London.

⁷⁶ *ibid*

⁷⁷ *ibid*

⁷⁸ *ibid*

⁷⁹ Willis, R. & J. Willis (2012): *Co-operative renewable energy in the UK. A guide to this growing sector*

⁸⁰ Walker (2007) *op cit*

⁸¹ Roberts et al (2014) *op cit*

dividends to their shareholders which may add additional financial pressure to the early project stages, but this business model may also be eligible for special tax exemptions for investments in renewables⁸².

UK Case Study A: Green Energy Nayland

Green Energy Nayland (GEN) is a co-operative in Suffolk that is organised as a community enterprise incorporated as an IPS which aims to bring renewable energy to the local area and benefits for the wider community. The structure of a community benefit IPS was chosen because of the chance of members to withdraw their investment and the possibility to have access to funds and pro bono support⁸³. GEN's goals are to provide benefits for the whole community rather than financial gains for individual owners. Green Energy Nayland emerged from the plan to install a solar/photovoltaic system on the roof of the local primary school under a scheme run by a larger renewable energy company. But the group solely raised the capital within the community in order to keep the entire revenues from the FIT system in the community. A minimum investment in the co-op is £250 and a total amount of £37.900 was raised by 34 members. Initial funding for preliminary work was received from the Suffolk Foundation. Match funding came from the Suffolk County Council which helped to increase the capacity of the facility from 10kW to 15kW. The board of GEN also benefitted from the experiences of two people in project and business finance. The produced energy is sold to British Power at a rate of 3.1p per kWh⁸⁴. The 15kW solar/PV installation was opened in 2011 and in the first year it generated an income of £4000 to be partially returned as interest to the investors, but also invested in community and school projects. Green Energy Nayland also initiated another solar/PV project in the community, but scrapped further plans due to the latest governmental review of FITs⁸⁵.

⁸² Roberts et al (2014) *op cit*

⁸³ Green Suffolk (2014) Green Energy Nayland – How we did it. Available online at: <http://www.greensuffolk.org/assets/Greenest-County/Communities/Community-Support-Guides/Green-Nayland-How-we-did-it.pdf>

⁸⁴ Willis and Willis (2012) *op cit*

⁸⁵ Green energy Neyland (2014) Our Energy Future. Available online at <http://www.greenenergynayland.org.uk/index.html>

UK Case Study B: Bro Dyfi Community Renewables

Bro Dyfi Community Renewables (BDCR) is a community energy co-operative which established the first community wind turbine in Wales. The co-op is also registered under the IPS Act and currently owns two wind turbines in Wales. The original idea for a community turbine came from a local resident who was the voluntary director of the Baywind Co-op and also had professional experience in developing community wind energy. This person teamed up with a few other local residents who could provide further professional expertise. The intention was to build a 30kW turbine on Forestry Commission land next to the Centre for Alternative Energy (CAT) which would consume all the power from the turbine, rather than feeding it into the national grid. An unincorporated association called The Dulas Valley Community Wind Partnership (DVCWP) was formed in order to bring the project forward. Initial grant funding came from the Scottish Power Green Energy Trust and European Commission, whereas the latter one was secured by a local community regeneration group called ecodyfi. Due to delivery problems of the original turbine, a second hand 75kW turbine was acquired from Denmark, which not just caused the need to strengthen the weak capacity of the grid connection between CAT and the local grid in order to cope with the surplus of produced energy, but also to find a new location on farmland for the larger turbine. The next step was to form the community group BDCR as a limited liability company to attract the investment of potential shareholders⁸⁶.

55 mostly local shareholders invested in this turbine project, while the minimum shareholding was set at a price of £100 and in case of over-subscription the amount per individual had to be limited to £1000. More confidence in the viability of the project was also gained through the Baywind Co-op which agreed to purchase any remaining shares. Some shares were also bought by the Energy Saving Trust which thus provides ecodyfi with income from the turbine. Although the turbine originally produced energy exclusively for CAT, with the surplus exported to the local grid, it currently exports all power to the local grid⁸⁷.

The turbine commenced operation in 2003 and the first dividend was paid to shareholders in 2004. But revenues are also paid into a Community Energy Fund, managed by Glantwymyn Community Council, CAT, Bro Dyfi Community Renewables and ecodyfi to benefit local people and energy conservation programmes. The second BDCR turbine project focussed on the replacement of a non-operational test site turbine with a second hand (500kW) turbine. Funding for this project came from the EC which was secured by ecodyfi and the Mid Wales Energy Agency, as well as £175,000 from shares that were made available to individuals. This turbine was installed and connected to the grid in 2010⁸⁸.

⁸⁶ BDCR (2014a) What we're about and how we did it. Available online at <http://bdcr.org.uk/what-were-about/>

⁸⁷ BDCR (2014b) Vestas 75kW. Available online at: <http://bdcr.org.uk/our-generators/vestas-75kw/>

⁸⁸ Ecodyfi (2014) Bro Dyfi Community Renewables Ltd. Available online at: <http://www.ecodyfi.org.uk/energy/energybdcr.htm>

2. Germany

In Germany, there has been a relatively long tradition of the public participating in the development of renewables, in particular solar/photovoltaic, biomass/heat and onshore wind, which is framed as citizen participation, whereas this term includes both, the financial investment in renewable energy projects as well as citizen ownership. Citizen ownership and participation account for 47% of the total installed renewable energy capacity in Germany. Institutional and strategic investors account for 41.5%, while energy suppliers hold a share of only 12.5%⁸⁹.

The reasons for the large contribution of citizens as investors can be found in the financial characteristics, technology specific aspects and the institutional framework of renewable energy deployment in Germany⁹⁰. Others have also named three traits that are unfamiliar in the UK but fostered community stakes in the energy sector⁹¹: local subsidiarity, public benefit values and promotional lending. Further economic principles fostering citizen participation in financing renewables infrastructures are the relatively low investment volumes that can be jointly raised and the German Feed-in-tariff system that guarantees stable revenues from the project, which have been particularly favourable for photovoltaics and onshore wind. However, smaller and decentralised energy projects have been financially unappealing for larger energy companies or investment funds which have to offer greater return rates than the regular yield expectations of decentralised renewables in Germany⁹². So, this lack of investment for small-scale and decentralised renewable energy infrastructures has been overcome by local citizens investing in citizen participation schemes since yield expectations are more adequate for this group, which also provides them with the opportunity to have an active role in local energy policy and planning. For example, the common concept of a citizen wind farm (Bürgerwindpark) allows for the direct financial, conceptual and organisational participation of local citizens in the development of wind farm projects⁹³. Even though there is no explicit threshold for financial participation, the German Wind Energy Association (BWE) suggests that the initial equity capital for citizen wind farms should be at least 20% of the investment volume, while the rest can be acquired through bank credits⁹⁴.

The legal framework in Germany earmarks different business models that aim to incorporate citizens within the financing of renewables. Citizen participation and co-ownership are usually linked to the provision of equity capital, but the characterisation of

⁸⁹ Yildiz, Ö. (2014): Financing renewable energy infrastructures via financial citizen participation – The case of Germany. *Renewable Energy* 68, pp. 677-685.

