SCHRI CASE STUDY

Samye Ling Solar Water Installations
(South West Scotland)

Grant applicant – Rokpa Trust

Introduction

Kagyu Samye Ling Buddhist Monastery and Tibetan Centre was established in 1967 and is the first and largest of its kind in the West. It is located in a peaceful valley on the banks of the river Esk among the scenic rolling hills of the Scottish borders. As well as a centre of Buddhist wisdom and learning, and offering the highest standards of Buddhist teachings, it is also a centre for the preservation of Tibetan Buddhism, arts, medicine and culture.

The Samye Ling centre receives at least 25,000 visitors each year including 2,000-2,500 school children and groups of teachers. The trust has made it a priority for the centre to become carbon-neutral in respect of its energy use as soon as possible, being currently powered by oil, LPG and electricity. A capital grant has been awarded by Leader+ in respect of its Eco-Village Project involving the creation of a renewable energy centre – a new building incorporating a variety of renewable energy systems as an educational and interpretation resource to explain the uses of biomass, solar and, if feasible, wind and hydro systems around the centre. There are plans for a significant building programme which is likely to involve a wood chip district heating system but the first phase is the solar water systems.

Aims & Objectives

To displace oil use by installing solar thermal water heating to serve the three larger accommodation blocks and the campsite was the main objective behind the project. These are busiest in the summer months and the hot water use is substantial. The systems were designed to make maximum use of the available roof area and space for hot water storage.

This combined with the installation of 2 new condensing boilers to compliment the system should ensure a highly energy-efficient hot water system.

The solar Installations were identified as one of the easiest renewable energy alternatives that could be installed quickly and produce immediate results in reducing the emission of Carbon at the Centre

Who was involved?

Rokpa Trust	Promoter/Funder
Energy Agency (SW Scotland's Energy Efficiency Advice Centre)	Adviser
Secon Solar	Supplier & Installer
Energy Saving Trust	Funder
Johnston & Clark Ltd	Boiler Installers
Private Donor	Funder

The approach

Initially Rokpa Trust considered, with the assistance of the local SCHRI Development Officer, the main sustainable hot water options open to them. It was apparent that 3 of the buildings on-site could easily accommodate the efficient placement of Solar Panels.

With the help of the local SCHRI officer we received suitable quotations for the installation of the solar panels from 3 registered solar panel installers. We were able to pick the best installer and again received help in applying for and receiving funding from the SCHRI capital projects fund and also a substantial amount was offered to the project from a private donor. Rokpa Trust also contributed substantially by investing in the project for the supply of the 2 new oil-fired boilers and accompanying works.

Secon Solar were chosen to supply and install the Solar Hot water systems and Johnstone & Clark were employed to supply, fit and commission the new boilers.

Results

The system was installed and commissioned in March 2007 and we hope to see substantial saving in both cost and energy usage throughout these buildings. We will constantly monitor the project and have an accurate measurement of the efficacy of these panels in combating the CO2 emissions at the centre.

The total installed cost of the 55m^2 of solar systems was £34,290 plus VAT. Some additional building work was required to accommodate the new hot water storage cylinders, the total storage capacity being much greater than before. The expected carbon dioxide savings are estimated to be 6.53 tonnes per year assuming 500kWh of heat energy per year per square metre of panel, displacing a mixture of LPG and oil..

Lessons Learned

With any job of this nature, even with the greatest of planning strategies, slight problems arise during the period of the installation. This job has been no exception and some of the crossover elements between the solar installers and the heating engineers were not as strictly defined as they could have been but, as with all jobs, good and effective communication between the parties involved, along with a high degree of reasonableness and a wish to help, overcame any potential difficulties.

For further information..

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The Solar panels on Johnstone House. Two more systems are in the 'valley' beyond the front roof ridge.

The Solar Panels on Potala House

The Solar Panels on Tashi Deleg House

More Solar Panels on Potala House