

Promoting the renewable energy generation in rural areas – The role of the Rural Community Energy Fund

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ABSTRACT

The Rural Community Energy Fund (RCEF) is a £15 million programme, jointly funded by UK Defra and BEIS. The fund aims to promote the adoption of community-owned renewable schemes to help make progress against the Government's renewable energy targets, while promoting rural growth and job creation.

A study launched in May 2013 and led by Ricardo Energy & Environment aimed to monitor and evaluate the process and impacts of the RCEF. This study ran in parallel to the launch and delivery of the Fund which allowed for the development of a monitoring and evaluation framework, which in turn provided the outputs necessary to evaluate the impact of the RCEF after 3 years. In the first phase we defined relevant performance indicators and refined the techniques to assess economic, social and community benefits. In the second phase we quantified the programme's impacts, costs and benefits and their additionality. Job and GVA impacts of the scheme were also appraised, in addition to a Social Return of Investment analysis which focused on the value-for-money of funding from the community perspective.

The evaluation concluded that the Fund had been successful in achieving its aims, and that previously unrecognised demand for renewable energy investment had been unlocked. However it also concluded that financial and knowledge barriers to community investment remained. The study also made recommendations for future support of community renewable energy, including expanding the scope to other energy related measures, to reconsider the use of loans and funding for additional initial capacity building.

Introduction

UK renewables ambition and the Rural Community Energy Fund (RCEF)

The UK's 2009 Renewable Energy Strategy gave ambitious targets of over 30% of electricity, 12% of heat and 10% of energy used in transport should come from renewable energy sources. Policy mechanisms have been introduced by the UK Government since 2009 to encourage an increase in investment in renewable technologies.

The feed-in tariff (FIT) scheme was designed to support investment in small-scale renewable and low carbon electricity generation projects up to 5MW capacity. It provides tariffs based on the costs of generation for each technology. The scheme initially received an unexpectedly large early uptake as solar investors saw an opportunity to take advantage of attractive returns following faster cost reductions than originally anticipated. The Department of Energy and Climate Change (DECC, now the Department for Business, Energy & Industrial Strategy (BEIS)) introduced a degression mechanism whereby generation tariffs would be lowered to reflect cost reductions and technological improvements. In early 2016, DECC introduced further measures, including deployment caps to ensure the scheme's cost are tightly controlled and revised tariffs to reflect technology cost

reductions. The Renewable Heat Incentive (RHI) is a payment system to incentivise the generation of heat from renewable energy sources. It operates in a similar manner to the FIT and was introduced through the same legislation – the Energy Act of 2008. The RHI tariffs are determined by BEIS.

In November 2011 the UK Government announced as part of the Rural Economy Growth Review that it would promote the development of community-scale renewable energy projects in England through the establishment of a £15m Rural Community Renewable Energy Fund (RCEF). The programme was jointly funded by the Department for Environment, Food and Rural Affairs (Defra) and BEIS. The fund's aims were to:

- Support rural communities – by helping them to maximise the income generating potential of renewable energy and put this to work locally;
- Make progress against the Government's target to increase renewable energy generation, and promote community-owned renewable schemes; and
- Promote rural growth and job creation – to enable communities to access the economic benefits associated with renewable energy schemes.

Rural communities face higher barriers and risks when developing renewable energy projects. The fund assisted them by providing funding to community organisations. It helped with up-front costs, such as those associated with gaining planning permission, designing a scheme and providing evidence of technical feasibility. The Fund was managed by Waste and Resources Action Programme (WRAP) and split into two support 'stages':

- RCEF Stage 1: For communities in early stages of exploring a renewable energy project, the RCEF offered a grant of up to £20,000 to cover consultancy costs for the development of a feasibility report.
- RCEF Stage 2: For projects that were found to be feasible under Stage 1, with a good chance of securing planning permission and being implemented, they were considered further for unsecured loans of up to £130,000 to cover further investigation (e.g. complete environmental impact assessments, permitting applications, planning applications and development of a business plan).

Community groups were eligible to receive support to consider the feasibility of a defined set of renewable technologies, covering both electricity and heat generation. RCEF opened to applications from rural communities in June 2013.

Other locally focused energy initiatives

Similar initiatives to the RCEF have been run in the past focusing on local energy projects, notably the low carbon communities challenge (LCCC) and the local energy assessment fund (LEAF). The experience of these initiatives has been summed up in a series of evaluation reports.

The LCCC evaluation report (DECC, 2012) and a study by Gupta et al (2015) both assessed the experience of the LCCC initiative, which provided £10 million to 22 communities for the implementation of a range of low carbon measures. The LCCC evaluations found the scheme was designed to run as a catalyst fund rather than a start-up¹, and that the communities needed to have the expertise and ideas in order to apply for the grants. As the projects were at a community level, they could be highly tailored to the communities' needs. A green ripple effect was observed and many projects and innovations grew from the initial LCCC funded project. Socioeconomic benefits were also observed such as decreased bills and better heated homes increasing communities' health.

The LCCC funding created a buzz for community led delivery which led to the LEAF scheme being established. In contrast to LCCC, the LEAF funding reached 236 communities with an average of £40,000 to each

¹ I.e. funding was allocated to communities who already knew about these types of grants and already had plans for environmental projects, rather than going to communities who at that point had no awareness or plans for projects

community (£9.2 million total) (DECC, 2014). The funding was intended to raise awareness in the communities, host public engagement projects and create demonstration models. The three main topics the communities focused on were: reducing energy use, increasing energy efficiency and integrating renewable energy generation. Most of these communities went on to obtain additional funding to build on the progress from the LEAF funding.