⁹⁰ *ibid*

⁹¹ Hall et al (2014) *op cit*

⁹² Yildiz (2014) *op cit*

⁹³ BWE (2012) Community Wind Power. Available online at: http://www.wind-energie.de/sites/default/files/download/publication/community-wind-power/bwe_broschuere_buergerwindparks_engl_10-2012.pdf

⁹⁴ *ibid*

co-determination depends on the legal structure of the business model. In practice, there are also a number of organisational and financial structures of mostly equity finance through which citizens are able to invest in renewables, also without “explicit rights of co-determination or liability obligations resulting from equity”⁹⁵ or without a focus on the residents territorial confinement. Business models of equity finance vary in the degree of co-determination and rights conceded to participating citizens, which affects the manageability of a particular project. In addition to that, communities also benefit from renewable energy projects, especially wind farms, through generation of commercial taxes (Gewerbsteuer). Revenues from wind farms are subject to commercial taxes, which are split between the community where the wind farm is located (70%) and the community in which the head office of the operating company is situated (30%). So, locally operated citizen wind farms generate a 100% tax income for the host community.

Energy co-operatives

Energy co-operatives have a long tradition in Germany, and have been revived through the increased development of decentralised renewables. However, in a stricter sense, co-operatives cannot be fully regarded as an opportunity of communities to invest in commercial renewable energy projects. Although they are operated commercially with the purpose of producing and selling renewable energy, energy co-operatives usually aim at full ownership of projects or team up with other co-operatives to realise larger projects rather than buying in projects developed by commercial developers. The co-operative organisation of the energy sector in Germany can take a variety of forms, which can be distinguished between resource-based (wind, solar, bioenergy) and activity-based approaches (based on the values chain; energy production, consumption or services). Energy production co-operatives represent groups of local stakeholders who jointly produce and distribute energy from renewables, while consumer co-operatives focus on the purchase and supply of renewable energy to end consumers⁹⁶. As of the end of 2012, there were 754 energy co-operatives in Germany, whereas the majority of 431 co-operatives were committed to solar energy (177 biomass, 47 onshore wind)⁹⁷. However, a clear typology regarding the energy source is rather complicated as many co-operatives develop various projects exploiting different sources. Due to the uncertain political conditions grounded on the amendment of the Renewable Energy Act, the number of new establishments of energy co-operatives has

⁹⁵ Yildiz (2014) *op cit*, page 680

⁹⁶ Holstenkamp, L. (2012) Ansätze einer Systematisierung von Energiegenossenschaften. Working Paper Series in Business and Law, 11. Leuphana University, Lüneburg. [Approaches towards the Systematisation of Energy Co-operatives]

⁹⁷ Holstenkamp, L. & J.R. Müller (2013) Zum Stand der Energiegenossenschaften in Deutschland. - Working Paper Series in Business and Law, 14. Leuphana University, Lüneburg [On the State of Energy Cooperatives in Germany]

been declining since 2011⁹⁸. Others⁹⁹ have also identified an increase of strategic investors in the wind energy sector which replace co-operatives, since energy suppliers and independent power producers do not only invest equity capital and utilise products of the finance sector, but have also become a provider of loan market products to finance renewable projects.

However, citizens can financially participate in the co-operative, but also get involved in the operation and management of a project. Financial barriers for citizens to become a member in a co-operative are relatively low. In a co-operative system, citizens usually purchase co-operative shares to become a member or provide loans for particular projects or a combination of both, which are used to fund renewable projects or to buy shares of larger projects. The number of and costs of shares are individually determined by the co-operative with regard to a particular project, and the amount of equity finance can be flexibly adjusted to the respective situation. The admittance of new members is often regionally limited and often depends on the potential need for capital related to new projects. For example, the Starkenberg Energy Co-operative, which participates in the development of wind farms, solar, biomass and hydro energy, requires the purchase of 2 co-operative shares of 100 Euros each to acquire a membership. In addition to that, each member has to provide a loan of 1,800 Euros to be invested in a particular project. Simplified calculations indicate an average financial involvement of 3,325 Euros per member¹⁰⁰. Each member usually has one voice in the co-operative, irrespective of the amount of shares they hold, and thus co-determines the decision-making process. The boards of the co-operatives often work voluntarily and are represented by people who also occupy other duties in a community (e.g. mayors). Such a structure of exercising equal co-determination facilitates a democratic process and limits the influence of a single shareholder and prevents financially potent members to impose their will on others. Therefore, co-operatives are suitable for involving a larger number of citizens. As co-owners citizens benefit from the economic success of a renewable energy project through the production and supply of energy, but also have to bear entrepreneurial risks. Financial risks and personal liabilities for members are only limited to the shares and the capital that was invested. Additional costs and further claims in terms of a reverse liability are usually excluded in the structure of co-operatives to alleviate the risks for members. A study¹⁰¹ indicates a bipolar characterisation of energy co-operatives in Germany in terms of the equity capital for co-operative projects. A large group of co-operatives with 100% equity capital is on a par with another large group of co-

⁹⁸ DGRV (Deutscher Genossenschaft und Raiffeisenverband e.V.) (2014) *Energiegenossenschaften – Ergebnisse der Umfrage des GRV und seiner Mitgliedsverbände*. Frühjahr 2014.

⁹⁹ Klagge, B. & J. Anz (2014) *Finanzialisierung der Windenergienutzung in Deutschland? Entwicklungen im Spannungsfeld von Finanzsektor und Energiepolitik*. In: Heires, M. & A. Nölke (Eds.) *Politische Ökonomie der Finanzialisierung*. Springer: Wiesbaden, pp. 241-257. [Financialisation of wind energy in Germany?]

¹⁰⁰ Yildiz (2014) *op cit*

¹⁰¹ Volz, R. (2012): *Bedeutung und Potenziale von Energiegenossenschaften in Deutschland. Eine empirische Aufbereitung. Informationen zur Raumentwicklung*, 09/10, 515-524. [Meaning and potentials of energy cooperatives in Germany. An empirical description.]

operatives with an equity capital of 10-30%, while only very few energy co-operatives are financed through an equity capital of more than 30%. The idea for the foundation of energy co-operatives in Germany is multi-faceted but is supposed to come from a bottom-up approach initiated by local citizens, communities, local energy suppliers and farmers¹⁰², but also often from co-operative banks¹⁰³. Planned co-operatives are financially screened by the DGRV (German Co-operative and Raiffeisen Confederation) in order to back the implementation process. However, the organisational legal authorisation costs for this business model are comparatively high¹⁰⁴.

A Citizen Energy Alliance was founded in early 2014, which supports citizen energy co-operatives, and provides knowledge and expertise for the development of citizen energy to further boost a decentralised energy transition. Furthermore, a particular regional support scheme has been introduced in collaboration with energy co-operatives in the federal countries of Thuringia and Bavaria, which markets regionally sourced solar energy locally. The produced energy is purchased by a local electricity utility to a higher tariff than the nationally determined feed-in tariffs, which is then directly sold on to local consumers. The produced energy remains in the local grid which makes power grid charges obsolete and the electricity tariff remains low.

