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Community Energy in Scotland: the Social Factors for Success

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Executive Summary

The Scottish Government wishes to maximise uptake of community renewables projects to ensure Scotland can meet its target of 500 megawatts (MW) of community and locally-owned renewable energy by 2020. In that context, this report identifies the critical factors underpinning successful projects, in order to provide recommendations for ways to help replicate and scale-up that success.

Currently, there are 360 community energy projects in Scotland, which together constitute 30.4 MW of installed, operational renewable generating capacity. There is an estimated further 180 MW at various stages of the planning process. Despite this potential, only 44% of the projects which were started are currently installed and operational.

Community energy projects are supported by the Scottish Government via the Community and Renewable Energy Scheme (CARES), which provides free advice and financial assistance including grant and loan support; and through the Community Energy Toolkit, a self-help guide for communities who are embarking on a project. This report intends to provide analysis to assist the Scottish Government in enhancing support for community energy projects and making progress towards its community energy targets.

This report provides evidence of the social factors which influence the success of community energy projects through different stages of development (from conception to operation). We chose this focus because of the significance of these factors; and because there has been very little focus on them to date. The key findings are as follows.

At the conception stage:

- Projects are more likely to be started in less deprived areas than in areas of higher deprivation by a ratio of 2:1. They are also more likely to have become operational.
- The motivations for starting a project are very similar regardless of the deprivation level of the area in which the group is situated. Although financial factors are the primary incentive for many groups, these financially-motivated projects are less likely to be successful (that is, completed and installed) than those for which carbon saving is the primary motivation.

At the feasibility stage:

- Pre-existing community cohesion and identity is a critical factor in the success of a project. A shared community identity underpins (rather than results from) group action.
- Longstanding community groups starting an energy project are more likely to be successful than newer groups, or those set up specifically to start a project.

- While they are useful to inspire the confidence to start a project, the existence of legal, financial or technical skills within a project does not seem to be a determinant of project success.
- Groups learn from each other. They benefit from sharing information about practical matters and technical skills, spreading ideas and enthusiasm, and seeing projects in action. Learning about failures is also helpful.
- Our data show *less* opposition to projects which subsequently stalled than for those which are ongoing and operating, suggesting that opposition was not the key reason for this success and failure.

At the planning stage:

- 97% of community energy projects which make it to the planning stage are given approval. This is higher than the rate for private projects (75% on average, or 86% when controlled for capacity).
- Community projects also experience quicker planning turnover periods than privately-owned projects. This is true even when comparing community projects with private projects of the same installed capacity. On average, wholly-owned community projects take eight months to go through planning – two months less than private projects of equivalent capacity.
- Groups' perceptions of the knowledge and support of their local council strongly correlated with project success; a council which a group reported to be knowledgeable and supportive was very likely to have a high approval rate for community energy projects.
- Planning approval rates vary significantly between councils.
- Very few councils have any specific community energy policy or guidance. Some councils that do are amongst those with the largest proportions of community energy capacity, suggesting the positive role of this pro -active policy stance.
- However, some of the councils with the *highest approval rates* do not have any formal policy, which points also to the importance of informal relationships, contacts and shared agendas between councils and communities, in determining the different approval rates.
- Pre-planning costs (for non-capital items) for onshore wind are on average 70% higher for communities, as a proportion of total project costs, than for a commercial wind developer. These costs are entirely at the projects' own risk.
- A significant proportion of projects are subject to long delays in pre-planning; the most common reason for this delay is the time taken to negotiate over leasing or buying land.

At the operation stage:

- The majority of Scottish community energy projects are developed through community-owned local development organisations, and there are relatively few energy co-operatives. This contrasts strongly to England, Wales, and other countries in Europe, where the co-operative model dominates.

We make a range of recommendations based on these findings. In brief, we advocate:

1. A proactive stance in identifying communities with a history of active participation and strong social capital, and informing, encouraging and advising them about developing an energy project;
2. Sharing learning and stories of success and failure between communities, through increased community knowledge exchange;
3. Distilling knowledge and experience, sharing best practice and formalising support for community energy at a council level.
4. Providing community groups with greater access to a range of support services and information on different business models and ownership structures, finance opportunities, and grid and land access issues.

Overview: a focus on the social factors for success

This report analyses the factors which influence the success of community energy projects. We take as our starting point the apparently limited growth in community energy projects, and we make recommendations for policy interventions to address this. While we acknowledge the importance of material resources, we focus in particular on the social factors, assets, and pre-requisites for success.

We are defining 'community energy projects' as those which have the involvement of a place-based social enterprise, include participation by local people, and a distribution of collective benefits.[1]

The data sources upon which we have drawn for this report include the Scene Connect database[2], the results from a UK Energy Research Council funded project, *EnGAGE Scotland*[3], data from Community Energy Scotland (CES), and the latest research on community energy and sustainability initiatives in Scotland (including Harnmeijer, 2012, Creamer, 2013, and van Veelen, 2013).

The current state of community energy in Scotland

Across Scotland, 360 community energy projects – with various power generation technologies from onshore wind to biomass boilers – constitute 30.4 MW of installed renewable generating capacity, but only a tiny proportion (<1%) of the total energy generated from renewables in Scotland. Onshore wind dominates, constituting 86% of total capacity, with biomass and woodfuel making up a further 10%. In addition, there is an estimated 180 MW currently at various stages of the planning process.

Despite the significant number of community projects in operation, only 44.4% of the projects that have been started are currently installed and generating energy:

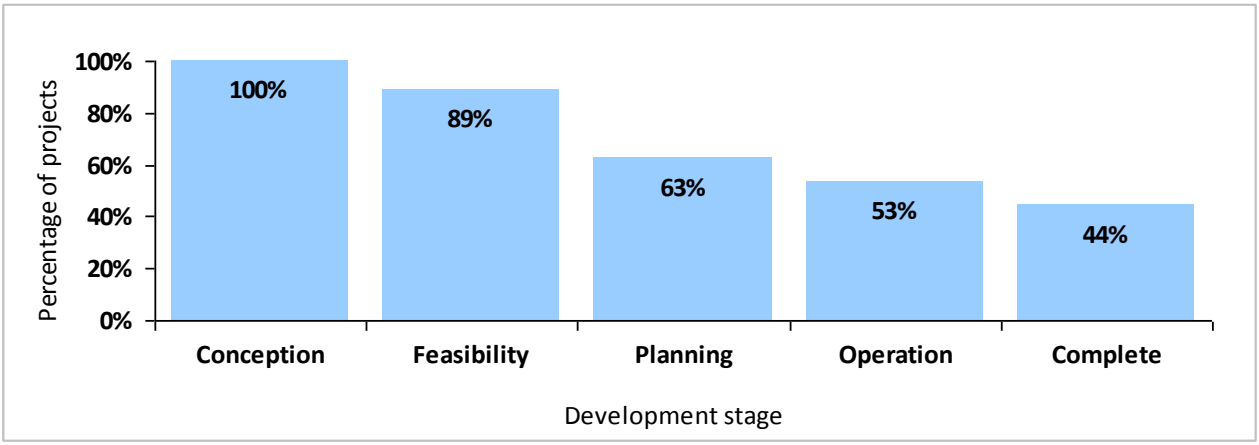


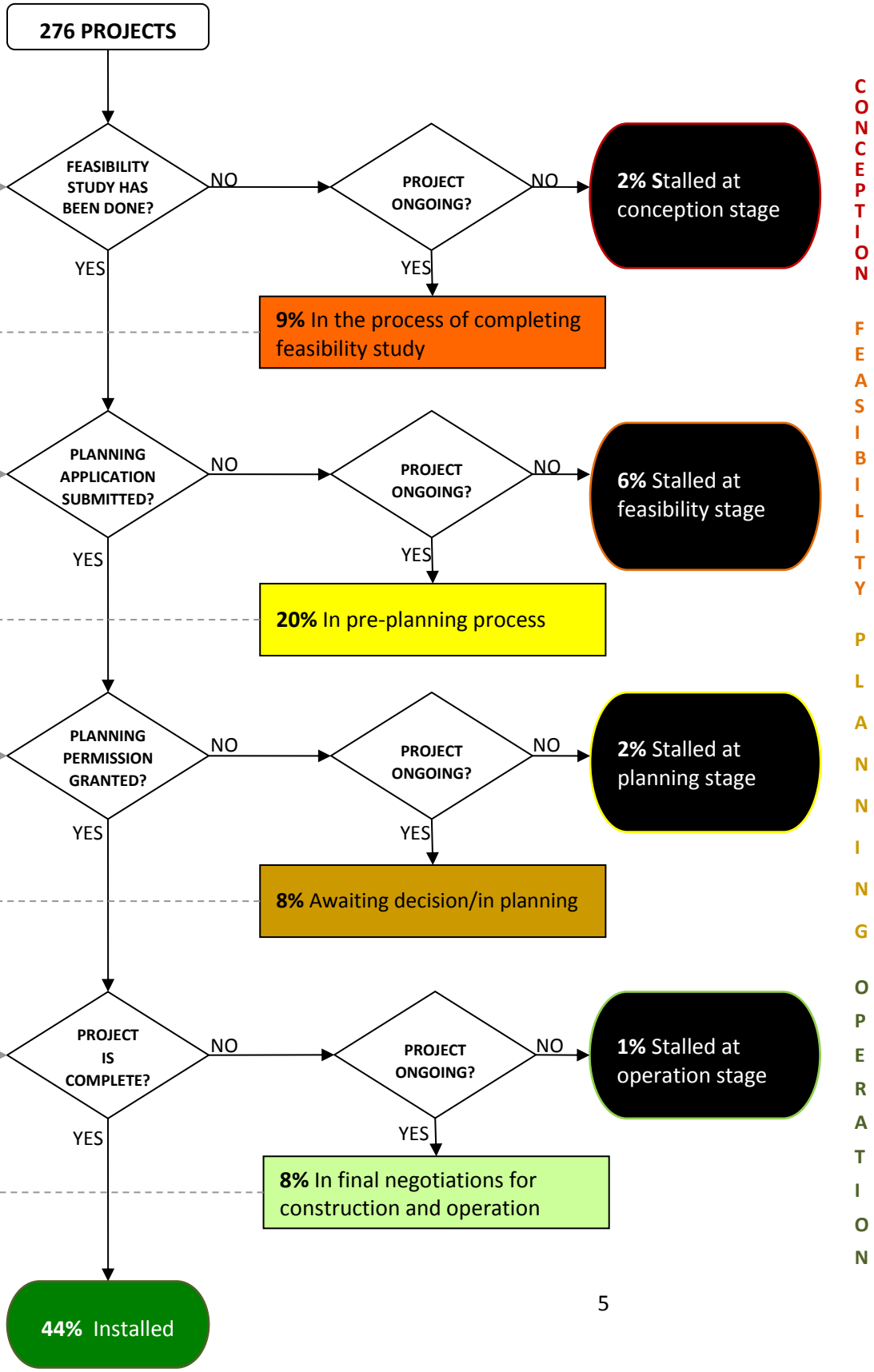
Figure 1: Percentage of all projects that have reached each development stage. Source: Scene Connect, 2013.

1 Following Walker and Devine-Wright, 2008

2 SCENE – the Sustainable Community Energy Network – has a comprehensive database of community energy projects on which we have predominantly drawn for this research, which includes very detailed information on a large number of projects: see http://scenetwork.co.uk/

3 http://www.institute-of-governance.org/major_projects/ukerc_-_engage_scotland

The flow chart below draws on a subset of 276 Scottish community projects from the Scene Connect database for which data on project status is available. It shows in detail the different stages through which a project must proceed, and the proportion that are waiting or are stalled at each stage:



In the flow chart, 44% of projects are currently installed, whilst the remaining 56% of projects have either been abandoned or are held up at different stages of the process (and indeed, this figure may be even higher)[4]. In this report we discuss the reasons why.

This report is structured around the different the stages in the process of a community energy project, and we address the factors which influence success and failure at each of these:

Stage 1: Conception

The first stage for any project is conception; getting started in the first place. There are a number of reasons why groups decide to embark on a community energy project. While there is much focus on barriers to community energy (and rightly so), it is also key to understand motivations or drivers that spur groups to conceive of these projects, and provide the impetus to pursue them. The *EnGAGE* study (see Bomberg and McEwen, 2012 and van Veelen, 2013) identified the following motivations for launching and continuing with a project.

The first and most obvious is ***economic***. Groups with income-generating objectives (such as the Edinburgh Community Energy Cooperative or development trusts) are less inclined to prioritise broader low-carbon goals. Instead, their central concern is the economic and related benefits such schemes may bring. While they may cumulatively contribute to changing energy supply, they may contribute little to reducing energy demand within their communities.

Environmental benefits are important for some groups, but not all. For several groups (often the Transition Town groups) there is an emphasis on reducing their community's carbon footprint. Groups such as Carbon Neutral Biggar or PEDAL (Portobello Transition Town) include micro-generation projects as part of a larger effort to reduce carbon emissions, confront the challenge of peak oil and achieve 'carbon-neutrality'. For these more environmentally-focused groups generating heat or power from renewable sources is important, alongside reduced energy use.

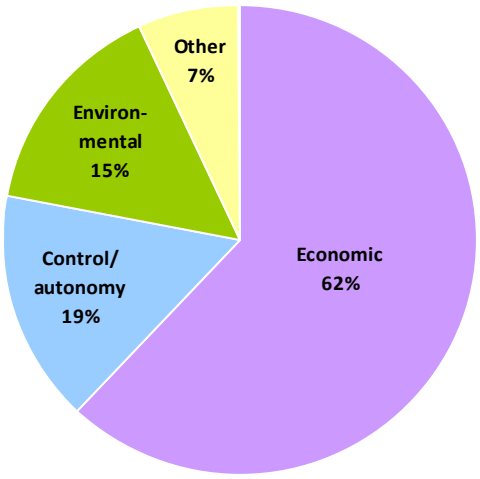


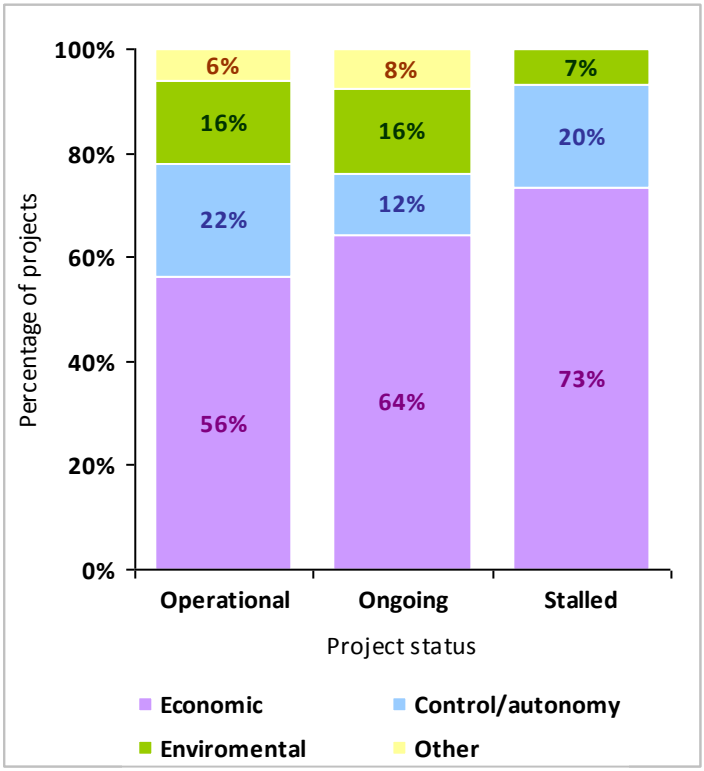
Figure 2: Primary motivation of all projects. Source: Scene Connect, 2012.

'When the wind turbines go up, the idea is that the money is spent locally, kept local, and very much focused on what local people want to happen. Who knows better than the people who live here what they need?' (Community activist, June 2011).

[4]Projects which stalled (particularly at an early stage) are less likely to feature in our data because project members are either no longer available, or willing, to report on the failure of a project.

