

COMMUNITY RENEWABLES IN THE SCOTTISH BORDERS

ISSUES & OPPORTUNITIES



A report for the Scottish Borders Council

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Summary

Background

As part of the work of the Scottish Borders Sustainable Energy Forum (the Forum), an assessment into the level of understanding of energy efficiency and renewable energy at a community level was required.

Methodology

Firstly, members of randomly selected communities who had made contact with Scottish Borders Council were interviewed in order to gain a general picture of the issues surrounding the uptake of renewables in the Scottish Borders at a community level. Secondly, a larger sample, taken again at random, of Community Councils were sent a questionnaire in order to gain a greater representation of the status and progress that communities in the Borders were making into installing energy efficiency or energy generation schemes. Recommendations were formed as a result of these interviews and surveys.

Key findings

- Communities are well aware of the technological options available to them, be it energy efficiency measures, solar panels, or wind turbines, or small scale hydro schemes
- Communities find sources of information difficult to sift through. Much information is irrelevant to their situation or they cannot spare the time to assess the large amounts of information available for their project.
- Communities have not heard of many of the principle organizations that provide funding and support.

Key Recommendations

- The forum should prioritise communities undertaking their first project, especially those that are revenue generating, as this will allow these communities to stand on their own after their first projects success, supported by the returns they receive from their project. Other communities will benefit from having more nearby experience in looking for funds available, as well as research and development skills.
- The forum should look into setting up periodical 'technology tours' to communities or projects that 'showcase' renewable energy and energy saving technologies in order to create interest and give a better idea of what is possible to interested parties.
- If possible, Community Energy Scotland (CES) should provide a Borders officer to expand the number of working projects in the Borders.
- All public libraries in the Borders should have a copy of the Scottish Governments 'renewable energy toolkit' and advertisements for the groups that give aid to communities to make this information more readily available.
- The Scottish Borders Council should set up a wiki –type site in order to coalesce all the information regarding suppliers, communities, existing installation, costs, technologies and policy into one site. This could be linked to existing online Borders websites, although should be stand-alone in its scope. This will streamline the process of exploring options from which technology, to what financial model, even the 'who' to install the equipment.
- Purchase of equipment by SBC to make feasibility studies cheaper- i.e. thermal cameras.

1 Introduction

After recommendations from the Energy Summit in 2006, the Scottish Borders Sustainable Energy Forum (the Forum) was created in order to direct strategies concerning the development and implementation of sustainable energy projects across the Scottish Borders.

The group considered in 2009 that further information was required regarding energy efficiency and levels of interest in renewable energy within the various communities of the Scottish Borders. An assessment of issues faced by these communities was required, in order to create recommendations to further the tangible progress of sustainable energy projects in the Scottish Borders.

1.1 Objectives of the study

The principle objectives were as follows:

- Gather information from communities in the area regarding energy efficiency and renewable energy
- Gather information regarding the success of support groups in providing information, advice and funding in the Scottish Borders
- Assess what type of support community groups around the Scottish Borders require
- Assess the demand within communities for renewable energy projects
- Make recommendations as to how support should be offered to communities.

1.2 Methodology

In order to ascertain the levels of interest, and availability of support to communities in the Borders, a two stage review was undertaken. The first was to assess the broader situation in the Scottish Borders via a series of interviews with communities considered 'prominent' due to their activity with regard to energy efficiency or generation measures, or the degree to which their plans to install such measures had progressed. This took the form of an interview. The communities interviewed are listed and the structure of the interview is shown in appendix A.

The second stage was to seek to interview by phone a broader sample of representatives of Community Councils around the Borders. Selection was down to availability of contact information, and availability of contacts. In order to gain a higher return, questionnaires were also posted out to contacts via email. In the final fortnight, the results were analysed and compiled into this report. The survey is detailed in appendix B.

If this study was to be replicated in the future to ascertain the degree to which community energy schemes have progressed, then it would be perhaps wise to describe, in the survey what solar PV does, rather than name it. The 'PV' part of its nomenclature may be less well known than the purpose of the technology itself. All surveys should be emailed out, and perhaps the titles of the organisations should have an accompanying logo, as this may be more memorable than their titles.