Closed-end funds

Similar to co-operatives, the purpose of closed-end funds is to raise equity capital through a larger number of investors. The emergence of closed-end funds has been demand-driven. They have emerged from more traditional models of citizen participation, such as energy co-operatives, due to the increasing demand for shares in larger projects especially in wind energy projects from citizens who do not live in the traditional wind farm regions¹⁰⁵. Hence, citizen participation through closed-end funds is not regionally confined. They usually consist of two partners and shareholder groups, and present the legal form of a GmbH & Co.KG. General partners that initiate the project e.g. energy suppliers, project developers, holdings etc., are usually organised as a limited liability company and take charge of the business management. Citizens can participate as limited partners who are only liable to the amount of capital they invested and not for potential debts of the company¹⁰⁶. So as opposed to local citizen-financed projects through co-operatives, the model of closed-end funds ultimately separates the project development from equity provision¹⁰⁷. Although closed-end funds show similar characteristics as co-operatives in terms of liability, they also have some particular features that attract citizens to participate in renewables as limited

¹⁰² BWE (2012) *op cit*

¹⁰³ Volz (2012) *op cit*

¹⁰⁴ Yildiz (2014) *op cit*

¹⁰⁵ Enzensberger, N., Fichtner, W. & O. Rentz (2003) Financing renewable energy projects via closed end funds – a German case study. *Renewable Energy*, 28, pp. 2023-2036.

¹⁰⁶ Yildiz (2014) *op cit*

¹⁰⁷ Enzensberger et al (2003) *op cit*

partners. Their role as limited partners does not involve any influence in the entrepreneurial decision-making, which still allows members of the public to invest in renewables without being engaged in business issues. The lack of co-determination may also make the organisation of a project more manageable while the full responsibility is assigned to the general partner only. Closed-end funds also offer some fiscal advantages, as revenues are treated as income which is taxed under income tax schemes instead of the co-operative tax scheme. So losses and investments at the beginning of a project can be offset against revenues while tax payments are deferred to later years¹⁰⁸. In contrast, such a business model may be inappropriate for citizens who want to exercise some power in the decision-making process and control in the project management.

Due to the relatively large investment volumes, closed-end funds are the most common legal business model for citizen participation in wind farms in Germany¹⁰⁹. The foundation of a GmbH requires an original capital stock of 25.000 Euros. Loan capital for closed-end wind funds has almost entirely come from the European Recovery Program: Environment and Energy Saving Program, and Deutsche Ausgleichsbank: Environment Program¹¹⁰. A key enabler of the local finance sector is the possibility of refinancing loans from the German Public Development Bank (Kreditanstalt für Wiederaufbau) which also offers refinancing options for renewable energy developments¹¹¹. The organisation of closed-end funds consists of an executive board (Geschäftsführung), advisory board (Beirat) and shareholders' meeting, whereas the advisory board keeps in touch with executive board to maintain some influence of the shareholders. In contrast to equal voting power of co-operatives, the influence of shareholders in closed-end funds is determined by their level of participation (i.e. amount of shares). Likewise, the distribution of income among the shareholders is also structured according to their investment.

Other business models in Germany

Besides these two models, there are a few other business schemes through which citizens can participate and invest in renewables, such as limited liability companies (GmbH), stock corporations, and companies under private law (GbR). The latter one entails low legal requirements and a full liability of members, which becomes particularly interesting for small-scale projects with low economic risks and investment volumes¹¹².

In contrast to equity finance, other models based on debt and mezzanine financing as a vehicle of citizen participation are less distinct in Germany. Debt financing can be realised through saving bonds or corporate bonds provided by local saving banks, private banks or project developers. Mezzanine finance is often established through profit participation rights provided by project development companies. Both participation models are based on

¹⁰⁸ Enzensberger et al (2003) *op cit*

¹⁰⁹ BWE (2012) *op cit*

¹¹⁰ Enzensberger et al (2003) *op cit*

¹¹¹ Hall et al (2014) *op cit*

¹¹² Yildiz (2014) *op cit*

debt capital with particular fiscal conditions¹¹³ and are suitable for citizens and investment companies which only intend to invest in renewables without having any interest in dealing with entrepreneurial issues¹¹⁴. Investors and shareholders participating through such models often do not know to what specific project they are contributing (e.g. silent partnerships).

3. Denmark

Denmark is the original pioneer nation in the development of wind energy and is also the forerunner in local ownership of renewables. There are about 100,000 households holding shares in wind energy which is about 5% of the total population. The process was driven from bottom up through enthusiasts who also influenced the political process in such a way that the Government provided enabling conditions to boost the community energy sector¹¹⁵. Such a combined bottom-up and top-down approach fostered the proliferation of community energy in Denmark which began in the early 1980s. The process was hugely influenced by two policies that encouraged the mutual ownership and investment in domestic wind energy. These policies comprise Feed-in Tariffs (FIT) and tax exemptions, but also investment subsidies of 30% for new wind energy installations. The FIT obligated electricity utilities to purchase electricity from wind power “at a rate that equalled 85% of the price paid by consumers” (Lipp 2007:5486). The government also granted a tax-free electricity generation for local turbine owners of up to 7000kWh (Lipp 2007). The right to connect to the electrical grid, legal obligations for electricity utilities to purchase wind energy and a guaranteed fair price contributed to the success of community wind energy in Denmark and a substantial growth of the wind power sector the 1990s. This success resulted in 175,000 households owning 80% of all the turbines in Denmark by 2001, either individuals or through co-operatives¹¹⁶. However, the mushrooming of many small-scale wind farms and single turbines owned by co-operatives resulted in a scattering of wind turbines across the country. In order to control this trend the government supported the repowering of existing turbines, imposed stricter siting guidelines and also introduced new policies that encourage larger corporate developments while hampering community participation. Explicit support for renewable energy changed in 2001¹¹⁷. A temporary abolishment and changes in the FIT system and subsidies by the conservative government resulted in a decline of community owned wind farms and the emergence of larger

¹¹³ Holstenkamp, L. & H. Degenhart (2013): Bürgerbeteiligungsmodelle für Erneuerbare Energien. Eine Begriffsbestimmung aus finanzwirtschaftlicher Perspektive. Working Paper Series in Business and Law, 13. Leuphana University, Lüneburg. [Citizen Participation Schemes for Renewable Energies. A Definition from Financial Economics Point of View]

¹¹⁴ Yildiz (2014) *op cit*

¹¹⁵ Mendonca, M., Lacey, S. & F. Hvelplund (2009): Stability, participation and transparency in renewable energy policy: Lesson from Denmark and the United States. *Policy and Society* 27, pp. 379-398.