Both the LCCC and LEAF projects noted similar external barriers to engaging communities in local energy projects, in particular citing the uncertainty of the FITs income making financial planning difficult. The schemes also saw many positive outcomes in the local communities, such as higher levels of collaboration within communities and the creation of jobs in the community. The schemes have also helped to educate the local communities with members having a greater understanding of low carbon living.

Scope of the project

In May 2013, Defra commissioned a team led by Ricardo Energy & Environment to monitor and evaluate the process and impacts of the RCEF. This evaluation project was delivered in parallel to the launch and delivery of the Fund, providing useful feedback to the programme managers and Defra as the programme progressed. The four key evaluation objectives were:

1. To assess the end to end process by which eligible community organisations apply for RCEF funding;
2. To assess how RCEF is used to gain planning permission for developing new renewable energy plants.
3. To model the projected future aggregated costs and benefits of RCEF projects and;
4. Evaluate actual impacts, including; the economic, social and environmental costs/benefits to rural communities of implementing renewable energy projects.

Methodology

A staged approach to evaluation

The project was undertaken in 4 phases that took place over 3 years. **Phase 1** outlined a monitoring and evaluation framework for the project. This began with the development of the intervention logic and theory of change (see Figure A1 in the Annex) to identify causal relationships between different factors of the project that lead to both intended and unintended impacts. RCEF assumed that if support is provided to tackle the pre-development costs and support robust planning applications, latent demand for renewable energy investment could be unlocked. It aimed to address both the financial and knowledge barriers to communities investing in renewables, hence providing greater certainty to commercial lenders and improve the success rate of projects in securing a commercial loan to deliver the project. Having the funding supplied as a loan which needs to be repaid was expected to increase the level of commitment from applicants to take their projects forward to delivery. However, under strictly defined circumstances, the loan could be written off, removing one of the major barriers to development by offering protection against having to write-off funding for planning applications if a project fails to gain planning consent or meets another insurmountable obstacle.

The evaluation also defined a social theory of change (See Figure A2 in Annex) which specifically mapped social outcomes related to RCEF, and provides a framework for identifying attributable outcomes and the relationship between them. This framework was verified through the initial fieldwork, and through additional consultation with stakeholders close to the management and implementation of the Fund. Given that financial and knowledge barriers were the focus of the initial objectives of the scheme, it was considered important that these elements were also placed at the core of the Theory of Change tested in this evaluation.

DEFRA provided an ex-ante model for economic, social and community benefits. **Phase 2** focused on developing that model to best fit the RCEF programme. The model was updated on an on-going basis, with the

range of costs and benefits covered and assessment approach evolving throughout the project. The Phase 1 framework and Phase 2 model were reviewed by a panel of academics from academic institutions.

Phase 3 undertook monitoring and evaluation of RCEF's 'process' elements. Qualitative data was collected through telephone and face-to-face interviews from project, infrastructure and community stakeholders for the process evaluation (2 rounds of face-face interviews containing a mix of open, closed and scale questions covering a sample of 10 RCEF projects). Baseline data collected as part of Phase 1 set the context of the programme and allowed comparisons of actual against forecast outputs and outcomes. Furthermore, it identified the successful areas of the programme and looked at the actual versus expected spend. The outputs of these interviews were used to develop an initial set of outcomes which formed the basis for the Social Return on Investment analysis undertaken in Phase 4.

Phase 4 consisted of an ex-post evaluation of longer term impacts. This evaluation built on the previous stages of work plus additional data collection enabling the evaluators to determine the effectiveness of the programme and identify what worked well and what did not. The evaluators firstly analysed the monitoring and financial data collected and compared planned and achieved outputs and expenditure to highlight areas of under/over performance. The second task was to conduct a complete cost benefit analysis which was informed by review of feasibility studies submitted (50 studies) and stakeholder phone interviews with representatives for as many of those studies as possible (33 telephone interviews were completed following structured set of questions regarding the status of projects). The evaluators then conducted an additionality assessment to assess what social impacts have arisen as a result of the intervention. Lastly, having collected all the data and information required, the evaluators looked back at the previous 3 years to present their findings and assess the effectiveness of RCEF in meeting its objectives and targets.

Modelling costs and benefits

Cost-benefit Analysis (CBA) provides a framework to identify, assess and place a monetary value on all impacts associated with a policy. In doing so, impacts can be compared and combined to assess whether, in this case, the RCEF has delivered an overall (or net) benefit or cost to society as a whole or to the local rural communities installing renewable technologies. Environmental and economic impacts of projects completed and in development under the RCEF programme were quantified and monetised using a model initially developed by.

The CBA model provided by Defra was populated with data specific to the opportunities explored in the feasibility studies, including: capacity, output and cost of technologies, subsidy rates and energy prices. There were two key sources for this information: (a) the 50 feasibility studies completed by community groups using Stage 1 funding and (b) interviews with community group members undertaken in Phase 4. Where possible, real data was used but in a minority of cases, data from technical studies of micro-generation were used to fill any gaps. The model combined this project specific information to calculate a range of associated impacts, including income from renewable subsidies, energy bill savings and GHG emissions savings. In addition, the telephone interviews were also used to gather open and scaled responses on the extent to which the outcomes would have occurred anyway without RCEF funding (deadweight) and therefore the extent to which they can be attributed to RCEF and not to other programmes or activities (attribution) to test this counterfactual assumption.