2 Results

2.1 Community Council Responses

This section will examine the results of the questionnaire to assess level of awareness, desire and activity in communities across the Borders. It will detail this in light of average figures of energy generation and consumption, and analyse where the Forum would be able to take steps to aid the dissemination of information and support services to aid the installation of renewable energy systems, and energy saving measures in the Borders.

A total of 20 completed surveys were returned, a good return for the amount of Community Councils that were contacted- there are 63 in the Scottish Borders. Replies were received from a wide geographical area.

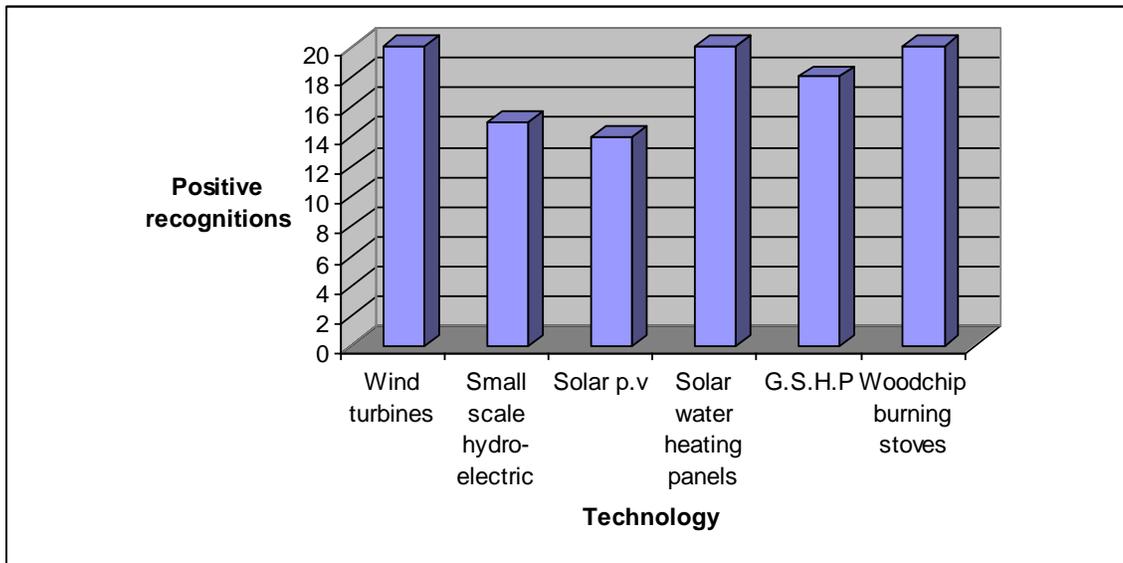


Figure 1: Awareness of renewable energy technologies (n=20)

It can be clearly seen that small scale hydro-electric systems and solar photo-voltaic (power generating) systems are less well known than the other technologies. Given the media attention currently highlighting wind turbines, and the fact that woodchip stoves are similar to more traditional technologies, this perhaps was a trend to be expected. However, given the large scale hydro-electric systems in Scotland, and the fact that mill lades historically have powered industry in the Borders, it seems perplexing that this abundant source of energy is less well known. The fact that there is a duo of solar technologies available could be the reason that P.V is less well known.