Thirdly, there is often a desire for more **autonomy or self-government** for the community. Groups may embark on such projects as a way to overcome dependence on public authorities, NGOs or private land-owners, in part to gain more control over energy supply and costs, but also to shape community development more broadly, and to try and secure community survival. Success of these projects thus may have less to do with actual energy outcome and more about community sustainability and self-reliance.

We have analysed further which motivations are more likely to lead to a successful project; that is, does a project need to have a particular rationale behind its conception to be realised? The chart below details the primary motivation for engaging in renewable energy development for different project development stages:



Motivation and success: As shown in Figure 2 above, the most common primary motivation is economic. However, Figure 3 shows that economic factors are the primary motivation for a much greater proportion of stalled projects than operational projects, with strikingly few stalled projects being environmentally motivated.

Our further analysis also shows that 50% of the projects with greater autonomy as their primary motivation are operational (compared to 34% with economic reasons as the primary motivation).

This suggests that projects primarily motivated by autonomy or environmental factors have a relatively higher likelihood of success than those projects where financial motivations are prioritised.

Figure 3: Primary motivation by project status. Source: Scene Connect, 2012.

Motivation and deprivation: When we control for deprivation, the data are remarkably similar. Whilst groups in areas of high deprivation are more likely to cite income generation as their primary motivation (55% of groups, compared with 51% in areas of average deprivation, and 37% in areas of low deprivation), that gap closes once another economic motivation – lowering energy costs – is included. When the motivation to lower energy costs is added, the proportion of groups with one of these financial reasons as their primary motivation is 62% in high deprivation areas; 63% in areas of average deprivation; and 63% in areas of low deprivation. This finding suggests that motivations are very similar regardless of the deprivation level.

Stage 2: Feasibility

The flow-chart on p4 and Figure 1 show that while most projects make it past the conception stage, if a project is going to fail, it is most likely to do so at the feasibility stage, where the plans for the project become more concrete and it is prepared for the planning process. Of total project failures, 57% were at this stage.

There are many reasons for this. There is a common assumption that lack of financial capital is a key barrier (Walker, et al 2010). Financial issues are indeed important and we analyse their role below. But our study has also underlined the role of community identity, trust and cohesion. For example, a strong community group is in a good position to be able to embark on an energy project even if it lacks financial resources. We discuss the social factors which influence success at the feasibility stage, before moving on to outline the key financial and resource issues.

a) Economic profile of a community: although the picture is complex, we find that projects are significantly more likely to be started in areas of below average deprivation than in areas of above average deprivation, by a ratio of 2:1. Our study also found that there was a correlation between type of group and its motivation, and deprivation level. For example, Transition Town groups who also set up a community energy project were more likely to be based in areas of below average deprivation, whilst groups focused on community regeneration were more likely to be found in areas of above average deprivation.

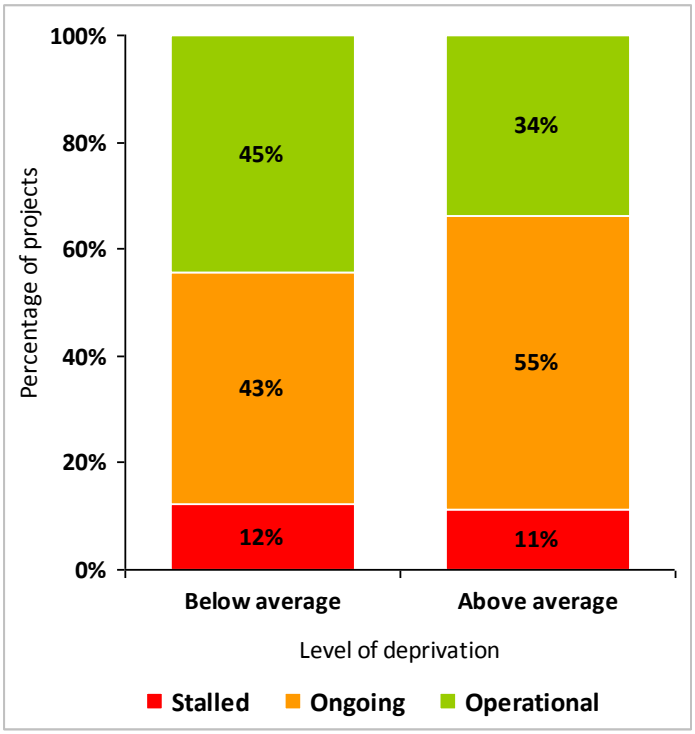


Figure 4: Comparison of the percentage of projects reaching each development stage for below and above average levels of economic deprivation. Source: Scene Connect, 2012.

Furthermore, Figure 4 suggests that projects started in areas of below average deprivation are more likely to have reached completion, while areas of above average deprivation have a greater percentage of projects still under development.

We found that deprivation has no impact on the community group's existing expertise, suggesting that project members with relevant skills are likely to exist in deprived communities as well as more affluent ones. We consider the role of community expertise in more detail below.

b) The role of individual entrepreneurs, and project members and staff: some members of a community can be instrumental in harnessing the enthusiasm of communities, and starting projects or moving them forward. Research (Ganz, 2002) on social movements and community mobilisation identifies in particular the importance of individuals adept at empowering others, building relationships and creating action for social change. Several community energy groups in Scotland seem to feature key individuals in their history

or current activities. In some cases these may be politicians – Mark Lazarowicz MP, for instance, was cited as instrumental in establishing the Edinburgh Community Energy Co-operative (ECEC). But less well-known dedicated activists can also be vital to success. Certainly the most active groups we investigated tended to have dedicated, paid, project officers with the time and expertise to navigate communities through the range of funding, planning and political hurdles. This vital resource may be time-limited though, and dependent on fixed-term appointments associated with grant awards.

Added to the insecurity of roles financed through grant funding, a potential challenge observed in remote rural locations is that while project managers often have a great deal of experience and technical expertise, they are not necessarily the most embedded members of the community. These individuals may have gained expertise elsewhere and have moved in, or returned, to the community relatively recently. As a result, they may not be able to rely on existing local networks for support. It is important therefore that there is a balance between the benefits of having in-house expertise, and having project champions who are well-known and respected locally in order to engender the community's trust and buy-in.

Community energy projects can often be largely reliant on volunteers. Our data show that not only can it be difficult to find people with sufficient skills and time, but this involvement can put significant strain on individuals, and makes projects vulnerable to sudden departures of key skilled members (van Veelen, 2013).

c) Local knowledge, skills, and expertise: Beyond the presence of an entrepreneurial individual or project champion, we explored the extent to which having community members with particular skills (financial, legal, management and technical) influenced project success:

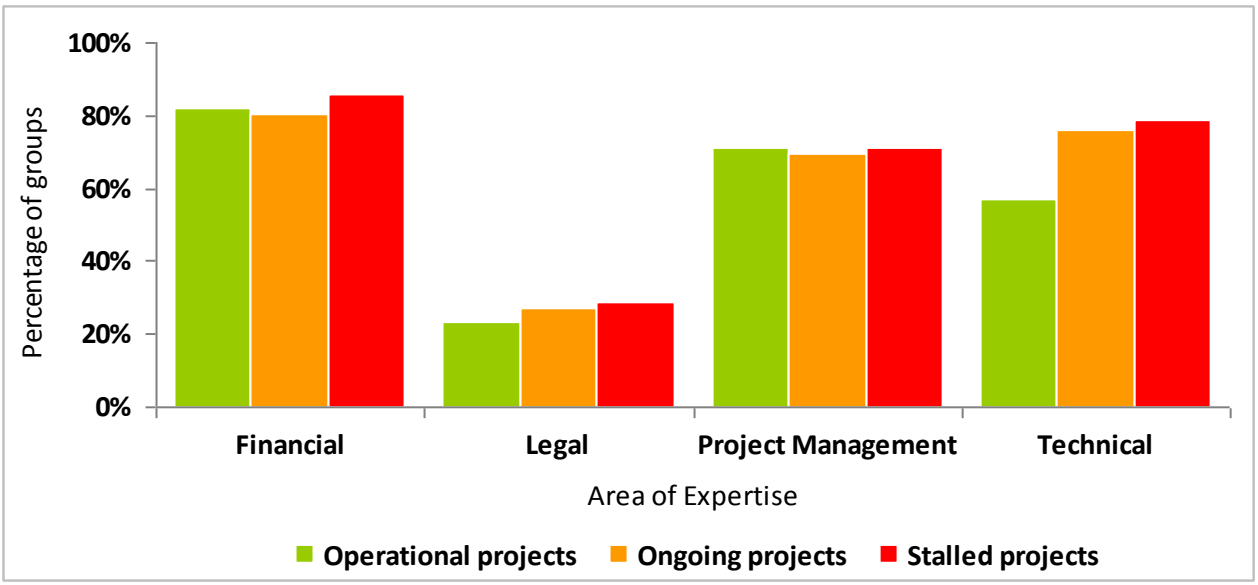


Figure 5: Percentage of groups with within-community expertise by success. Source: Scene Connect, 2012.