A unique aspect of this evaluation was that it assessed and quantified social impacts and outcomes deploying a Social Return on Investment (SROI) model. Effectively a stakeholder driven CBA, SROI accounts for the broader concept of value and is designed to measure change in ways that are relevant to the people, communities or organisations that experience or contribute to it. In SROI, monetary values are used to represent outcomes. The analytical framework estimates potential outcomes over different time frames and recognises how one outcome may lead to another in a chain of events.

Fieldwork in Phase 3 involving face-face interviews enabled an original set of hypothesized social outcomes to be identified, and used to design a more targeted set of questions to measure change in the social outcomes during Phase 4. The resulting set of 12 outcomes were translated into measurable impacts through a

process of applying appropriate indicators to measure change. Primary data to populate these indicators were gathered through questions in the Phase 4 telephone survey. Standard methods for collecting measurable data relating to outcomes such as well-being and skills improvement were used, including the use of Likert-type scales, in this case on a scale of 0-10 to allow straight forward transformation into proportions as required for the model. The indicators were grouped across four themes:

- Community engagement and knowledge sharing (e.g. increased working relationships and partnerships)
- Environmental awareness, sustainability and resource use (e.g. increased awareness of energy use)
- Confidence of individuals and community groups (e.g. Increased participation in community events)
- Cooperative working and social relationships (e.g. improved opportunities for the development of new or existing social enterprises).

Limitations in the methodology

At the time of the evaluation, the RCEF scheme was still live: the initial budget allocation for the Fund covered the period from 2014/15 to 2016/17 and RCEF continued to be open to applications, with the evaluation timed to run alongside this initial budget period. To facilitate the analysis, a 'snap-shot' of the Fund had to be taken to freeze its position at a particular point in time. The snapshot was taken in mid-October 2016. Hence all feasibility studies explored by this point (50 studies in total) were included and as such, the analysis will not capture opportunities explored in studies which: had been submitted but not accepted, had not yet been submitted (and hence were still 'live'), or were at early stages of application for grants or formulating interest.

The feasibility studies themselves presented a picture of viability at a specific point in the development of the project, and in a period where the over-arching policy environment and subsidy regime were shifting substantially. As such, it could not be assumed that all opportunities assessed as viable would lead to installation in practice. To mitigate this, the evaluation aimed to undertake interviews with all 50 projects which had completed feasibility studies to: check the status of projects and opportunities assessed, fill in any gaps from the feasibility study regarding data required for the CBA assessment and to gather necessary information to undertake the social impact analysis. In total, 33 interviews were successfully carried out. In some cases, it was definitive whether the project had resulted in successful installation of technologies or had been cancelled. However, some projects were reported as 'active' or 'postponed'. In these cases, the interviewee was asked to assess the likelihood of the project progressing to successful installation: in 4 cases interviewees were confident the project would deliver a successful installation.

In the case of 17 projects, no positive contact could be established with project officers. This left ambiguity around the successful progression of these projects. In these cases, targeted web-searches were undertaken to try and find any public information regarding the potential success of these schemes. Through this evidence was found of successful installation under 4 projects. Where no interview was held and no further evidence found through web-searching, these opportunities were completely excluded from the analysis as no evidence could be found that they led to (or will lead to) installations in practice.

In the updated Defra model, the assessment of environmental effects focused on changes in GHG emissions and air quality impacts, given GHG emission reductions are a key objective of RCEF and methodologies exist to quantify and monetise air quality effects. In practice, the installation of renewable technologies may have a wider range of environmental effects, e.g. on visual landscape, noise, odour, etc. However, data and methodologies do not exist to as easily quantify, let alone monetise these effects. Where applicable, qualitative analysis of the importance of these impacts was included.