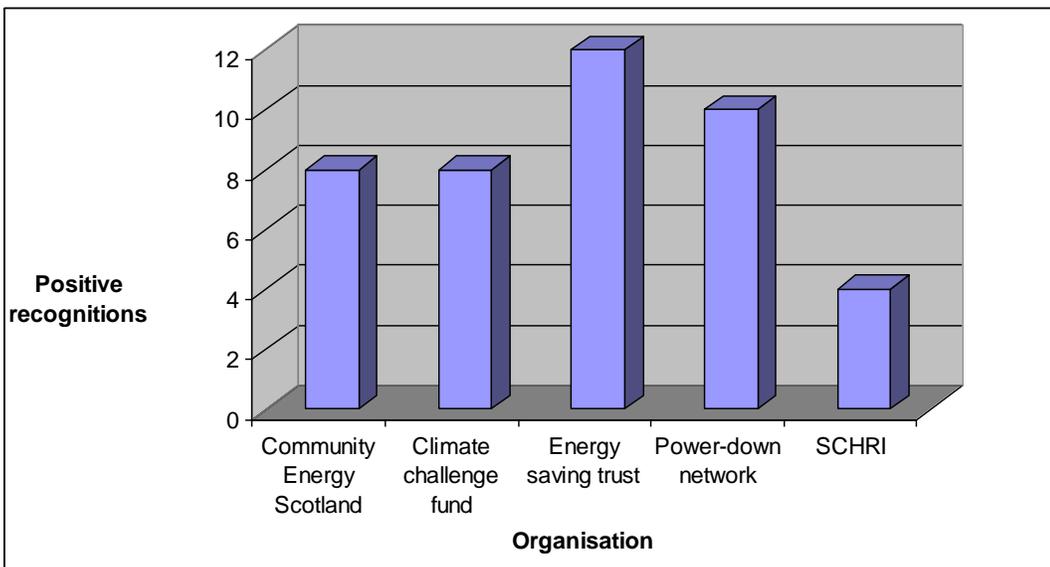


Figure 2: Recognition of support agency (prompted) (n=20)

As one can see, awareness of the organizations put in place to support communities taking ‘green steps’ particularly steps towards renewable energy systems, is far poorer than awareness of the technologies themselves.

Whilst the Communities and Renewable Energy Scheme (CARES) is administered by CES (Community Energy Scotland), still less than 50% of returns cited a knowledge of the existence of this 'active arm' of the grant system in Scotland. The Climate Challenge Fund perhaps does well from the fact that they are tied into the 'Keep Scotland Beautiful' campaign.

The Energy Savings Trust (EST) having been established for slightly longer, as well as having a very established and easily accessed website, is better known.

Power-down is probably best known in those areas in the Borders where it is currently working, the communities of Lauderdale, Langholm and Walkerburn.

It must be remembered, that whilst the current level of awareness of CES is quite low, CARES grants have only been recently administered through them. The Highlands and Islands Community Energy Company has now been expanded into a Scotland-wide equivalent. This change may be part of the reason for the lack of knowledge regarding these sources of help in the Scottish Borders.

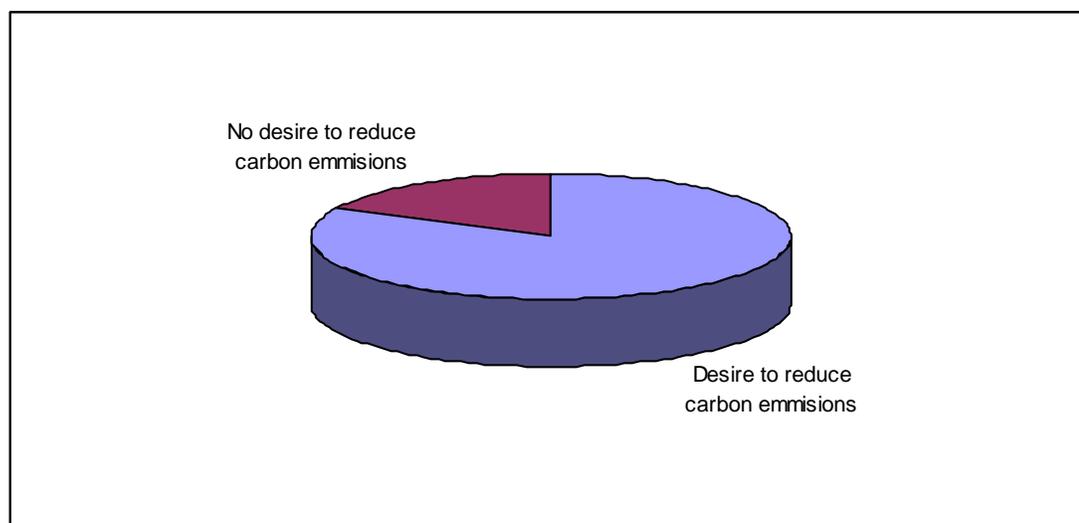


Figure 3: Community desire to reduce carbon emissions (n=20)

This pie-chart shows clearly that communities are largely interested in reducing their carbon emissions. However, there seems to be a distinct lack of excitement regarding renewable energy, with only half of the respondents considering that their community has a desire to install a renewable system and the other half stating there is no real desire that they are aware of.