The data are remarkably similar for success and failure, and all types of expertise. Our analysis shows that while projects seem to need to have financial, management, and technical expertise in order to set up in the first place, the existence of these skills is no guarantee of success beyond conception. The data suggest that, somewhat counter-intuitively, having access to expertise within a community makes little difference to the success of a project. Indeed, in the case of technical expertise, projects were more likely to succeed if

they *did not* have anyone from within the community able to offer this. This suggests that 'in-house' technical knowledge is not necessarily an indicator of success.

It is striking that the vast majority of projects lack legal expertise from within the community, although again, this seems to have little effect on project outcomes. However, it is worth noting that a third of both operational and ongoing projects had access to *external* legal help, whereas none of the stalled projects did. This suggests that legal advice from within the community was often unavailable, and when it was available this had no bearing on project success. Moreover, recognising this need and seeking external legal advice was more likely to lead to a successful project.

We therefore suggest that, while the vast majority of community energy projects are conceived by groups with in-house skills (perhaps because these skills give the members confidence to start up a project, and reflect a high education level), these skills are not required in and of themselves for a project to be successful. If skills are apparently not a critical asset, we therefore turn our attention to other resources.

d) Community identity: Our research finds that community cohesion and identity is a critical factor in the conception and success of a project. But that finding comes with an important qualification. Community identity facilitates successful projects when it *pre-dates* that project. In other words, as shown by the results from the *EnGAGE* project, a shared community identity underpins (rather than results from) group action. Community identity helps both to foster action on renewable projects, and can help overcome problems of collective action which might otherwise stymie community energy efforts.

> ***'If, by community, you mean how we came together to take action, to do something, well that's real. Then the community feel is very powerful. It can overcome lethargy' (Community activist, July 2011).***

To illustrate, the social regeneration aims of groups in Castlemilk in Glasgow or Leith in Edinburgh underline the perceived community benefits of such schemes. But a certain degree of pre-existing social cohesion and community identity was necessary for these projects to start and become successful.

Given the importance of community identity and cohesion, it is unsurprising that our data show that most community energy groups are situated in remote rural areas of Scotland (Harnmeijer, 2012). Indeed, remote rural places are often good locations for community energy projects – they often have (for example) wind resource, space, and the need and desire for self-sufficiency, as well as increased local dependence due to remoteness from the centre. They also, critically, often have a greater sense of a collective community identity because of a shared history and culture[5], which pre-exists the project but which can be very helpful to draw upon.

Moreover, van Veelen's (2013) data demonstrate that if this community identity is *shared* by the wider community, the project is more likely to be successful. Where the project was deemed not to represent the wider community, to exclude some members, or there was disagreement over how the income generated would be used to benefit the community, there was very often less support for the project. In fact, she found that a proposed energy project could exacerbate any existing tensions within a community. Therefore, a shared community identity is often a key pre-requisite and can be a powerful motivator for

[5] Van der Horst 2008; more generally see Walker *et al* 2010

starting a project, and further social capital can be generated during the project; but relying on notions of a shared community identity can sometimes alienate those who do not feel part of it.

e) Longevity of community group: We found that the length of time a group had existed was likely to be a factor in project success. The majority (59%) of non-operational projects were run by organisations that had been active in the community for less than eight years. In contrast, 71% of operational project groups have been active in the community for over eight years, and 40% since before 2000. This suggests that a group with a longer history of working within the community may have a greater chance of success when leading a community energy project.

For example, the comparatively high success rate of Highlands and Islands projects may in part be due to the long established presence of particular community development organisations (including development trusts and community land companies). In remote rural communities, particularly the islands, there is a long history of service provision, which is dependent upon local co-operation and collaborative working (Creamer, 2013). This history of bottom-up service provision has arguably helped to establish a foundation of local resources, as well as an appreciation of the benefits that community-led projects can provide locally. This may subsequently make it easier to engender support for community energy projects in these locations. For communities where there has historically been greater dependence on top-down service provision, there may be a lower level of confidence in bottom-up approaches.

f) Sharing of experience: Our data demonstrate the benefits of groups working together and learning from each other. That learning can be practical (such as the sharing of technical skills) but can also serve a broader purpose of building enthusiasm and confidence from seeing projects working at the wide range of potential benefits for communities. For instance, one island group was initially reluctant to get engaged in a wind turbine project but became enthusiastic about doing so after visiting the successful community wind farm on the Isle of Eigg. This knowledge exchange has been facilitated by organisations such as Community Energy Scotland.

As well as sharing success stories, our data also uncovered the usefulness of learning about failure. The need for a balanced set of lessons is summed up well in the quote on the right by a community group member involved in a variety of energy initiatives.

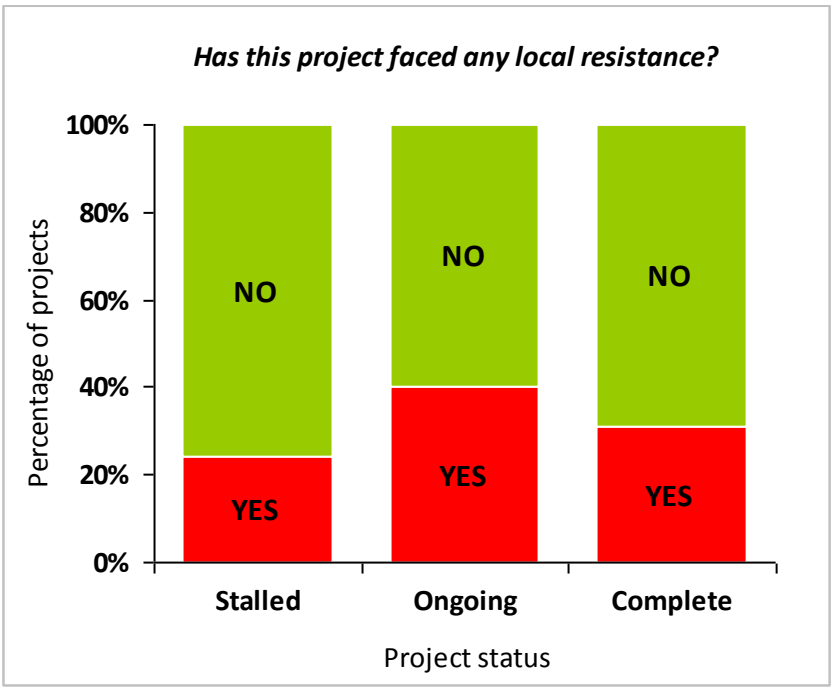
Our data suggest the need for, and value of, policy learning between groups; and we suggest that groups with less of their own capacity may be more likely to be looking for help.

> ***'Stories of moments of failure were not disempowering. Rather they are informative. It's disempowering when [cases] do not show the pitfalls. When only successful end product is shown it can be unrealistic for that community contemplating community projects. If all the rough edges have been polished groups don't realise the real struggle of getting that energy project complete'***
>
> ***(Community energy project member, 2011)***

g) Local opposition: Our data show that all projects received relatively high levels of support locally: for all projects at all stages of development, we found that only 35% of groups had (self reported) any local community resistance (a much lower figure than can often be expected from privately owned projects[6]). Critically, our data (below) show *less* opposition to projects which subsequently stalled than for those which are ongoing and operating, suggesting that local opposition was not the key reason for success or

[6] Haggett, 2010: Bell et al, 2005

failure. Community identity can be helpful in defusing opposition to renewable energy initiatives, especially wind farms, where there is a higher degree of public participation and local control as well as the benefits delivered to a community (see quote below)[7].