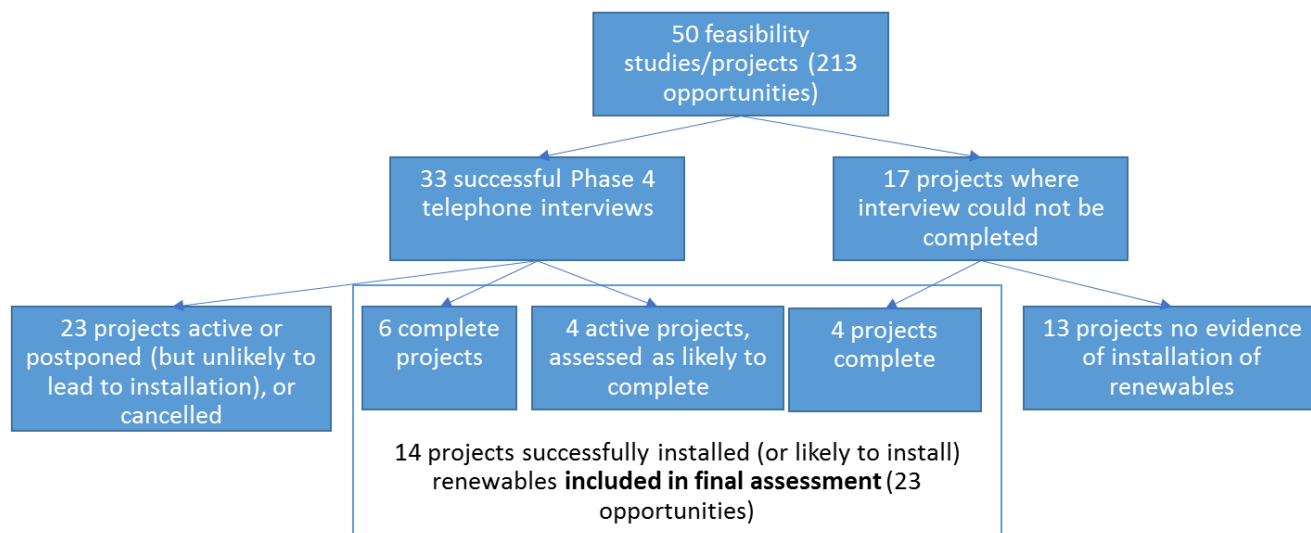


Figure 1. Inclusion of projects/opportunities in final analysis

Results

RCEF outcomes

The snapshot for the evaluation was taken in mid-October 2016. At this point 50 Stage 1 feasibility studies had been completed, submitted and signed off by WRAP². Across the projects, 213 opportunities for the installation of renewable energy (or other linked) measures were recorded as having been considered by rural community groups, an average of 4.3 per project³.

A range of different renewable energy technologies (or linked opportunities) were considered by the studies (see figure A3 in Annex). The majority of opportunities explored were for the generation of renewable electricity (58% of all opportunities considered). In contrast, fewer renewable heat opportunities were explored (30% of opportunities), alongside some opportunities which would generate both renewable heat and electricity (12%).

In total, potential opportunities were considered with a total renewable electricity generating capacity of 56.2 MW, with the propensity to generate 52.6 GWh of renewable electricity per annum. The most popular under consideration was solar PV (65 options identified). Likewise, for renewable heat, opportunities were considered totaling 13.8 MWth of capacity, with a total potential output of 37.2 GWth per annum, with biomass boilers representing the most common option explored (47 options identified)⁴. Given the feasibility studies are likely to have taken a broad-brush approach, considering all potential options, the driver of the popularity of options considered is potentially more a reflection of technical opportunities, rather than financial viability at this stage.

As of the start of February 2017: 9 Stage 2 loan applications had been made, of which 4 have been awarded, 3 not progressed by applicant, 1 declined and 1 currently in assessment) and the total value of loans sanctioned was just under £385,000 (including a £66,000 value of loan currently in assessment).

² At the point where the study neared completion at the start of February 2017, 140 applications had been made for Stage 1 funding, 100 grants had been 'contracted' (i.e. awarded), and 69 studies had been compiled.

³ There is a wide variability around this average: some projects simply considered one option, and the maximum number of different options considered was 15

⁴ It is important to note that many of the opportunities assessed were alternatives to other opportunities, and hence are mutually exclusive. As such the above figures present a total potential of opportunities considered but not directly a total renewable potential which would be achievable in practice.

Of the 213 opportunities considered across the 50 complete feasibility studies, 23 opportunities (across 14 projects) were assessed as complete or likely to be successful. As a result, it is estimated that a total of 11.6 MW of renewable electricity generation capacity will be installed. These measures have the ability to generate up to 18.2 GWh of renewable electricity per annum for use on site or export to the national grid. In addition, successful projects are anticipated to result in the installation of 2.3 MW of renewable heat capacity, with the capability to deliver 6.9 GWh of renewable heat per annum.

Impacts - Social return on investment

A wide range of outcomes were reported under the SROI model arising from engagement in the RCEF process. These were first identified qualitatively, before being quantified and monetised and included as part of the overall CBA. These are summarised against the four social outcome themes as follows:

- **Community engagement and knowledge sharing:** Knowledge generation is often concentrated amongst the key players who can then use this to develop interest across the community. Where community energy projects can be combined with the opportunity for an educational offer the potential for knowledge sharing is greatly increased.
- **Environmental awareness, sustainability and resource use:** Interviews found that RCEF provides a focus for stimulating interest in community and renewable energy, provides a vehicle for community participation and for obtaining alternative forms of investment
- **Confidence of individuals and communities:** RCEF is deemed to have potential for developing confidence in individuals and organized groups over the medium to longer term, but examples of this are currently limited and quite context specific. The fund has helped to build confidence of leaders and other stakeholders close to the project in quite specific ways, often related to improved understanding of the technical and financial aspects of renewable energy development. One group reported noticeable up-skilling and increased confidence in relation to renewable energy and increased confidence
- **Cooperative working and social relationships:** In some areas project teams have instigated and developed a number of fruitful relationships between organisations (such as local authorities (LAs) and housing associations), which is already leading to cooperative working. This also includes the dynamic between energy consultants and community groups, and also links in other community and area-based interest groups, but local and further afield. Furthermore, RCEF is playing a role in cooperative working between community projects in different areas, leading to the spread of ideas and good practice. Interviews revealed potential for increased community engagement and knowledge sharing as a result of RCEF. The dynamic between energy consultants and community groups is one dimension of this, but also developing links with LAs and other area-based interest groups, both local and further afield.

Impacts - Cost-benefit analysis results

The overall assessment of the costs and benefits of the scheme is presented in the table below. The results are split between those accruing to the local community, and overall to 'UK plc'. The results suggest that renewable technologies installed through RCEF will deliver substantial benefits to rural communities. The main direct benefit to rural communities through installation and operation of renewable technologies will be through receipt of supporting subsidies (FITs or ROCs in the case of electricity generation, and RHI for renewable heat) for renewable generation. Over the lifetime of these measures, they are anticipated to deliver over £39m of subsidy payments, alongside a further £8m of energy bill savings and £1m of other income. That said, these technologies will also place a cost on these communities: the installations are estimated to carry a total upfront investment cost of just under £24m, and a total cost of £15m associated with their operation over their lifetime.