¹¹⁶ Mendonca et al (2009) *op cit*

¹¹⁷ Lipp, J. (2007): Lessons for effective renewable electricity from Denmark, Germany and the United Kingdom. *Energy Policy* 35, pp. 5481-5495.

developments by corporations. The FIT support scheme was modified in 2001 insofar as wind generators are paid the market price plus a small environmental premium per kWh. However, the premium is deemed to be too low to further promote the growth of the community renewables sector¹¹⁸. This encouraged some co-operatives to sell their wind turbines to commercial and large investors who replaced them with bigger and more expensive turbines. So, such a market-oriented system rather incentivises larger market players and leaves less room for projects that are small-scale, such as the co-operative wind projects¹¹⁹. So a clear downward trend of installed wind energy capacities from community-led schemes occurred in the years after the millennium¹²⁰. Under the pressure of stricter renewable energy targets the support system was re-converted and FIT were re-installed in 2009, but with differentiated rates per renewable energy source¹²¹.

Co-operatives (wind farm guilds)

Energy co-operatives are the principle model for community investment in renewables in Denmark and have a long tradition. Although commonly framed as co-operatives, in legal terms a joint ownership is rather a partnership, a contractual relationship between electricity consumers. Under Danish law, co-operatives are not allowed to own wind turbines and had to devise a new way of joint ownership to pool certain resources¹²². Although they are not co-operatives in legal terms, they operate as co-operatives. These partnerships are employed to pool the resources through the sale of shares to members with the goal of purchasing wind turbines. Originally, electricity consumers were only allowed to build wind turbines in one installation and to sell the surplus to the grid. Later in the, early 1980s electricity consumer were allowed to install wind turbines in separate places and to share ownership among several consumers. However, private investors were only allowed to own shares corresponding to their household's energy consumption¹²³. So members usually aimed to buy enough shares to offset their electricity consumption. All community owned wind turbines should be financed through the sale shares while it is prohibited to contract debt in the partnership. So the joint liability of the partnership extending beyond the personal investment¹²⁴ does not impose any risks to the individual members who are then only liable for the amount they invest. Individual shareholders may take a debt to finance their individual shares. Thus, banks have included the finance of wind

¹¹⁸ Lipp (2007) *op cit*

¹¹⁹ Oteman, M., Wiering, M. & J-K. Helderma (2014): The institutional space of community initiatives for renewable energy: a comparative case study of the Netherlands, Germany and Denmark. *Energy, Sustainability and Society*, 4, 11.

¹²⁰ Mendonca et al (2009) *op cit*; Sovacool, F.K., Lindboe, H.H. & O. Odgaard (2008): Is the Danish Wind Energy Model Replicable for Other Countries. *The Electricity Journal* 21, 2, pp. 27-38.

¹²¹ Oteman et al (2014) *op cit*

¹²² Mendonca et al (2009) *op cit*

¹²³ Olesen, G.B., Maegaard, P. & J. Kruse (2002): Danish experience in wind energy - Local financing. Working report of the WELFI project. Comité de Liaison Energies Renouvelables.

¹²⁴ Bolinger, M. (2001): Community Wind Power Ownership Schemes in Europe and their Relevance to the United States. Ernest Orlando Lawrence Berkeley National Laboratory. LBNL-48357.

turbines in their regular portfolio, but there are some differences between the lending schemes for shares in a co-operative and the ones for loans to purchase one turbine by one investor¹²⁵. However, there are higher risks at the very beginning of the development. Once a wind co-operative has been formed, members are therefore asked to pay a fee of 1-1.5% of their investment to reserve their shares, which is not repayable and used to start developing the project¹²⁶. Finally, revenues from the surplus that is fed into the national grid are distributed among the shareholders in proportion to the amount of shares they hold. Partnerships in Denmark are a non-taxable entity, but taxes are levied on to the individual shareholders according to their individual tax situations. That is why the tax benefits for a certain degree of income generated from produced electricity fostered the participation in energy co-operatives.

The politically supported local ownership model also helped to bring about widespread acceptance of renewables across the country, but as a complementary energy source rather than an alternative¹²⁷. Initially, members of a private co-operative had to live within one municipality or in a radius of 3 km from the development. The underlying notion of this restriction was that those who benefit from FIT should also bear the visual burden of living next to a wind turbine¹²⁸. But this geographic restriction has been gradually eliminated making it possible for people living in the EU to invest in wind farms in Denmark since 2000¹²⁹, which resulted in distant ownerships and a trend towards the ownership of single farmers¹³⁰. These changes and the growing domination of larger commercial developers led to a local detachment of wind energy which is meant to have weakened the acceptance and status of wind power in Denmark over the last decade. Therefore, the Renewable Energy Act 2009 imposes an obligation on all new wind project developers to offer a minimum of 20% ownership to local people to impede the declining local ownership of turbines¹³¹. Priority should be given to people who live in a 4.5km radius from the development, and if this is not achieved people living in the municipality should be given the opportunity to buy the remainder of the 20%¹³². The Act also determines when and how shares should be offered, and says that the project has to be owned by an independent legal entity¹³³. A green fund should also provide particular support for new local wind co-operatives to cover the costs in the early and risky pre-investment examination stage. Even though this may certainly encourage new community investments in renewable energy, it is more likely that these policies for local ownership rather engender commercial developer-led partnerships

¹²⁵ Olesen et al (2002) *op cit*

¹²⁶ Olesen et al (2002) *op cit*

¹²⁷ Lipp (2007) *op cit*

¹²⁸ Bolinger, M. (2005): Making European-style community wind power development work in the US. *Renewable and Sustainable Energy Reviews* 9, pp. 556-575.

¹²⁹ Bolinger (2001) *op cit*

¹³⁰ Mendonca et al (2009) *op cit*

¹³¹ Oteman et al (2009) *op cit*; Mendonca et al (2009) *op cit*

¹³² Mendonca et al (2009) *op cit*

¹³³ Roberts, J., Bodman, F. & R. Rybski (2014): *Community Power: Model Legal Frameworks for Citizen-owned Renewable Energy*. ClientEarth: London.

through which locals buy in to renewable energy projects. Although community co-operatives and partnerships can still establish ownership under the 20% rule, this differs from the initial Danish support mechanism that incentivised smaller projects developed and entirely owned by community co-operatives.

Community Foundation Model

In contrast to the commercial business model of co-operatives/partnerships that benefits individual shareholders, the community foundation model ensures profits from renewables for the whole community. This model resembles the one of a Trust and is used to create a community pot to support community development and resilience. Community foundations are usually established by local businesses or associations and are regulated under the Commercial Foundation Act 1985. This Act requires a collective capital of 40,000 Euros to be invested in projects, such as renewables, but investors who contribute to the equity capital do not hold any ownership of the foundation and can therefore not influence and control how revenues from the investment are used. The foundation is the only legal person instead and ensures that the profits accrue to the community purposes for which the foundation has been established. The foundation also benefits from a lower tax rate. Due to the 20% ownership threshold for communities, the foundation model is usually combined with another private ownership model, such as partnership or commercial developers¹³⁴. However, due to the recent changes in wind farm planning that encourage the development of larger wind farms, communities have also increasingly been provided with the opportunity to invest in offshore wind farms.