'The whole argument about wind farms - it's basically an argument about power. For instance I would be totally against a wind farm if it was the Duke of Buccleuch making billions of pounds, but if it's my local community getting resourced then that's a different matter'

(Community activist, May 2011)

Figure 6: Percentage of groups that have faced any local community resistance by project status. The graph shows projects which have been completed, those which have been abandoned, and those which are ongoing, i.e. still in some stage of development and are not yet completed. Source: Scene Connect, 2012.

It is worth noting that different members of a community might oppose a project, especially in rural communities. The interests of long-term residents keen to ensure the sustainability of their community are sometimes viewed as contrary to the priorities of 'outsiders' (or pejoratively, 'incomers'). These are often people who have settled in the area or purchased holiday homes because of its scenic beauty and tranquillity and, consequently, tend to be particularly sensitive to new developments, especially wind turbines (Landscape Design Associates, 2000). Rather than a clear-cut division between 'insiders' and 'outsiders', what emerged in van Veelen's (2013) research was a difference in priorities, which sometimes overlapped with the incomers/locals division, and sometimes did not. Overall however, local resistance is not a key factor in project failure or success.

h) Finance and resources: Our data show that pre-planning costs (for non-capital items) for onshore wind are on average 70% higher for communities as a proportion of total project costs, than for a commercial wind developer (Harnmeijer, 2012). All investment at this stage is entirely at risk; in other words, if planning permission is denied, then all money invested will be lost, because almost all pre-planning purchases are of uninsured, non-refundable legal, environmental and technical services. By engaging in multiple projects simultaneously, commercial developers are often in a position to diversify these risks and uncertainties; something that community-led projects generally are not able to do.

[7] Rogers et al., 2008; Walker and Devine-Wright, 2008; Warren and McFadyen, 2010

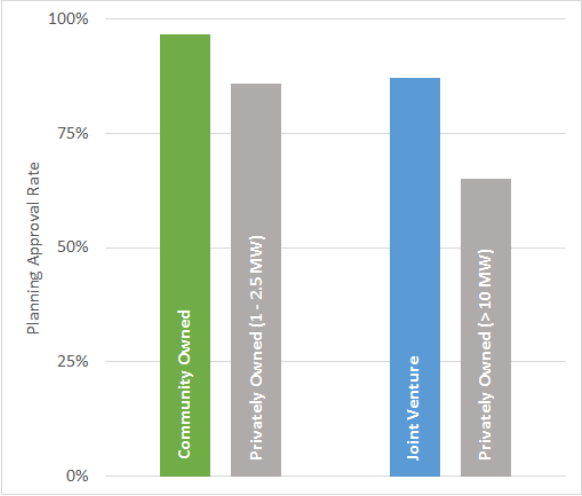
Groups face other resource issues too. They have no ability to barter prices down through promise of future work, as unlike commercial projects, most community projects are 'one-offs'. There are also examples of community groups spending on inappropriate consultancy work, or receiving bad advice from consultants. Indeed, it may be difficult for community groups to distinguish between private sector consultancy services, and to be able to identify what constitutes a reasonable or good deal.

Stage 3: Planning

We have so far covered a wide range of factors which influence the success of a project. The flowchart on p4 shows that 83% of projects (229 projects) have got to the pre-planning stage or beyond. Of these 229 projects, 24% are in the pre-planning process, 10% are awaiting a planning decision or are currently in appeal, 2% have stalled at the planning stage, and 64% have progressed successfully through planning.

Pre-planning delays: There are four key reasons why projects are delayed at the pre-planning stage. Firstly, the majority are in negotiations over leasing or buying land. Although CARES does make available pre-planning low interest loans (for example for Environmental Impact Assessments), the second most common delay is for financial reasons - either finance has fallen through or the group is awaiting decisions from funders. Thirdly, some groups are still in the process of collecting weather data for their planning application. Finally, a few groups have decided to try to secure grid connection before submitting a planning application and are awaiting this decision. In addition, all of these processes may take longer for community energy projects because, unlike private projects, they are likely to be run by part-time volunteers, not full time, paid staff.

Planning success: If they can get to the planning stage, community energy projects are very likely indeed to achieve planning permission: 97% of projects were successful at this stage. The adjacent graph shows that community energy projects are more likely to get planning permission than privately owned projects (only three-quarters of which were successful by comparison). A joint-venture project, which may be privately run but with only a very small buy-in from a community (Callaghan, et al., 2011) seems to increase the chances of getting planning approval[8].



Not only are community projects more likely to be granted planning approval, they also experience quicker planning turnover periods than privately-owned projects. This is true even when comparing community projects with private projects of the same installed

Figure 7: Planning Approval Rate for renewable energy projects in Scotland, controlled for capacity. Source: SCENE Connect, 2013; DECC, 2013.

[8] The data in Figure 7 were calculated using the 20 joint venture projects identified in the DECC database - 17 of 20 have been approved, for an average approval rate of 85.0 +/- 8.1% standard error. The value and standard error for the equivalent-capacity private projects is 65.3 +/- 2.5%, so by that measure the project approval rates are significantly different.

capacity. Wholly-owned community projects take an average of eight months through planning, two months less than private projects of equivalent capacity, while community joint ventures take over three months less than private projects of equivalent capacity (Scene 2013 data; DECC 2013).

We suggest three factors may be influential in securing this higher planning approval rate for community energy projects. Firstly, projects face less opposition from the community (and beyond) than commercial projects. Secondly, the localised benefits for communities may be influential in councils' decision making. Thirdly, it is important to note the role of and differences between different councils. The role that community support plays in swaying planning permission is important, but also highly variable. We consider this in more detail below.

Local Council Support and Knowledge

Our data show a considerable variation in planning approval rates for community energy projects between different councils (see Figure 8). We consider the reasons for this below.

Dundee City (3)	100%	Highland (121)	83%	Fife (28)	64%
Edinburgh City (1)	100%	Scottish Government (S36) (80)	83%	Scottish Borders (32)	63%
Glasgow City (6)	100%	South Lanarkshire (31)	81%	Stirling (16)	56%
Loch Lomond/Trossachs (5)	100%	Moray (20)	80%	Aberdeen City (2)	50%
Shetland Islands (6)	100%	West Lothian (5)	80%	Angus (24)	50%
West Dunbartonshire (3)	100%	Scotland (845)	75%	Clackmannanshire (2)	50%
North Lanarkshire (27)	93%	Midlothian (12)	75%	East Dunbartonshire (2)	50%
Western Isles (13)	92%	Dumfries & Galloway (43)	74%	Falkirk (5)	40%
East Lothian District (12)	92%	Argyll & Bute (43)	70%	Inverclyde (3)	33%
Orkney Islands (36)	89%	Perth and Kinross (69)	68%	South Ayrshire (3)	33%
East Renfrewshire (8)	88%	Aberdeenshire (153)	67%		
North Ayrshire (19)	84%	East Ayrshire (12)	67%		

Figure 8: Scottish local council planning approval rates for community energy projects, figures in brackets are the actual number of applications that a council received. Source: Scene Connect, 2013; DECC, 2013.

The first point of note is that the councils which received the fewest applications (five or less) tended to be at either the top or bottom of the table in terms of approval rate. Having very few applications means a lack of experience (from a lack of opportunity) in dealing with them. This suggests that sharing knowledge and expertise between more and less experienced councils would be beneficial. We consider below the more substantive issues in terms of council support and expertise, which takes into account those councils which received higher numbers of applications.

Knowledge and support: Our first key substantive finding in relation to these data is the significant role that local councils play in facilitating or frustrating community energy action. There is a striking relationship between community groups' opinion of their local authority and project outcome; successful projects were five times more likely to report that their council was supportive, and three times more likely to report that the council was knowledgeable, than unsuccessful projects. Indeed, 74% of successful projects reported a supportive *and* knowledgeable council. Cross-correlation of the results also reveals that if a council was

reported to be knowledgeable, it was twice as likely to be supportive. Council knowledge and support are closely linked, and are important for project success.