From the perspective of UK plc, through the displacement of conventional energy consumption, the renewable technologies will also deliver important environmental benefits: total GHG emissions savings of £3.3m and air quality emission savings of £2.7m over the lifetime of the measures installed.

Through RCEF, social benefits (assessed through the SROI model) valued at around £15.6m have been delivered to local communities, or a benefit of £4.85 for every £1 spent of central funding for the scheme. The key impacts provided are through community engagement and local economy effects. The deployment of renewable technologies will have associated employment effects, both in the construction and installation of the asset and through its ongoing operation. These are captured and monetised in the social impacts, but a separate illustrative assessment based on the likely costs and input-output tables suggests the 23 installations could deliver 58 jobs through construction of the assets and a further 22-48 jobs associated with ongoing operation.

Table 1. Cost-benefit analysis results

	Community	UK plc
PV economic and environmental benefits	48,700	40,600
PV economic and environmental costs	-38,700	-38,700
PV social impacts (SROI modelling)	14,000*	14,000
PV costs of running the scheme	-3,210	-3,210
NPV	20,800	12,800
Benefit-cost ratio (BCR)	1.50	1.31
Net benefit per £ spent	6.49	3.98
Total jobs created (construction / operation)	58 / 22 - 48	
GVA effects (£m) (construction / operation)	£27m / £21m - £37m	

*Note: Figure lower than total £15.6m impact assessed due to overlaps with wider assessment model

In summary, the RCEF scheme is estimated to deliver a total net benefit for local communities of around £20.8m, equivalent to a net benefit of around £6.49 for rural communities for every £1 invested in running the RCEF scheme (to February 2017, the total amount invested in RCEF was £3.2m). The scheme also delivers a net benefit for UK plc, although this is smaller than the benefit provided to the rural community specifically.

The potential additionality (deadweight, leakage and displacement) of the effects of RCEF was considered, based on the nature of the scheme and the responses to stakeholder interviews in Phase 4. The study concluded that some job effects may leak out of local community: many projects have emphasised employment from local community but some external engagement required where key skills not available within the community. Furthermore, RCEF projects critically depend on over-arching subsidy programmes and other sources of funding have also been involved in supporting projects, both of which could 'claim' some of the benefits. However, it was judged unlikely that RCEF schemes have directly displaced other renewable generation given the nature of the subsidy policies (which did not place a total cap on projects supported at the time) and in any case all benefits accruing to rural communities specifically are likely to be additional.

Explanatory factors

The assessment of the RCEF process (undertaken through fieldwork in 2014 and in two sets of telephone interviews in March 2014 and June 2015) revealed a number of important themes and issues outside of the quantitative assessment of impacts.

The majority of respondents felt that the application process was straightforward and that there was sufficient information and support. There were a few isolated concerns raised over the accessibility to the proposed grant/loan funding mix from communities with low levels of knowledge and funding skills. The interviews carried out as part of Phase 4 of the evaluation also collected information on the progression of projects to RCEF Stage 2, including the reasons underlying the outcomes observed. The most prominent reason

for projects not applying for a stage 2 loan was due to the project stopping as a whole. Of those that remained live projects, the most common reason for not progressing to Stage 2 of the RCEF scheme was that it was deemed ‘expensive’ and/or loan financing was unattractive. The telephone interviews also identified a variety of reasons were provided as to why opportunities were rated as ‘cancelled’ or less than likely to go ahead. The most predominant reason was the underlying changes in the subsidy regime which has resulted in a large number of opportunities previously considered viable becoming uneconomic to pursue. Other common concerns included the recent reduction in oil prices and restrictions around planning.

There was also some suggestion that it was largely communities with high levels of human and social capital that were making applications. One energy consultant in the north of England indicated that some sites with high potential for renewable energy generation were being missed as relevant communities lacked the capacity and skills to make the application for grant funding.

Over the 3 years of the evaluation process CCRI /Ricardo provided information to WRAP on feedback received from the various applicants. This was used by WRAP to make changes and improvements to the process, including producing clearer guidance and an improved application form. Significantly, a pre-application process was also introduced to assist applicants who were unsure if their proposed project was suitable to receive funding via RCEF and met the key criteria. This allowed WRAP to engage fully with the applicant and provide greater support prior to and upon submission of a full application. The impact of this was seen in a year-on-year improvement in approved applications was achieved.

From the interviews and stakeholder engagement, the study was able to summarise key barriers and catalysts for the various projects, which provided an informative synopsis of progress and context. Changes and uncertainty in government policy were very much on the minds of project leaders during the study period, influencing and to a certain extent impeding progress of projects, especially around the viability of community share offers. The key barriers and catalysts across the projects are summarised in the following table.