Danish Case Study A: Hvide Sande

Hvide Sande is an example of the community foundation model and mirrors how small communities can collectively benefit from renewables. In 2010, the Homsland Dunes Tourist Association formed the Hvide Sande Community Foundation together with local businesses, unions and utilities in order to establish three turbines of 3MW on a shoreline owned by the local harbour. This allowed the project initiators to circumvent strict regulations that prohibit wind farm installations within 300m of the shoreline. The project gained wider acceptance among the local population and was successful only because it was community-led, as previous efforts for similar schemes had faced dissent. Hvide Sande owns 80% of the project and remaining 20% are owned by a local partnership consisting 400 local stakeholders who live within a 4.5 km radius, as required under the new law. Revenues from the project largely benefit the tourism association, but also the local community and harbour, as specified in the bylaws of the Hvide Sande Foundation. The board consists of members from the public and representatives of the harbour. Representatives from the Tourist Association are not allowed to serve on the board to maintain independence. The Foundation raised the necessary minimum amount of equity capital but, as a legal entity also borrowed the remaining funds from local lending institutions. Once the loan is paid of

¹³⁴ *ibid*

the Foundation will have annual revenues of 1.2 million Euros to spend on local development projects¹³⁵.

Danish Case Study B: Samsø

Samsø is an offshore wind farm, which was installed despite the unfavourable conditions imposed by the conservative government in 2001. The project was part of a national competition to make the island community of Samsø free from fossil fuels. The offshore wind farm consists of ten 2.3MW turbines and was developed by a co-operative founded by local residents and municipalities. The local municipality formed Samsø Energy Company Aps which took over five turbines, while the other five turbines are owned by local residents who made investments through the Samsø Vindenergi co-operative. About 440 of the 2000 households own shares in the wind turbines. However, the existing law on Electricity Supply created some complications for the municipality, as it limits the dominance of municipal companies in local commerce, but, in consequence, also the role of municipalities in taking the lead on energy and climate change issues. So this offshore wind farm reflects a public-private partnership, whereas the municipality along with local community groups raised 100% equity.¹³⁶

4. Canada

Due to the lack of favourable institutional conditions the development of renewables and the ability of communities to invest in renewable energy projects have only slowly began during the last decade and are just starting to take shape. In 2007, there was only one wind turbine in Canada that was co-operatively owned, while larger community wind projects were at the planning stage, mostly initiated by a co-operative in partnership with a developer¹³⁷. So, advocates of community renewable energy in Canada try to replicate the Danish and German experiences and models in order to increase the capacities of renewables. However, activities regarding community renewable energy are hugely divided between the different provinces, with Ontario and Quebec demonstrating the most ambitious activities. The only means of the federal government that may have an impact on co-operative development is the federal renewable energy subsidy¹³⁸. Provincial policy regulates corporate energy governance and determines at what price the electricity is sold by relying on a call for tenders auction system as a mean of awarding contracts, which prioritises large companies and deters energy co-operatives¹³⁹. Thus, the first energy co-operatives in Canada tend to invest in larger projects through partnerships with commercial

¹³⁵ Roberts et al (2014) *op cit*

¹³⁶ Pahl, G. (2007) *The Citizen-Powered Energy Handbook. Community Solutions to a Global Crisis*. Chelsea Green Publishing: West River Junction, VT. ; Roberts et al (2014) *op cit*

¹³⁷ Gipe, P. (2007) *Wind Energy Cooperative Development in Anglophone Canada*. For the Canadian Co-operative Association. Available online at http://www.wind-works.org/cms/uploads/media/Wind_Energy_Cooperative_Development_in_Anglophone_Canada.pdf

¹³⁸ *ibid*

¹³⁹ Stokes, L.C. (2013) *The politics of renewable energy policies: The case of feed-in tariffs in Ontario, Canada*. *Energy Policy* 56, pp. 490-500.

wind energy developers. Three essential elements comprising “the right to connect to the electrical, a legal obligation for priority purchase of wind energy and a guaranteed fair price”¹⁴⁰ and the likely need for a federal loan fund for co-operatives, were listed as the most important actions to advance community renewable energy in Canada. Since then, there have been some political and institutional changes that resulted in more favourable conditions for the establishment of renewables in Canada. Jurisdictions across the country are starting to support community investment in renewable energy, predominantly onshore wind farms, but also solar and hydro schemes.

Examples of community investment in Canada

Barriers for the development of renewables were removed by the introduction of the Green Energy and Green Economy Act in Ontario in 2009. This act introduced FIT-schemes which made it mandatory for municipalities to connect Feed-in Tariff contracted projects into the local distribution system while guaranteeing project-specific fixed prices for 20 years. In contrast to Germany where umbrella organisations supporting community energy were founded to bundle and support many existing energy co-operatives, a renewable energy coalition was founded in Ontario in 1999 to promote the renewables procurement to allow for community participation. The Ontario Sustainable Energy Association (OSEA) supported the introduction of the FIT model and argued that it would better drive investment and community-based ownership¹⁴¹. A Community Energy Partnerships Program was established in 2009, which provides funding for co-operatives to develop renewable energy projects. This programme employs two funding streams (Pre-FIT Organizational Development Funding / Development and Approvals Funding) in order to assist communities in paying for initial soft costs associated with resource assessment, legal services, engineering work and regulatory approvals. Ontario has also established a series of further programmes that provide support for the financing of community-led energy projects, such as a Municipal Renewable Energy Program, Aboriginal Energy Partnership Program, Aboriginal Loan Guarantee and Aboriginal Price Adder under the FIT program¹⁴². Additional policy changes were made in 2012 to prioritise community owned projects. In 2013, 3% of the solar power capacities and 11% wind energy capacities in Ontario have come from community projects¹⁴³.

Canadian Case Study A: Toronto Renewable Energy Co-op

The first co-operative renewables project in Canada was a single urban turbine in Toronto, which was initiated by the Toronto Renewable Energy Co-op (TREC). The turbine was developed by Windshare, a for-profit co-op founded by TREC, as a 50:50 joint venture with the municipal power utility Toronto Hydro. The turbine is 50% community owned and the

¹⁴⁰ Gipe (2007) *op cit*, page 21

¹⁴¹ Stokes (2013) *op cit*

¹⁴² Heagle, A.L.B., Naterer, G.F. & K. Pope (2011) Small wind turbine energy policies for residential and small business usage in Ontario, Canada. *Energy Policy*, 39, pp. 1988-1999.

¹⁴³ Stokes (2013) *op cit*

co-op consists of 600 members, 99% of whom are from Toronto. The minimum investment was \$500. Although completed, the project still attracts investments which are redirected into a trust to fund future projects. Some of the lessons of this early project were recognised in the development of the Green Energy Act, which triggered the emergence of further co-ops in Ontario, making use of similar principles¹⁴⁴. So many early community-driven projects play a crucial role in educating others¹⁴⁵.

