SCHRI CASE STUDY – householder projects

Gatehouse Solar Scheme

(South West Scotland)

Introduction

Fourteen properties around Gatehouse-of-Fleet have been fitted with high quality solar water heating systems and a new installation team trained as part of a pilot scheme.

A member of The Gatehouse Development Initiative contacted the Energy Agency after reading an article on the launch of Scottish Community & Householder Renewables Initiative. A meeting was held to discuss ways in which the community could take advantage of it. After consideration of the available resources and demand for the various renewable energy sources in the neighbourhood, it was concluded that domestic solar systems and small-scale wind turbines would be the most appropriate.

Aims & Objectives

The Energy Agency recognised this opportunity to test the potential for a co-ordinated bulk purchase scheme which may be replicable elsewhere in Scotland and beyond. As the demand for solar systems appears to be dampened by a lack of local suppliers, a scheme could also provide an effective way to train up new installers quickly. It was also considered likely that take up would be increased not only by the offer of discounted bulk pricing, but also by the raising of awareness due to the publicity and concentration of activity involved.

The objectives were to:

1) promote and increase the use of renewable energy technology around Gatehouse, helping both its economy and the environment;
2) facilitate the procurement process for the local people;
3) achieve improved value for money and quality of service for those involved;
4) train a new installer team so that the service can be provided locally in future;
5) learn lessons regarding the planning and procurement process to assist similar future schemes.

Who was involved?

Gatehouse Development Initiative	Promoter
Energy Agency (SW Scotland's Energy Efficiency Advice Centre)	Adviser
Secon Solar Ltd	Mentor/Supplier
J Kennedy Gas Services Ltd	Installer

The approach

1) Flyer requesting expressions of interest from community;
2) Respondents sent questionnaires to confirm feasibility;
3) Local heating engineers invited to take part and receive training;
4) Tenders for 'contract' invited from suppliers prepared to act as mentor;
5) Respondents to questionnaire invited to presentation where guide prices given;
6) Requests for free house surveys invited;
7) House surveys carried out by mentor and installer;
8) Quotations provided;
9) Grant applications processed and planning permission obtained where applicable;
10) Installations carried out;
11) Publicity arranged and case study produced.

Initially a 'flyer' was distributed around the whole community of around 400 households along with the periodical Gatehouse Development Initiative newsletter giving brief notes about the costs and benefits of solar water heating and asking for expressions of interest in a bulk purchase scheme.

There were over forty respondents, representing a response rate exceeding 10%. This suggested that arranging a scheme would be worthwhile. Three local heating engineers who had previously indicated that they were prepared to invest resources in becoming solar installers, were invited to take part on the basis that they would quote for their time, assuming time taken for each job NOT making allowance for their initial inexperience, and add the cost of the equipment supplied by the mentor without mark up. They would pay an hourly rate plus expenses for the mentor's supervision. Two firms took up the offer, although one later withdrew due to time pressures.

Four installers already accredited by Building Research Establishment under the Scottish Community & Householder Renewables Initiative grant scheme were invited to submit tenders for supply of standard kits including one pressurised, one drain-back and one evacuated tube system.

Secon Solar Ltd of Sunderland were chosen for reasons including their experience partaking in the BRE mentoring scheme in England under the Clear Skies programme and their specialisation as suppliers of a broad range of components to the solar industry. Secon obtained significant bulk purchase reductions from three manufacturers of accredited equipment; Steibel Eltron, AES and Riomay.

The respondents to the GDI flyer were sent a questionnaire, devised by the Energy Agency invited to an open presentation in Gatehouse in May 2004, after which 24 householders expressed an interest in installing solar systems, requesting free property surveys. Over the following few weeks the installers, J Kennedy Gas Services Ltd of Darvel, East Ayrshire, were trained in carrying out these surveys and they and Secon Solar co-ordinated the despatch of quotes. 14 were accepted. Ten were not, for reasons not yet ascertained.

Results

Following various delays for holidays and backlogs of other work, the installations were scheduled for March 2005. They were completed in an average of 2 days each. All comments from recipients have been positive, both in terms of the service provided and the effectiveness of the systems. Standard installed systems cost less than £1,750 after the grant, including the reduced VAT of 5%.

In addition to the bulk discount advantage obtained under the scheme, and therefore the improved take up, the clearest benefit of the scheme was that any teething problems or snagging issues with the installations were able to be quickly and easily dealt with as the installers were in the area for an extended period. Secondly, the new installers received a huge amount of experience in a short space of time, including much more under the supervision of the mentor compared to the normal situation where they would be assisted with two installations only. This resulted in a high quality of work to the benefit of both the customers and the installers.

Several of the systems were incorporated into solid fuel heating systems which involved some extra fittings at extra cost. Whilst these systems have less sophisticated control mechanisms, the users report with satisfaction that the houses are warmer in the evenings because less of the heat from the stove or range was being absorbed in heating the water.

The accumulated savings from the 14 systems could amount to 7 tonnes of CO_2 and £2,100 per annum, based on reasonable assumptions. The average simple payback period should be in the region of 12 years, BUT as oil, coal, electricity and gas prices are likely to rise significantly over that time the actual payback should be shorter, and significant boiler servicing costs could also be saved.

Lessons Learned

Make sure that the public presentation is carefully arranged and properly publicised. This is a critical element in the process and people are much more likely to sign up if they are able to attend the presentation. In this case, most of those who attended did proceed at least to survey but it was thought that many who did not make it might well have done so as well.

Although one installer dropped out ostensibly due to lack of time, it was proving awkward to divide the work in a way which seemed transparently fair and it is recommended that a single installer be used unless the numbers are large such that they could not cope on their own.

Advice to other groups – Do not underestimate the time involved in seeing through each stage of such a scheme as so many parties are involved and their workloads and holidays are never synchronised. Allow at least a year for the scheme to run it's course.

The conclusion is that this scheme is replicable and could be effectively improved if additional funding could be 'levered' in and other benefits, such as subsidised energy-efficiency measures, incorporated.

Further information

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A typical internal installation

A standard (above) and a large size installation (below)