Table 2. Barriers and catalysts

Barriers	Catalysts
<ul style="list-style-type: none"> • Changes to government policy (including tax relief on community share offers through the SISR, the FiT and RHI) around the time of the interviews were cited as a barrier, both in respect of financial feasibility, and the uncertainty of not being able to plan details such as rate of return and funding costs • Land ownership is often an issue, namely that landowners may not want to be tied in for long periods of time, or settle for relatively low rents • Wind projects can come up against public opposition due to landscape impacts • A lack of knowledge about renewable energy can be an initial barrier although is usually overcome through development of partnerships and contacts • Community groups can be against too much publicity out of fear that a project may not go ahead 	<ul style="list-style-type: none"> • Support of the Local Authority is deemed positive, not only with respect to land use planning but also more generally in relation to development and local plans and building a reputation locally • Some policy changes were seen as speeding up the process of obtaining funding to pursue the second stage of a project, such as the pre-accreditation to lock in FiT rates • Finding an investor who is a good fit, both in terms of the return they seek and the desire to support sustainable/ethical projects can be a major catalyst • Previous knowledge and interest developed through LEAF and similar projects can help to generate support and provide a catalyst to mobilising the community in support of RCEF • Community energy projects are more likely to come to fruition where applications are made and projects managed by the community organisation itself, rather than where a separate community regeneration company implements the Stage 1 project and then has to facilitate the set-up of a limited company to install and manage the facility.

Discussion

Evaluation findings

The study identified a range of conclusions from the analysis performed, namely that RCEF has been successful in achieving its aims. Previously un-recognised demand for renewable energy investment has been unlocked as a result of the Fund: In total it is estimated that projects which completed a feasibility study under Stage 1 of the RCEF went on to successfully install 11.6 MW of renewable electricity and 2.3 MW of renewable heat capacity through community owned assets. Furthermore, the assessment of additionality suggests that the vast majority of the projects and installations delivering these effects would not have occurred without the support provided through RCEF. Important context to these results is these outcomes were achieved against a challenging backdrop of changing Government support for renewables, most critically the reduction of Feed-In-Tariff for solar energy during 2015, and changes in legislation surrounding planning permission.

Evaluation of the effectiveness of RCEF in addressing financial and knowledge barriers to communities investing in renewables shows that these barriers have been somewhat tackled, although they remain large barriers to future uptake. The evaluation found that many projects were based on the vision, energy and capacity of a single individual or small group, pointing to the need for support around capacity building to unlock latent and unknown potential within target communities. Nevertheless, a degree of up skilling and confidence in relation to renewable energy was noted. Without RCEF funding there would certainly be fewer community energy projects under active consideration and development, and the qualitative fieldwork demonstrated it helped to: (a) build knowledge and skills in renewable energy, (b) build and strengthen partnerships that help bring projects to fruition, both within the third sector and with the private sector, and (c) to stimulate interest and participation in the community and its development (all in accordance with the RCEF Theory of Change).

However, there were a few isolated concerns raised over the accessibility to this form of funding from communities with low levels of knowledge and funding skills, and some suggestion that it was largely communities with high levels of human and social capital that were making applications. Projects were typically led by small core teams with high levels of expertise and grant application experience. One energy consultant indicated that some sites with high potential for renewable energy generation were not being considered as the skills did not exist locally to make the application for grant funding, and these communities would require pro-active support to enable their engagement.

The aggregate CBA suggests RCEF delivered a net benefit, both for rural communities and UK plc: the social, environmental and economic benefits outweighed the investment costs. Relative to the costs of installing and operating these assets, the NPV cashflow to rural communities is estimated to be around £10.0m over the lifetime of the assets installed (an average of £589,000 per completed installation). As an added economic and social benefit, proceeds from the majority of successful projects are likely to be put to work locally. Through the interviews, many of the project leaders indicated the profits of such schemes are likely to flow into community benefit funds or equivalent vehicles. Furthermore, RCEF has also promoted rural growth: The interviews and CBA analysis suggests jobs have been created and some of these are captured by local community (although some are likely to have leaked out into the wider economy).

The social impact analysis demonstrates the wider value of the RCEF to rural communities, despite the fact that only a handful of community energy schemes have come to fruition since the fund's inception. The results of the SROI analysis demonstrate a return of investment for rural communities of almost £5 for every £1 invested in RCEF. The majority of social value from the RCEF to have been delivered through community engagement and impacts on the local economy, through outcomes such as increased volunteering and development of new or existing social enterprises. These benefits occur not only where projects proceed to successful completion, but also occur (although to a lesser extent) in communities where the feasibility study has not led onto the installation of renewable technology.

Policy recommendations

The study made a range of recommendations for the provision of future support for Community Renewable Energy, including:

- Remaining technology-neutral as benefits to be realised are highly site-specific and community-specific.
- Scope could be enhanced to include energy-related measures that are not as heavily dependent on Government subsidies, such as energy efficiency projects, tariff-switching, etc.
- The design of Stage 2 funding should be reconsidered: anecdotal evidence suggested that loan funding was a barrier when combined with the change in Government subsidies for renewables.
- Communities may benefit even more from the opportunity for social and community development through the introduction of some preliminary funding for more general capacity building and RCEF promotion as well as funding for feasibility studies.
- Offer additional non-financial advisory support to applicants. Examples would include how to approach / what to expect around: Planning constraints, grid connection issues and procedures, commercial arrangements with third parties, and arrangements for receipt of grant and subsequent subsidies. In addition, more guidance could be provided around potential social and community outcomes at the point of the Stage 1 application, to help community groups think through and plan their projects, as well as maximise their social potential at the design stage.
- Promoting awareness of the Fund within Local Authorities can potentially aid in the approval of new projects and provide additional sources of funding for developers.
- Additional engagement and capacity building within communities could encourage under-used sites to come forward.