Canadian Case Study B: Oxford Community Energy Co-op

The Oxford Community Energy Co-op (OCEC) was conceived as on a partnership project between Prowind Canada, Ontario Sustainability Services and IPC Energy 2013. It was then incorporated as a 'For-profit Co-operative with Share Capital' to become a limited partner and to buy in the Gunn's Hill Wind Farm limited partnership, while Prowind Canada acts as the general partner. OCEC aims to hold a 49% equity ownership of the limited partnership. The start-up costs for OCEC will be covered by loans from Prowind as well as loans and shares from members. The investment structure is based on preference shares and bonds, with different return schemes and with a minimum individual investment of \$5000 for 5 preference shares and \$1000 for one bond. The participation in the co-operative is open to any citizen in Ontario, including corporations, until the anticipated equity capital for the project is achieved (OCEC Inc. 2014).

The government of the province of Nova Scotia introduced a Community Feed-in Tariff scheme (COMFIT) in 2013, which also resulted in the emergence of energy co-operatives which also utilise a CEDIF program as a further incentive for pooling capital. The COMFIT scheme only supports small community-owned renewable energy projects providing stable rates for the energy produced and supplied to the distributional net of the province. Community-based groups can also establish partnerships with the private sector as long as 51% of the ownership is maintained by the eligible community group, which can be any combination of CEDIFs, co-operatives, non-profits or Mi'kmaq (First Nations) councils. Finance options include the raising of equity, debt or partnerships with the private sector. Finance for municipalities is also provided by Temporary Borrowing Resolutions. Potential lenders include a municipal lending fund, banks and credit unions depending on the ownership structure of the project. As already mentioned, the foundation of a Community Economic Development Investment Fund (CEDIF) can be used to pool capital within a community through the sale of shares. These funds are also eligible to receive tax benefits and reductions if shares are held over a certain period of time. Such a fund is Scotian Windfields, a network of eight community corporations in Nova Scotia that share ownership and invest equity in wind projects. Another Community Economic Development Corporation with CEDIF status in Nova Scotia is Wattswind, which has been awarded 33MW of

¹⁴⁴ MacArthur, J. (2010): Best Practices in Social Economy and Community Wind. BALTA- The BC-Alberta Social Economy Research Alliance.

¹⁴⁵ *ibid*

community wind power projects under the COMFIT scheme. Investments in the Wattswind company can be made directly or through co-operatives, whereas the latter ones do not qualify for tax benefits. There have been a number of smaller wind farm and single turbine projects in Nova Scotia which raised equity through shareholders investing in CEDIF funds. The majority also agreed on partnerships with local developers, companies and other corporations to create various business models for developing wind farms, whereas other projects are partially financed through debt in addition to equity from shareholders. Support for communities is also provided through a COMFIT toolkit demonstrating best practices and expected procedures for developing community-owned renewable energy projects under the COMFIT scheme.

Now there are different national and provincial programmes and support mechanisms in place in Canada that support and provide resources for community energy projects, including a scheme for Aboriginal projects and scheme for advancing co-op models in various sectors. Due to the relative novelty of opportunity for community ownership of renewables, a more widespread approach in Canada for community benefits seems to be the multi-faceted investment in communities through commercial developers and energy corporations (e.g. Voluntary community benefits program / community vibrancy fund), as well as the municipal tax revenues.

5. Australia

Community energy based on renewables is also fairly novel to Australia. National policies have been hampering the development of community investment projects over the last years¹⁴⁶, which have aggravated under the current liberal-conservative federal government that continuously reviews the mandatory renewable energy targets (MRET) as the key policy to support the establishment of renewables through renewables obligations for electricity retailers. The introduction of the MRET in 2001 resulted in a rapid growth in renewable energy capacity from 10.650MW in 2001 to 19,700MW in 2012¹⁴⁷, predominantly achieved through large commercial wind farm projects. To improve the support and provide more certainty, the MRET was separated in two parts, the Large-Scale Renewable Energy Target (LRET) covering large commercial developments and Small-Scale Renewable Energy Target (SRET) for domestic schemes. Electricity generated by renewables is usually sold under long term power purchase agreements (PPA) to electricity retailers. Due to the uncertainty involved in the continuous review of the RET there has been a slow uptake of PPAs which resulted in alternative finance schemes for mostly wind farms, including debt finance and joint partnerships with the private sector to implement wind farms in Australia¹⁴⁸. Therefore, most Australian states also established their own targets and obligations¹⁴⁹. Feed-in tariffs have been enacted by different states, but only support and focus on smaller residential, mostly solar schemes and exclude larger commercial renewable energy schemes.

Examples of community investment from Australia

However, despite the unpropitious political biases¹⁵⁰ and lack of supportive federal policies for community energy¹⁵¹ there have been many local groups emerging across Australia that promote community renewable energy by arguing for appropriate support schemes and against the national government's fossil fuel lobbyism. There are non-profit organisations, such as the Community Power Agency and Embark, which pursue an elimination of the barriers for community energy projects, by providing assistance, advice, knowledge and funding for communities interested in developing community renewable energy projects, but also to build a network consisting of suitable suppliers, contractors, investors and lenders that can help establish community energy schemes. These groups work as umbrella organisations for local co-operatives that were founded with the intention to invest in

¹⁴⁶ Valentine, S. (2010) Braking wind in Australia: A critical evaluation of the renewable energy target. *Energy Policy* 38, 7, pp. 3668-3675; Effendi, P. & J. Courvisanos (2012) Political aspects of innovation: Examining renewable energy in Australia. *Renewable Energy* 38, 1, pp. 245-252.

¹⁴⁷ Simpson, G. & J. Clifton (2014) Picking winner and policy uncertainty: Stakeholder perceptions of Australia's Renewable Energy Target. *Renewable Energy* 67, pp.128-135.

¹⁴⁸ Kann, S. (2009) Overcoming barriers to wind project finance in Australia. *Energy Policy* 37, pp. 3139-3148.

¹⁴⁹ *ibid*

¹⁵⁰ Schlapfer, A. (2009) Hidden biases in Australian Energy Policy. *Renewable Energy* 34, pp. 456-460.

¹⁵¹ Hicks, J. & N. Ison (2011) Community-owned renewable energy (CRE): Opportunities for Australia. *Rural Society* 20, pp. 244-255.

renewables. In Australia, these co-operatives are usually incorporated to ensure the limited liability of their members.

Australian Case Study A: Hepburn Wind Farm

The first community wind farm that was built in Australia in 2011 is the two turbines 4.1MW Hepburn Wind Farm located in Victoria, which is owned and operated by the Hepburn Wind Park Co-operative Ltd. The co-operative also manages a community fund and is responsible for providing financial returns to its members. The co-operative has more than 1900 members who invested in the project, whereas the majority of members are locals. But the entire project was funded through various sources: \$9.8 million of capital from members; bank loan \$3.1 million; two grants from Victoria \$1.8 million and debt guarantee from Embark Australia of \$1 million. However, raising the equity from members took longer than anticipated and only the announcement of increasing the share price eventually pushed the capital raising. The control over the turbines is organised democratically as each member has one vote, but dividends are distributed proportional to their investments. Shares can only be purchased by members of the co-operative. The total output produced by the wind farm is purchased by the retailer Red Energy. Red Energy offers, in partnership with the Hepburn Wind co-op, a particular community saver plan to residents living in Victoria and supporting the wind farm. The offer includes a 10% discount off the energy bill if paid on time as well as a contribution of \$12.50 to the Hepburn Wind Community Fund for every bill that is paid on time. A proportion of the revenues from the electricity sale and the contribution from Red Energy go into the Fund which is projected to provide \$1 million for local sustainability projects over the next 25 years. Having developed the first Australian community wind farm project, the Hepburn co-op also provides and lists detailed key lessons and potential problems for other community renewable energy projects.