In addition to this, 50% of respondents were aware of another community that had installed a renewable energy system, 61% were aware of another non-community group having installed some form of renewable energy and two thirds, 66%, were aware that their area had used some kind of renewable energy historically.

2.2 Qualitative data from interviews

Interviews were sought from several groups around the Scottish Borders considered either to have projects at an advanced level of development, or have made a significant achievement in developing renewable energy in the Borders. Of those contacted, interviews were completed with:

Mr Andy Maybury of 'Greener Hawick'
Mrs Collier of the Lauderdale development Trust

Dr Neil of the Selkirk regeneration group
Mr Iain Jarvie or the Whitsome Village Hall Association.

In terms of projects that the communities had considered, all had looked at energy efficiency as well as renewable potential. The first three named above had all considered micro-hydro schemes, and all were looking at some form of wind energy. Above this, all had independent agendas with varying additional projects, from interest in hydrogen cells to success with the installation of a ground-source-heat-pump and solar water heating panels at the Whitsome Village Hall.

Whilst all these groups have differences in their set-up, management structure, and decision making process, there was common ground on a number of issues. All groups mentioned a dedicated core of individuals who desired to take the project forwards. There was concern with regards to the ease of communication with support groups. This corroborates the lower awareness of the support organizations found in the Community Council survey above. One individual interviewed described a 'horrendous bureaucracy'; whilst another stated that the volume/number of sources of information was 'frustrating'. Another stated however, that the mechanisms were surprisingly straightforward, but this was the only one of the four to describe the system in favorable terms. All of the groups had succeeded in attracting some form of funding.

All described a core motivated membership, who are adept in grasping the issues that emerged through the process (albeit a long one) of researching the technologies and options available regarding renewable energy. One concern was that many individuals are very motivated to make a difference to the broader community and thus move on to other groups or projects where they can make a quicker impact. This was similar to a comment from another group, who were very conscious of the amount of time that a few of the volunteers could give to the project.

3 Analysis

3.1 Knowledge of renewable Technologies

From the survey, levels of awareness of the differing technologies varied and this poses a number of questions for the Scottish Borders.

Whilst wind has good prospects due to good grid connections, and an abundance of suitable sites, it must be remembered that this is not the only technology that could prove useful in bringing jobs and greater energy security to the Borders.

According to the Scottish hydropower resource study 'there are 1,019 potential schemes across Scotland. These include run-of-river schemes and new storage schemes identified by the model, with a total practical potential of 657 MW that could deliver 2.77 TWh of electricity annually.'¹ A number of communities in the Borders should be able to tap into this resource, and indeed given the historical use of hydro power, this could reform a connection to the rivers that Border towns have lost. Hawick for instance, has a number of weirs and could perhaps be used as a pilot for the rest of the Borders. A significant amount of research into flow data has been done and potential sites have already been identified.

Given the lower uptake for solar panels, particularly on a municipal scale, it should be less of a concern that solar PV is less widely identified by respondents. Whilst private installation of solar PV may increase the level of awareness of this technology, the fact that solar water heating panels can deliver better returns means that on an individual level, the high recognition of this technology can be considered a good thing.

¹ Scottish Hydropower resource study, by Nick Forrest Associates Ltd
The Scottish Institute of Sustainable Technology (SISTech)
Black & Veatch Ltd
Fraser A. Wallace

In order to expand awareness of what these technologies can feasibly offer, 'technology tours' or "learning journeys" could be initiated, whereby interested individuals could have the opportunity, to visit working examples of a range of renewable technologies and to see the kind of benefits that Borders communities could gain as well. The Earth Ship at Kinghorn in Fife for example, has a wide range of technologies on site.