Formal support: Secondly, we analysed the differing types of support that councils give. A council can be supportive of a community energy project formally, through policy and process; and informally through contacts, links and shared agendas. In terms of the former, we find a striking lack of distinction between councils. Very few councils have any specific community renewables guidelines; and those that do exist are largely restricted to community benefit schemes. Councils that do have specific guidance on benefit arrangements are Argyll and Bute Council; Dumfries and Galloway Council; The Highland Council; Orkney Islands Council; The Western Isles Council, and Scottish Borders Council (for more detail, see Appendix 1). It is notable that among these councils there is a significant proportion of Scotland's community energy generation: over half of all projects can be found in the Argyll and Bute, Highland, Orkney, Stirling and Western Isles regions, and together these are 80% of Scotland's total community energy capacity (24.4 MW). Furthermore, all of the councils with specific policy were amongst those with the largest numbers of applications, and also had high planning approval rates for community energy projects (see Figure 8), which does suggest a correlation between these formal policies, support for community projects, numbers of applications, and a high approval rate. We suggest that having a formal policy (and that the greater knowledge, experience and support for community energy which is likely to have inspired its development and completion) is therefore helpful for getting energy projects installed, and that there is the potential for other councils to learn from this.

However, other councils, also with high (and higher) approval rates, and with greater numbers of applications, do not have any specific policy or support in place. For example, the highest number of applications was received Aberdeenshire Council, with 153, and Perth and Kinross with 69. Both councils approved over two-thirds of these applications, and we could find no specific community energy policy for either of them. Similarly North Lanarkshire Council had an approval rate of 93% without any specific policy in place. We therefore suggest that the variation between councils may in part be a product of formal policy, but that it is perhaps not the whole story.

Informal support: In addition to formal policy, councils can also provide support more informally. For example, having individual contacts within the council was a key reason for the success – and failure – of some projects. In most instances, the factors most important in shaping relations were: a) whether the local council shared the priorities of the group; and b) personal links between energy group members and council members. In virtually all cases studied these links were crucial in lubricating relationships on a range of issues associated with planning permission.

Some community energy groups 'found the Council really supportive, especially on certain projects...We've got individual contacts and that helps open doors'
(Member of a successful project, July 2011).

But other community groups were confronted with less supportive councils. Several complained of bureaucracy slowing their initiatives, in this case the installation of solar panels: 'The Council has created real barriers and layers of bureaucracy… Their power to delay is enormous. They'll just wear you down'
(Transition town board member, June 2011).

In summary, our data show that community projects are more likely to receive approval, and more quickly, than privately-owned projects. Therefore, while planning was often reported by our respondents as

expensive, risky, complex, slow, and lacking in transparency and consistency (and our data pointing to the role of informal support confirm this) our data do not support the hypothesis that communities are at a direct disadvantage relative to commercial developers, in terms of the planning system in Scotland.

Stage 4: Operation

Fewer than half of the projects in our sample made it to operation. Only 1% stalled at this stage, although a further 6% were in final negotiations for construction and operation, leaving 44% as installed. Whilst construction periods for community projects are shorter than privately owned projects of the same capacity (nine months shorter for wholly owned community projects and 17 months shorter for joint ventures), community projects encounter a number of significant issues which affect their likelihood of reaching operation. These are related to: finance; business models; grid access; and land ownership.

a) Finance: The major issue facing community projects in the post-planning phase is acquiring debt-finance. The perceived risks of a community energy project (including uncertainty around support mechanisms, problems accessing the grid, and pre-and post-consent delays) add to the general challenge of securing investment, already difficult in the present economic climate.

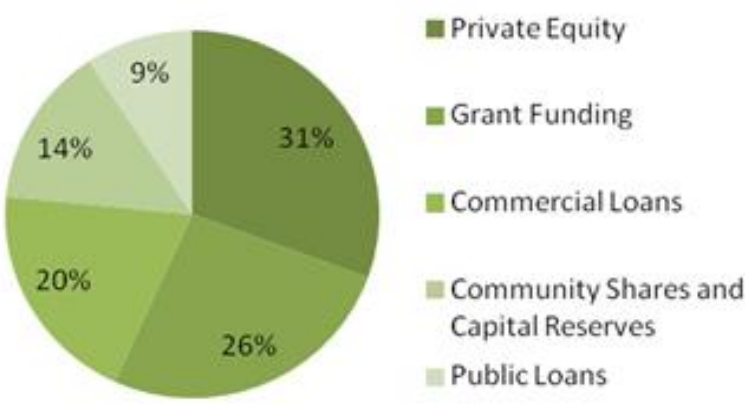


Figure 9: Community energy project funding sources, adapted from Scene (2012), 'A Report on Community Energy in Scotland'.

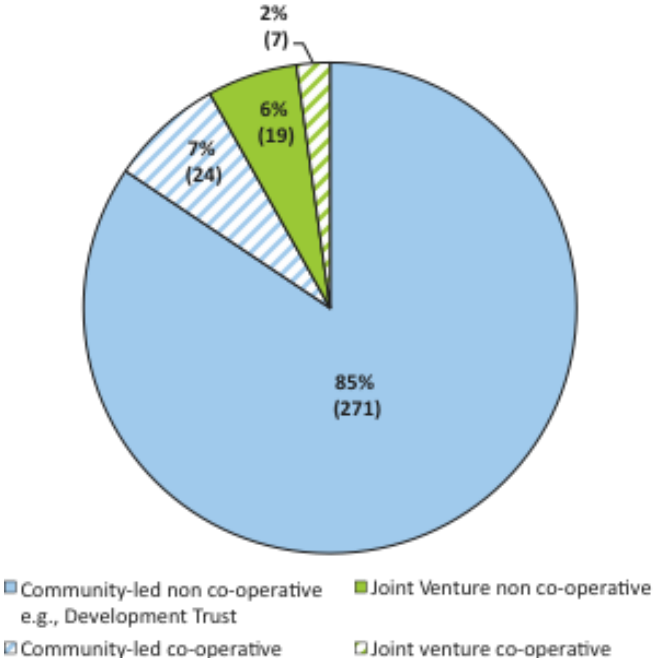
Bank debt is a problem for many communities, because of a lack of cashflow based investment packages, and/or a lack of collateral against which to secure a loan. While commercial developers can make up a large portion of the remainder of a project cost through capital reserves and equity, communities have traditionally supplemented debt finance with grant funding. For the groups that we studied, this source had previously provided a significant proportion of funding (26%; see Figure 9). However, in 2010, EU state-aid regulations were introduced that severely constrain the use of grant funding for community renewables projects (Department for Business, Innovation and Skills, 2012).

The upshot of EU state-aid regulations is that developments that rely on subsidies such as Feed-in Tariffs as part of their revenue flow also cannot benefit from most grant funding. The recent >£100m REIF fund, administered through the Scottish Investment Bank and delivered on behalf of the Scottish Government, is likely to improve this situation by providing communities access to flexible post-planning loans.

b) Business and ownership models: The typology of Scottish community renewable projects is complex, and there are many different ways to classify them. We consider projects along two cross-cutting dimensions (Figure 10): ownership, and business model. In terms of ownership, projects can be stand-alone community-led projects, or may alternatively be owned and/or developed in partnership with other

parties. We refer to this latter mode of ownership simply as 'joint venture', where we are use the term to designate a large variety of partnership arrangements, some of which may involve contractual rather than equity-based (*sensu stricto*) rights to a renewable project's profit.

The business model used, on the other hand, refers specifically to the legal entity used by the community group, whether in a stand-alone community-led project, or within a partnership arrangement with additional stakeholder entities. The business model typically places constraints on how communities can and do raise finance for their community project(s). In particular, we draw an important distinction between purely local development organisations such development trusts on the one hand, and co-operatives ('Industrial and Provident Societies' – 'IPSs') on the other. There are various sub-types of each, which we do not consider here. Both local development organisations and co-operatives can and are used as project vehicles for both stand-alone community-led projects, as well as for the community component in joint-venture projects:



The majority of Scottish community energy projects are wholly-owned by community development organisations (85%), with only 7% of projects wholly-owned by co-operatives. Together, these community-led projects account for about 60% of current Scottish community renewables capacity.

Figure 10: Overview of ownership- and business models used in the Scottish community renewables sector, with numbers of projects in brackets. Source: Scene Connect, 2012.