Australian Case Study B: Mt Barker Wind Farm

Mt Barker wind farm in Western Australia, consisting 3 turbines erected on a private sheep farm, was developed and is managed by a small consultancy specialised in renewable infrastructure development and financing. The wind farm was jointly funded by the community owned Mt Barker Power Company and Advanced Energy Resources, which holds the major equity and is the largest debt provider for the Mt Barker Power Company. Moreover, the project was also funded by the federal government through the now abolished Renewable Remote Power Generation Program.

Australian Case Study C: Denmark Community Windfarm Ltd.

The third community wind farm in Australia was initiated by the Denmark Community Windfarm Ltd. (DCW) and commenced operation in 2013. The wind farm consists of two turbines with a combined capacity of 1.6MW. DCW acts as the main shareholder and returns all the revenues from the turbines to the community. The project has 115 investors

(90% locals) and financial closure had to be declared due to a rapid uptake of shares in the project through which the 1.8 million shares were taken within less than a month. DCW also applied for funding from the Renewable Remote Power Generation Program to cover 50% of the costs. Local businesses were involved throughout the development of the project and contributed to all project phases. Energy generated by the wind farm is exported into the national grid by the retailer Synergy on a long term PPA. The turbines will cover 30% of the demand of the Denmark area in Western Australia. Shareholders may decide to extend the facility as the permission includes two more turbines.

Besides the case studies mentioned here, there are more projects currently at the planning stage that involve various degrees of community participation. For example, the Central NSW Renewable Energy Co-operative Ltd (CENREC) in New South Wales plans to buy in to the 129 MW Flyers Creek Wind Farm and to purchase one turbine once the wind farm is approved. CENREC then intends to raise the equity required to purchase the wind turbine by expanding its membership. The Flyers Creek Wind Farm is being developed by the company Infigen Energy, but was initiated by local landowners who approached Infigen Energy to assess the possibility of a wind farm in the area. The project was approved in March 2014.

6. South Africa

The contribution of renewables to the used electricity in South Africa has been marginal so far, but the government envisages an enormous expansion of the renewable energy sector while decentralising the energy system and encouraging the involvement of independent power producers¹⁵². South African policies for renewable energy differ substantially from the ones evolved and employed in Europe. First, a feed-in tariff scheme that existed between 2009 and 2011 was supposed to guarantee fixed prices per generated kWh from solar, wind and hydro sources¹⁵³. The tariffs in the REFIT system were guaranteed for 20 years, but were also reviewed annually¹⁵⁴. As a result of the review, the system was abandoned in 2011 due to the lack of uptake and installed capacities from renewables as well as legal concerns¹⁵⁵. The REFIT framework which was highly responsible for the emergence and the success of renewable energy projects and community investments in renewables in Europe has not been as efficient in South Africa as anticipated. Therefore, it was replaced in 2011 by a bidding scheme called the Renewable Energy Independent Power Producer Procurement Programme (RE IPPPP), which aims to procure a target of 3.725 MW

¹⁵² Scholvin, S. (2014) South Africa's Energy Policy: Constrained by Nature and Path Dependency. *Journal of Southern African Studies* 40 (1), pp. 185-202; Msimanga, B. & A.B. Sebitosi (2014) South Africa's non policy driven options for renewable energy development. *Renewable Energy* 69, pp. 420-427.

¹⁵³ Scholvin (2014) *op cit*

¹⁵⁴ Pegels, A. (2010) Renewable Energy in South Africa: Potentials, barriers and options for support. *Energy Policy* 38, pp. 4945-4954.

¹⁵⁵ Tait, L., Wlokas, H.L. & B. Garside (2013) Making communities count. Maximising local benefit potential in South Africa's Renewable Energy Independent Power Producer Procurement Programme (RE IPPPP). International Institute for Environment and Development, London; Eberhard, A. (2013): Feed-in Tariffs or Auctions? Procuring Renewable Energy Supply in South Africa. Viewpoint Note Number 338, Financial and Private Sector Vice Presidency, World Bank Group, Washington DC.

of renewable energy from wind, solar, hydro and biomass facilities through five procurement rounds¹⁵⁶. The procurement programme aims to stimulate a new renewable energy sector in South Africa through a tender scheme which focuses on tackling climate change and economic development at the local level alike. Under this RE IPPPP system, prospective developers are required to specify and negotiate a tariff for the produced electricity but without exceeding a cap set in the procurement¹⁵⁷. This system is supposed to advertise projects individually, set a minimum capacity of 1MW, prohibit direct sales to municipalities¹⁵⁸ and thus allows the Department of Energy to control the amount of installed capacities¹⁵⁹.

Therefore, this competitive bidding scheme in South Africa differs from the NFFO schemes that benefitted large energy companies and failed to stimulate the development of local community renewables in the UK, and intends to overcome these downsides by enforcing economic development obligations upon commercial developers. There are two fundamental criteria imposed on developers that intend to bid under the RE IPPPP scheme. Obligations to offer ownership shares and specific economic development opportunities to local communities are a crucial part of the bidding requirements and the viability of the overall project, both of which are supposed to embed the project in the local context and to generate benefits for local communities. These obligations are addressed by the submission of a socio-economic development plan as part of the whole project application.

First, developers are obliged to grant communities an equity shareholding of at least 2.5% of the project, although, in practice, this has been up to 40% per cent in later and more competitive bidding rounds in order to make the project application more competitive. There are two ways of how generally impoverished communities can finance their ownership shares. On the one hand, developers may simply give the shareholding for free, if they think the project can afford it¹⁶⁰. On the other hand, funding for communities to acquire equity in a project is provided by South African development finance institutions, such as the IDC or DBSA, that offer soft loans which are paid back through community dividends resulting in very low revenue streams in the first years¹⁶¹. Revenues from the ownership typically form the biggest stream of income for communities from a renewable energy project¹⁶². Community ownership is usually legally governed in terms of a community trust that manages the revenues for a community rather than dividends for individuals.

¹⁵⁶ Wlokas, H.L., Boyd, A. & M. Andolfi (2012): Challenges for local community development in private sector-led renewable energy projects in South Africa: an evolving approach. – *Journal of Energy in Southern Africa* 23 (4), pp. 46-51.