Overall, RCEF and its results depend critically on Government support for renewables, and this will continue to be a critical factor for any future scheme. The installation of renewable technologies is ultimately driven by the over-arching renewable subsidies: RCEF serves as means to channel a proportion of the benefits provided by these subsidies to rural communities. As such, for the RCEF scheme to provide value-for-money, it is imperative that a high level of consistency is retained between the Fund and the over-arching policy ambition. RCEF is unlikely to be able to scale to cover the reduction in subsidies that has happened over the 3 years to the conclusion of the study. Many RCEF projects did not go ahead due to cuts in subsidies and unexpected issues with planning permission. However, some projects were still successful. It is uncertain what will happen to renewable subsidies going forward, but other factors may positively influence the success of future projects; in particular, capex for some technologies has significantly reduced in recent years (e.g. solar PV) and could continue to reduce over time, and the price of conventional fuels are anticipated to continue to increase in the future. Both of these factors may result in some projects becoming viable once more, irrespective of subsidies.

Conclusions and what happened next

The evaluation concluded that the Fund had been successful in achieving its aims, and that previously unrecognised demand for renewable energy investment had been unlocked. In particular, the study explored and estimated the range of financial, environmental and social benefits that such projects can deliver, and that they outweigh the costs both for the local community and for society as a whole. However it also concluded that financial and knowledge barriers to community investment remained.

The study also made recommendations for future support of community renewable energy, including expanding the scope to other energy related measures, to reconsider the use of loans and funding for additional initial capacity building.

Since the evaluation completed in 2017, RCEF continues to provide funding for community renewable schemes following a relaunch in August 2019. The scheme is now being administered by the 5 Local Energy Hubs⁵. Each Local Energy Hub runs event activities across an area covered by several Local Enterprise Partnerships, with the work of Local Energy Hubs is governed by representatives from each Local Enterprise Partnership (LEP) in each region. There have been a number of important changes which directly address some of the issues and concerns raised through the evaluation:

- The amount of funding available under Stage 2 has reduced to £100,000, however this is now provided in the form of a grant rather than a loan. Stage 2 grants are to be used to support planning applications and develop a robust business case to attract further investment.
- The scheme continues to focus on supporting the installation of renewable or low carbon energy facilities, such as anaerobic digestion, biomass heating, and solar PV. However, it is also opened to considering bids from multi-technology approaches: Energy efficiency, storage, electric vehicle charging, grid services and demand management can also be considered in bundled approaches.
- In addition, the Local Energy Hubs have Local or Combined Authorities as accountable bodies for funding, and public sector representatives on boards, which is a positive development for RCEF projects where Local Authority involvement in particular was identified as a catalyst for the success of projects.

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⁵ Local Energy Hubs are new government funded programmes, supported by Department BEIS. There are five Local Energy Hubs across England, on the footprint of each region: Midlands / North East, Yorkshire & Humber / North West / South East / South West. The Hubs have been created to increase public sector capacity to bring forward energy schemes.