Community energy projects in the form of local development organisations are usually motivated principally by a desire to pursue community-led economic, social and environmental regeneration of their communities, with community empowerment, self-government and self-sufficiency being key objectives. Their predominance stands in stark contrast to England, where 92% of aggregate community energy capacity exists through community co-operatives (compared to 12% of capacity in Scotland; and less than 10% of projects; Harnmeijer et al., 2013). Energy co-operatives have proved the single-most popular way to structure and fund community energy organisation and projects outside Scotland – this is the case in Belgium, Canada, Denmark, Germany, and the Netherlands, as well as England (Co-operatives UK, 2012; Scene Connect, 2013).

The underlying reason for this is unclear, and there are pros and cons to using different models. The co-operative model enables 'communities of interest' that potentially widen the geographic range for share issues beyond that of purely local organisations, and we have discussed above the difficulties for projects

of obtaining finance. The recent success of the Harlaw Hydro Ltd. scheme, being developed by the Balerno Village Trust, is one valuable example of the way in which a community co-operative funding model could work in Scotland: in less than 3 months, £313,000 worth of shares were raised from the community[9].

However, share issues may threaten the 'local nature' of community projects, and have the potential to lead to local opposition to projects which may be regarded as benefitting distant investors. Moreover, the co-operative model may lead to perceptions of discrimination if the minimum buy-in cost is high. Whilst the co-operative model has proved very successful elsewhere, as detailed above, we have focused in this report on the importance of community and identity, and the implications of a model that might ignore or undermine this community cohesion and identity need to be taken into account. Of course, as we have noted, energy projects take place in a diverse range of communities, and different models are more or less appropriate depending on circumstance. For example, a co-operative model might not work well in a community with a strong history of community action; but it could be useful to extend the reach of an energy project in an area which does not have an existing group or such close ties, such as is the case for some urban communities. At present, there is too little data for us to be able to draw more definitive conclusions, and this is a topic that warrants further research.

An alternative ownership model which is currently not widely used in Scotland is that of the joint-venture scheme; presently only accounting for 8% of projects by number. Almost three-quarters of Scottish energy co-operative capacity (3.0 MW of 4.2 MW) sits within just three joint ventures with a single commercial wind developer, Falck Renewables, in an arrangement facilitated by Energy4All.

Given the considerable cost, risks and expertise that the development process entails, partnership arrangements with willing commercial developers offer possible ways to ease the development burden on communities. The advantages of partnership arrangements include access for communities to investment opportunities in larger projects, as well as to developer expertise; this is particularly valuable for risky planning submission, but also for post-planning finance planning which is much more complicated for larger (> 5 MW projects). Partnership arrangements can also improve planning prospects for commercial developer partners, and promote genuine engagement between communities and the private sector, potentially improving general perceptions of renewable energy development. Examples include the Fintry Development Trust, Falck Renewables' arrangement at the Earlsburn Windfarm, and the recent deal between Carbon Free Development and the Neilston Development Trust. The wide diversity of partnership arrangements suggests that ample room remains for innovation.

However, joint ventures require trust between the community group and commercial developer, and require communities to have the requisite negotiation abilities and knowledge to work with the developer partner. Furthermore, there are also no formal incentives for developers to engage in partnership negotiations in most council areas.

While our research shows that the majority of community energy projects in Scotland are led through community-owned local development organisations 'in isolation', and the number of joint-ventures and co-operatives is small in comparison, we explored the extent to which the different business- and ownership models seemed to influence success:

9 http://www.balernovt.org.uk/harlaw-hydro/

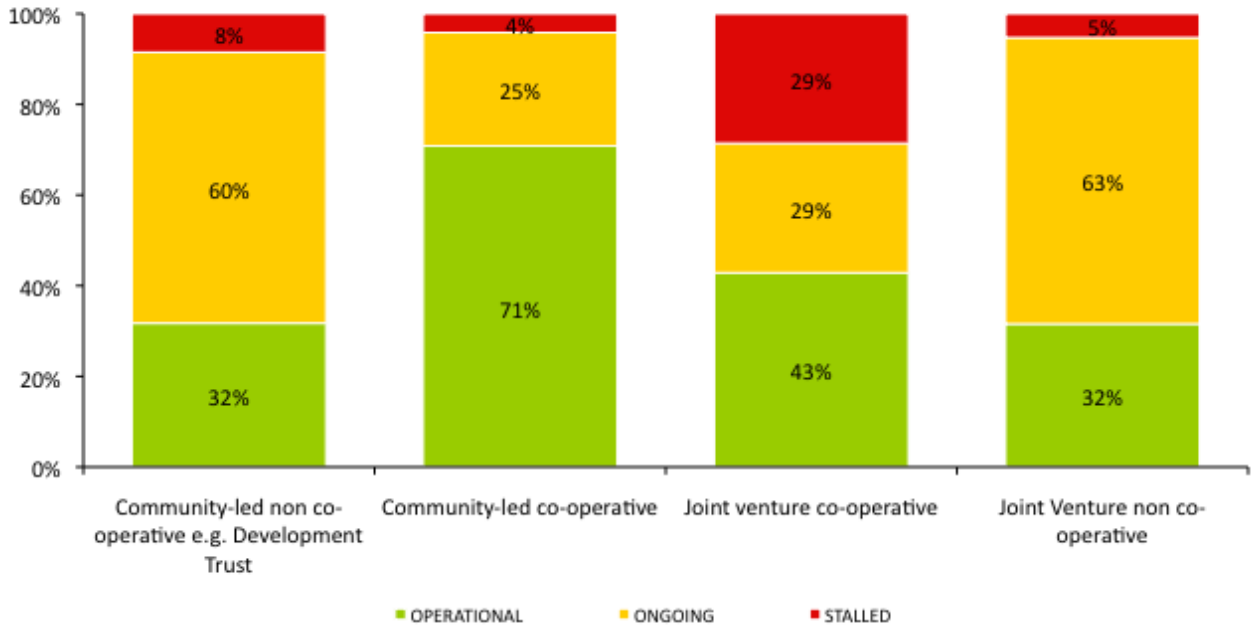


Figure 11: Comparison of the percentage of projects at each development stage by ownership and business model. Numbers of projects in brackets. Source: Scene Connect, 2012.

The data illustrate that for community-led projects, failure rates of different business models (8% for local development organisations vs. 4% for co-operatives) are comparable. Indeed, the slightly lower failure rate for stand-alone co-operatives is likely to be due to the fact that associated projects have low average generating capacities.

At 28%, joint ventures with community co-operatives appear to have a relatively high failure rate (compare with only 5% for joint ventures with non co-operative community bodies), but the very small numbers of Scottish projects falling into this category does not allow robust conclusions to be drawn from this. In short, there is no clear evidence for any particular ownership- or business model being more successful than any other. This should not surprise us, as these different models (community-led vs. joint ventures, and non co-operative vs. co-operative) suit very different situations.

c) Access to the grid: Although not the primary remit of this report, two other issues became apparent during our analysis, and we discuss them briefly here. The first is access to the grid for community energy projects. Securing this access takes longer for community energy projects due to the challenges of both grid availability and connection. It is costly and complex for community groups to find out whether grid capacity exists, and in some places the grid is already at capacity. Community groups do not have the power of large scale energy generators to be able to strike deals and gain increased leverage, as their projects are too small.

d) Access to land: The second issue which we wish to acknowledge in brief here is access to land. Across many parts of Scotland, some community energy projects have been closely associated with land reform and community land ownership. Some of the pioneers in renewable electricity generation, such as the Isle of Eigg Heritage Trust, the Knoydart Foundation and the Isle of Gigha Heritage Trust, were created as part of community land buy-outs in recent years. Some (e.g. North Harris Trust; Bute Community Land

Company) utilised the 'pre-emptive' right afforded by the 2003 Land Reform Act for communities to buy local land when it is marketed for sale. While many of these are located in the north and west Highlands, some have emerged in central Scotland (e.g. in Neilston, a small town near Glasgow). The primary advantage they have is their ownership of the land. Although permission from the planning authority remains a necessity, community land companies have the advantage of not needing to negotiate a leasing arrangement from local landowners to pursue energy installation developments, and can benefit themselves from the profit these may generate. Where communities do not own land, expensive and complex lease and option agreements are required, increasing project cost and risk. Community energy projects are unlikely to negotiate affordable lease rates with landowners, if they are able to negotiate a deal at all.