¹⁵⁷ Msimanga & Sebitosi (2014) *op cit*

¹⁵⁸ Msimanga & Sebitosi (2014) *ibid*

¹⁵⁹ Scholvin (2014) *op cit*

¹⁶⁰ Tait et al (2013) *op cit*

¹⁶¹ *ibid*; Baker, L. & H.L. Wlokas (2014) South Africa's Renewable Energy Procurement: A new frontier. Tyndall Centre for Climate Change Research. Working Paper 159, June 2014.

¹⁶² Tait et al (2013) *op cit*

Secondly, developers are required to commit 1-1.5% of the total revenues to the purpose of socio-economic development, and can choose to use another 0.6% for enterprise development¹⁶³. The enterprise development requirement specifically targets support programmes for small and local businesses to be listed in the project application too¹⁶⁴. While communities usually have to wait for years until the debts are paid off and profits are generated and before any substantial revenues based on their ownership can be generated, this small percentage starts from the first operative year of the project¹⁶⁵. Differently weighted criteria for the socio-economic contribution of a planned project include job creation, local content, ownership, management control, preferential procurement, enterprise development and socio-economic development, whereas four out of these seven elements should be realised in communities within a radius of 50km around the project site. However, there are no clear guidelines as to how these requirements are implemented in practice which leaves some leeway for the developers on how to involve local communities and how to realise local development projects. Funds allocated to local communities depend on the total size of the project, on financing conditions as well as on the agreed share of the project. Moreover, the choice of communities within the prescribed radius that may benefit from development projects is subject to the developer's discretion, which may therefore stretch over municipal and regional boundaries, may cause conflicts between divided communities, villages, beneficiaries and non-beneficiaries, and may overlap to foster one community that benefits from more than one energy project realised at different times¹⁶⁶.

Projects that bid under the RE IPPPP scheme are assessed on grounds of the offered tariff (70%) as well as on their economic contribution (30%)¹⁶⁷. However, the socio-economic requirements are highly complex and challenging for the competence of developers that are forced to engage early with local communities in order to identify feasible and relevant projects in which they can invest. Identifying local needs and beneficiary groups is the most important step for an efficient and successful socio-economic development component¹⁶⁸. Therefore, some of the developers employed consultants and community liaison officers to efficiently engage with communities in order to identify and address local problems that can be tackled and to boost their application¹⁶⁹.

So far, there have been three rounds of the RE IPPPP held in November 2011, May 2012 and November 2013, but project finance has become two-fold in South Africa. While the projects of the first two bidding rounds were mostly debt financed almost exclusively by local banks, round three projects witnessed a dramatic shift away from financing through

¹⁶³ Wlokas et al (2012) *op cit*

¹⁶⁴ Tait et al (2013) *op cit*

¹⁶⁵ Baker & Wlokas (2014) *op cit*

¹⁶⁶ Wlokas et al (2012) *op cit*; Tait et al (2013) *op cit*

¹⁶⁷ Baker & Wlokas (2014) *op cit*

¹⁶⁸ Tait et al (2013) *op cit*

¹⁶⁹ Baker & Wlokas (2014) *op cit*

the main South African banks towards corporate finance by international utilities. The option of corporate finance through access to foreign capital and supply chains allows more risks, brings lower returns and energy costs but also triggers fewer economic development opportunities for South Africa and undermines the chances of local players to break into the renewables market of South Africa¹⁷⁰. Moreover, additional bureaucratic requirements, non-refundable application fees, and protracted power purchase agreements negotiations further discourage smaller and community-led projects¹⁷¹. In 2012, the state-owned monopolist energy provider Eskom agreed to purchase 1.400MW of renewable energy from independent producers¹⁷² which provides some certainty for the developers. There are a number of funding mechanisms available for the manufacturing and development of renewables¹⁷³, which are rather aimed at the developers. However, the Department of Energy also prepares plans for a Small Projects Renewable Energy Independent Power Producer Procurement Programme, which targets smaller and local independent power producers.

In essence, while community renewable energy projects have rather evolved in a bottom-up way in Europe including co-operatives approaching developers or bringing forward their own projects, the involvement of local communities in the production of renewable energy and sharing of revenues is prescribed in a top-down approach by South African legislation. However, although the legal requirements to include communities in the ownership of renewable energy projects and to divert revenues to local communities epitomise a unique approach for community investment, revenues available for communities tend to be delayed and will only manifest after several operative years.

Community Trusts (beneficiaries)

Community trusts are the most common legal entity of how the ownership requirement is met in South Africa. The shareholding is set up as a trust which represents a local community and manages the dividends that go into a community. Besides the revenues resulting from the community ownership requirement, revenues from the socio-economic development and enterprise development branches may also be paid into the trust structure¹⁷⁴. There is no general and governmental precondition of how the activities of a trust are structured. Trusts are governed by a board of trustees that can include representatives of the local community, but also representatives from the developer, financial institutions, professional trustees and legal professionals¹⁷⁵. The number of individuals from the community on the board of trustees depends on how much control the project company is willing to concede to the community, which can also lead to tensions

¹⁷⁰ Baker & Wlokas (2014) *op cit*

¹⁷¹ Msimanga & Sebitosi (2014) *op cit*

¹⁷² Scholvin (2014) *op cit*

¹⁷³ Msimanga & Sebitosi (2014) *op cit*

¹⁷⁴ Tait et al (2013) *op cit*

¹⁷⁵ Baker & Wlokas (2014) *op cit*

and mistrust within a community¹⁷⁶. Shares in the equity of the project do not necessarily grant them voting rights in the projects. This structure differs from most co-operatives in Europe which are solely governed by representatives from the community even though organised as a limited liability company.

South African Case Study A: Jeffrey's Bay Wind Farm

Jeffrey's Bay wind farm has been the first large scale wind farm developed under the RE IPPP scheme in South Africa and commenced operation in mid-2014. The wind farm was developed by Globeleq and is owned by a consortium of South African and international investors. It consists of 60 turbines with a combined capacity of 138MW. In compliance with legislative requirements, a local community trust, the Amandla Omoya Trust, owns 6% of the wind farm. This exceeds the minimum of 2.5% community ownership for the first bidding round, but is generally lower than for projects secured in the later and more competitive rounds. Equity for the community was financed through a loan from the Development Bank of South Africa (DBSA) which will be repaid through the shareholder dividends generated by the projects. Once the loan is paid off the trust will use the dividends to support local community projects. The other socio-economic and enterprise development requirements are met through the various projects and programmes. Enterprise development schemes will particularly support emerging black farmers in the area, while the socio-economic focus is on health, vulnerable children, sports and education programmes. The wind farm project also created many local jobs during the construction phase, whereas 45% of the site workers were recruited from local communities. A local community liaison officer was employed to facilitate this process. Since it has reached the operation stage, the company employs eleven people to operate and maintain the wind farm¹⁷⁷.

¹⁷⁶ Tait et al (2013) *op cit*

¹⁷⁷ Jeffreys Bay Wind Farm (2014) Jeffreys Bay Wind Farm Community Projects. Available online at: <http://jeffreysbaywindfarm.co.za/jbwf-community-projects/>

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