Annex

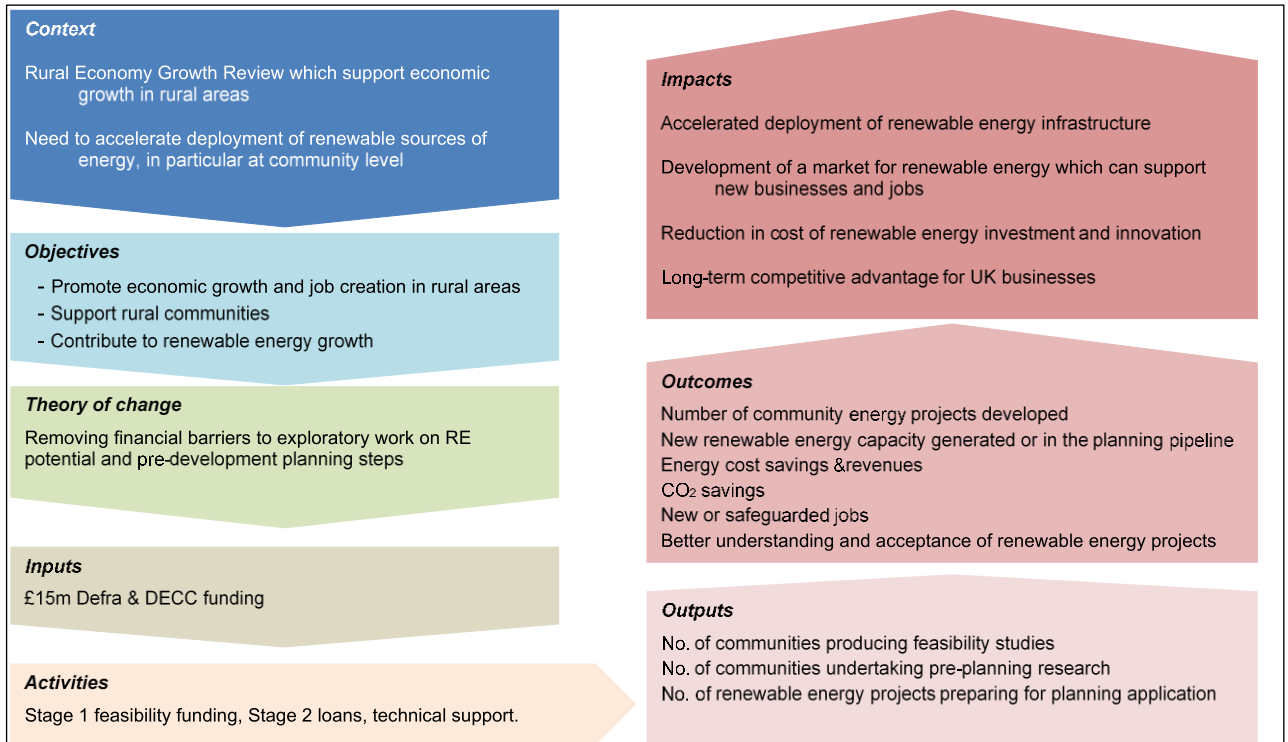


Figure A1. RCEF theory of change

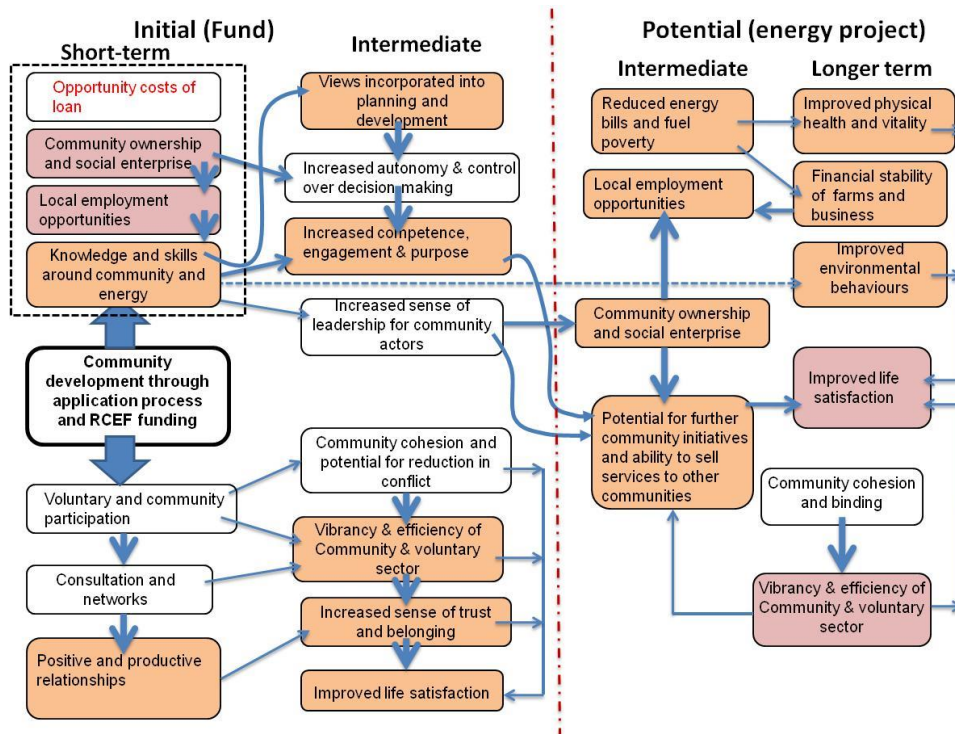


Figure A2. RCEF Social theory of change

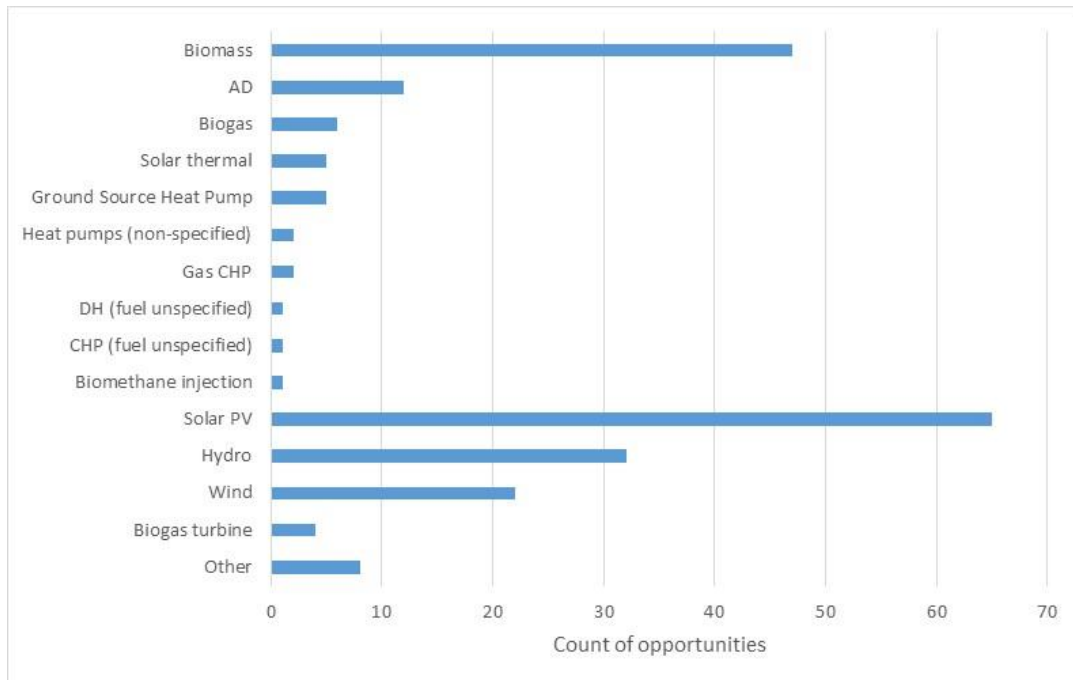


Figure A3 - Split of opportunities considered by technology type