Case study: Cove Community Wind farm

Planning permission for an ambitious ±11 MW wind farm near Rosneath in Argyll & Bute, for what would have been the single-largest UK community renewables project, was recently withdrawn. The community body was well-organised, highly skilled and had managed to get access to requisite grant funding through the Big Lottery Fund, the Climate Challenge Fund and CARES. However, they did not own the land they proposed to develop, and informal arrangements with the two landowning farmers were not settled in the form of lease and option agreements in time for the planning hearing.

Conclusions

Our analysis has shown that a wide range of issues and factors affect the likelihood of success for community energy projects at all stages, from conception to operation. In this report, we focused on social factors, and found that the following are most likely to lead to a successful outcome:

- Including carbon saving and environmental motivations when starting the project
- Being in a community with a shared identity and positive pre-existing social capital
- Having a local champion to take the project forward; and paid staff (or very dedicated volunteers)
- Working with or being part of an existing community group
- Having project members with a range of technical, financial and project management experience necessary to build confidence and get the project started
- Learning from other community energy projects
- Being able to raise pre-and post-planning finance
- Having a knowledgeable and supportive local council, and contacts within it, and formal policy that is supportive of community energy projects

We do not suggest that all of these factors must be present (and certainly projects are successful without some of these factors), but that each of them makes a project more likely to become operational.

Recommendations

Based on our analysis we make the following recommendations for each stage of development:

i) Conception

- Our analysis suggests that projects are more likely to start and to be successful in places with strong social capital, a history of community-based action, and a long standing community group. This suggests that there may be many more *potential* community energy groups: communities which have all the former assets, but have just not yet turned to an energy project. We consider that there may therefore be value in reaching out and informing, encouraging and advising such groups about developing an energy project. More specifically we would recommend more targeted, pro-active support for mobilising community energy projects, and an organisation tasked with active identification of, and support for, communities ripe for such projects.

ii) Feasibility

- Project membership is a key issue for community energy groups. Our analysis found that some of the most active community energy groups tended to have dedicated, paid, project officers with the time and expertise to navigate communities through the funding, planning and political obstacles. This vital resource may be time-limited though, and dependent on fixed-term appointments associated with grant awards. We therefore suggest that significantly more long-term (i.e more than a year), flexible, and non-capital funding is made available to communities to pay someone to undertake this work, and/or provide access to external 'consultants' (free of charge) who could help guide communities through the process. Whilst CARES does provide such support, we suggest that its critical role and value means that more support of this kind would be beneficial. We also suggest that local authorities play a role in coordinating and encouraging willing volunteers where key skills are absent or having full time paid staff is not an option.

- Our analysis suggests that the role of the Government should not be limited to distributing material or financial resources, as it shows the benefits of groups working together and learning from each other. Knowledge exchange is supported by Community Energy Scotland, and mechanisms for policy learning could be expanded, prioritised, and made more systematic.

- Support could include stakeholder events, a 'clearing house' of good practice as well as lessons from projects that failed and why; and a register of advisory and consultancy organisations which specialise exclusively in working with communities to help them identify, structure and manage energy projects (and could include CES, Local Energy Scotland, Energy4All, Changeworks, Scene, and others). This would be particularly valuable for groups in the early stages of development. Further measures could include mechanisms to facilitate lesson learning across groups; a peer-to-peer mentoring network; support for building of such learning networks; and mediation services where needed (e.g. when tension arises between community groups and the council or landowner).

- We suggest that there may be potential for existing networks to be expanded to take on some of these roles. For example, there may be potential for doing more to share knowledge and best practice for running a community-led project across the various Scottish Government community initiatives on different themes, including the Climate Challenge Fund (CCF), People and Communities Fund (PCF), and Community Food & Health Scotland (CFHS). Indeed, as part of the administration of the CCF, Keep Scotland Beautiful now runs the 'Community Action Support

Programme', an extensive programme of free workshops for community groups (not just CCF) to learn and share key skills and knowledge[10]. The programme of events is diverse, and information about them could perhaps be more widely disseminated, and include more workshops specifically tailored to community energy projects for example.

iii) Planning

- Our analysis has shown that having a knowledgeable and supportive local council is correlated with project success. But some councils have dealt with very few applications so far, and most others have yet to develop a specific community energy policy or programme. This situation suggests the need to ensure that all councils are familiar with and understand the particular challenges community energy projects face, especially surrounding issues of contract and land leases.
- As part of the above, the role of the Government could be to facilitate learning across councils, drawing on those with the high success rates, and the specific policies, and sharing this knowledge, experience and expertise.
- Our analysis has shown that the planning success rates for joint venture schemes are higher than for commercial projects to date. There may therefore be a benefit for developers to consider offering a community buy-in option; which is more likely to lead to a successful project, and greater benefits for the local host community. We suggest that local authorities could play an active role in identifying and encouraging potential community projects and facilitating partnerships with commercial developers.

iv) Operation

- Our research finds that community owned development trusts dominate; and that there are advantages and disadvantages to this and other models, which may be more or less suitable in different circumstances. Whilst the Community Energy Toolkit provides some information on alternate models, we recommend that community groups in the early stages of project development are provided with information on, and access to, a choice of support services and information about the diverse business models and ownership structures that they might be able to use. For example, there are community energy service-providers with expertise in enabling different ownership- and business models such as Energy4All, Development Trust Association Scotland, Scene Consulting, Community Energy Scotland, and Frost-free. Most or all of these organisations have websites with information on different opportunities for community engagement with renewables. We recommend that a list of these organisations with basic information be provided as a 'menu' of options to prospective community energy groups looking to access CARES finance.
- Our data show that the co-operative model is under-used in Scotland compared to England, Wales, and other countries in Europe. The issue is beyond the scope of this report, but it would be useful to explore the possibilities of this model without losing sight of the value of community identity and cohesion that appears so important to community energy success.

[10] http://www.keepscotlandbeautiful.org/sustainability-climate-change/climate-challenge-fund/events/

- Our analysis shows the difficulty for community groups of raising private finance, but that community energy projects are much lower risk in terms of planning than their commercial counterparts, suggesting a basis upon to encourage banks to lend to community groups.
- Our data have drawn attention to the issue of access to land. We suggest therefore that consideration be given to the identification and advertisement of potential community energy sites by local authorities. Support for the development of community renewables on publicly owned land, e.g., wind and hydro schemes on Forestry Commission land, or a voluntary register of land-owners who are willing to lease their land to community renewables developments, would also serve to address this problem.

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Appendix 1: Local councils with specific community renewable energy project policy:

- The Argyll and Bute Council' have a 'Renewable Energy Action Plan', which explicitly "support[s] locally owned community based renewable projects" (ARGYLL AND BUTE COUNCIL, 2010).
- Dumfries and Galloway Council carried out a wind farm benefit review in July 2011, and published two separate outputs, one for communities and the other for developers (DUMFRIES AND GALLOWAY COUNCIL, 2011a; DUMFRIES AND GALLOWAY COUNCIL, 2011b). The guidelines explicitly encourage equity share arrangements between communities and developers, with the council supporting negotiations with the developer.
- The Highland Council has detailed policies on community benefit (HIGHLAND COUNCIL, 2012), although it is noteworthy that these do not include provision for community ownership through community-led or joint ownership projects.
- Orkney Islands Council has long promoted community ownership of renewable energy (ORKNEY ISLANDS COUNCIL, 2009), and has adopted a flexible approach to developing renewable energy at large, for instance, through a council equity participation scheme.
- The Western Isles Council has a specific 'Developing Alternative and Renewable Energy (DARE)' £10 - £50k Fund for community groups. A recently published report, commissioned by DECC and the Scottish Government, makes much of the potential for community (co-)owned renewables in the Western Isles (BARINGA PARTNERS, 2013).
- Scottish Borders Council published a detailed toolkit for communities and wind farm developers in 2007 (SCOTTISH BORDERS COUNCIL, 2007). This toolkit included guidance on negotiations with developers and co-ownership, forms of business models, and case studies of community ownership. In 2012, plans were announced to launch an independent charity ('the Borders Energy Agency'), which was to broker agreements between communities and developers. To the best of our knowledge, the proposed organization has yet to materialise.