3.2 Awareness of support groups

The recent extension of CES activity into the area and their new role in the administration of CARES could be a reason for the lower level of community awareness of its existence. However, the fact that most of the interviewed individuals stated that technical information and the variety of sources of funding available clutters the application process, indicates that a single point of access for all these sources would be useful. A centralized point of access for information regarding technologies, installers, 'installees', support groups and sources of finance would be most useful. A 'wiki' type website could provide links that would allow an individual to see projects, costs, who installed them, where finance came from, etc relatively easily.

For those who may not have access to the internet, Scottish Borders Council could place, for relatively little cost, a copy of the Scottish Governments 'Scottish Community Energy Toolkit - Best Practice' document in libraries or contact centres. It can be accessed via

<http://www.scotland.gov.uk/Publications/2009/03/20155542/0>

Scottish Borders Council has published additional guidance in the form of supplementary planning guidance for renewables and a Community Benefits from Windfarms Toolkit which are available on the Councils website.

This information can assist communities by providing relatively easy access to the information that is necessary for developing a renewable energy project.

Further to this, a dedicated community support officer who could assist individual communities to investigate and develop sustainable energy projects would be invaluable. Communities could be prioritized for support in the Borders to ensure tangible achievements on the ground, which can also provide revenue raising opportunities. This would also increase the number of individuals with experience and skills in such project delivery who could then support other local groups, thus developing a strong network of activity across the area.

3.3 Aids to communities

Whilst the majority of communities stated that they wanted to reduce carbon emissions, only half stated that they would wish to undertake a renewables project. The Energy Forum are very keen to see this level of interest increase, and with the support of both local and national partners methods of support will be pursued. The Forum could reduce some of the disincentives of complicated and confusing information, and streamline the process for communities by making appropriate information more easily available through a central local source. The Forum should pursue the purchase of equipment such as wind gauges and thermal cameras. In order to recoup the cost of purchasing these items, a small rental charge could be made to communities, or businesses undertaking feasibility studies. Currently a thermal camera is an expensive option for an individual community, as would be a wind gauge, but having access to this equipment in the Borders could make feasibility assessments for proposals much easier.

4 Conclusion

From the survey it would appear that communities are eager to reduce their impact on the environment, but are not fully aware of the organisations that can support them. Renewable energy projects could both generate power and finance for the community. Whilst CES, EST and the CCF have supported and provided funds to some communities within the Borders, there still appears to be limited knowledge of their existence outside the higher capacity “active” groups. Some communities have spent a great deal of time researching into the technological options for development, as well as finding out who can support them.

The Forum could provide some small but significant resources to make it easier for communities to help themselves. Providing clear signposting to the key sources of information that communities require to progress with these projects is vital. Creating interest and excitement through showcasing examples of the technologies working successfully would help stimulate interest and demand. There may be potential in having a ‘show town’ such as Hawick perhaps being assisted and supported to provide a visible, central example or demonstration site within the Borders. Providing further practical assistance to these communities would help the development of renewable energy projects in more communities.

It is suggested that because the Highlands and Islands has had a good community support structure (eg through Highlands and Islands Community Energy Company (HICEC and now CES) it has a higher level of community awareness of the potential of renewable energy. The Borders, with good infrastructure in terms of power lines, has not so far brought forward the same degree of projects. The appointment of an appropriate community development officer for the Borders could have not only positive ramifications for local communities in the Borders, but it could help bring a broader range of renewables into the south of Scotland, offering greater energy security, jobs and opportunities. With this support, communities in the Borders would be more able to take power into their own hands.

5 Bibliography

Local aspects of UK renewable energy development: Exploring public beliefs and policy implications- Dr. Patrick Devine-Wright BA MSc CPsychol

Scottish Hydropower resource study, by Nick Forrest Associates Ltd
The Scottish Institute of Sustainable Technology (SISTech)
Black & Veatch Ltd

Community Renewable Energy Toolkit ISBN9780755919758 (Web Only)
Official Print Publication Date March 2009. Scottish Government publication

Wind power in Europe: Politics, Business and Society Joseph Szarka
Published 2007 by Palgrave Macmillan ISBN-1-4039-8985-0 New York

Renewable Energy: Power for a sustainable future. Godfrey Boyle Oxford University Press Oxford United Kingdom 2004 ISBN 0-19-926178-4

6 Appendix A

Lauder development Trust- Mrs Collier
Greener Hawick- Mr A. Maybury
Whitsome Town Hall Assoc. Mr I. Jarvie
Selkirk Regeneration group- Mr L. Neil

Scottish Borders Sustainable Energy Association

Community Questionnaire – July 2009

1. Group origins.

1.1 When was the group formed?

1.2 What are the objectives of the group – was it established to deliver a specific project?

1.3 What is the structure of the group, i.e. do you have an executive committee, what decision making process is in place?

1.4 What are your future objectives, i.e. does the group have an action plan or strategy?

1.5 What do you consider to be the principle strengths of your community group?

1.6 Do you consider there to be any weaknesses in your community group? If so what?

2. Projects

2.1 How did the group decide which projects to pursue?

2.1 What stage are you at currently?

2.2 Has the group weighed options between energy generation/ energy saving?

2.3 Have you ever tried to assess energy efficiency in your community, for example through the use of a thermal camera? If so, how was this done?

2.4 Have any feasibility studies been made for renewable energy?
If so what, where, when, may I get a copy?

2.5 Are you aware of any previous attempts to utilize renewable energy in your area? For example a disused Victorian hydro scheme on a local estate.

2.6 What would be the principle lesson learnt through the groups' progress so far which you could apply to future projects?

3. Funding/support

3.1 Where have you accessed information and technical advice from?

3.2 How accessible do you find information on the subject?

3.3 Have you pursued funding support for your project? If yes, what for and from where?

3.4 How accessible do you find funding mechanisms?

3.5 Have you found obstacles to progress? What would you say is the principle block to your groups progress?

4. Group make-up:

4.1 Are there sufficient skills to develop the group available in the local community, for example IT skills for a website?

4.2 What skills does the group have access to? Are there local accountants, engineers or planners who are in, or could be convinced to join the group?

4.3 Are skills lacking, and where could the group access these skills and knowledge if the local group does not have immediate access to them?

5. Next steps

5.1 What are the next stages for your current project/s?

5.2 What is the next piece of support which will be required by the group, and where do you propose to access it?

5.3 Does the group envisage further projects? If so what?

5.4 What would be the most helpful thing which support organizations could do now to help you further renewable energy/energy efficiency plans?

Thank you for your time to complete this questionnaire. We will be report back to all groups who took part with an assessment of our findings from the survey.

7 Appendix B

Questionnaire to Community Councils undertaken by Fraser Wallace for Scottish Borders Council.

Answers would be most appreciated as yes or no, other than the red sections, where selecting from the highlighted section through leaving the desired option, whilst deleting the options that do not represent your opinion. Many thanks

Community Council name:

Renewable technologies:

Have you heard of wind turbines?

Have you heard of small scale hydropower systems?

Have you heard of solar photovoltaic cells?

Have you heard of solar water-heating panels?

Have you heard of ground-source heat pumps?

Have you heard of woodchip burning stoves?

Would you consider any of the above technologies appropriate on a local level for your community? Yes/No, if yes what option? :

Have you heard of Community energy Scotland (CARES)?

Have you heard of the Climate challenge fund?

Have you heard of the energy saving trust?

Have you heard of the power down network?

Have you heard of SCHRI?

Are there any groups, other than the Community Council, within the community trying to forwards any energy saving or renewable energy projects?

Is your community interested in reducing carbon emissions

Is there in the community interest in developing a renewable energy project?

If the community has considered the installation of a renewable energy project, then what would you consider to be the principle block to progress:

Lack of volunteer time

Cost of hiring professional help

Cost of installation

Is your community aware of any other communities that have installed any form of system in the Scottish Borders?

Are you aware of any small-scale attempts to utilise renewable energy on a local level being developed by any other organisations?

Are you aware of any historic means of utilising renewable energy, for example, are there any mill lades nearby?