



Stroud District

Target 2050

Countdown to a low carbon community

THE **CHEERS** Programme 2007-2009

Community **H**all Energy **E**fficiency and **R**enewables **S**cheme



ABOUT CHEERS

Over a two year period, Stroud District Council has offered a programme of support to help community buildings become more energy efficient, under the community strand of the broader Target 2050 initiative. The Community Halls Energy Efficiency and Renewables Scheme (CHEERS) has assisted 31 sites since it launched in the spring of 2007.

By working in partnership with Severn Wye Energy Agency, CHEERS makes it simpler, and more cost effective, for village halls and other community organisations to answer their energy efficiency queries. The project has helped these sites to:

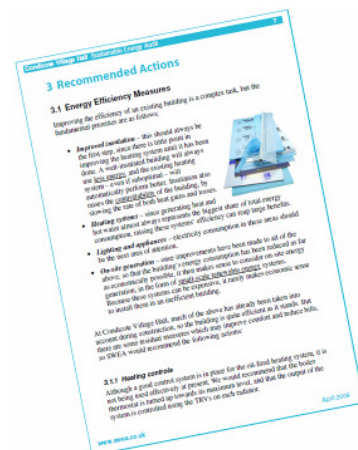
- save money on energy bills for the long term
- reduce CO₂ emissions that contribute towards global warming
- create a better environment, both inside and out, for local people, raising the appeal of the buildings
- access funding opportunities to undertake suggested energy efficiency project work

OVERVIEW

The launch of CHEERS saw community halls invited to apply for free comprehensive energy audits, and the first round of these was carried out during summer 2007.

Visits were followed up by a written report, describing the building's fabric and services, and listing a series of recommendations with full descriptions. These included no-cost options (e.g. better use of heating controls), low-cost steps (e.g. draught-proofing) and more involved measures requiring capital funding (e.g. glazing or new boilers).

Halls were not left to implement the improvements on their own; rather, an ongoing relationship was established with follow-up technical and funding support provided by SWEA.



The other key component of CHEERS was the grant funding pot. Funding from local and national bodies can be difficult to secure without existing ‘match’ funding: for community halls run on shoestring budgets, this is a major problem. CHEERS grant funding from Stroud District Council acted as a catalyst to lever in further grants, enabling projects that might otherwise have proved impossible.

The grant fund was managed by SDC in the first year, and by SWEA in the second year. Well over £100,000 will have been invested by SDC over the course of the programme, with grants offered to a range of sites from the first and second year of CHEERS, as well from the Cam Energy Project group.



Standish Village Hall—historic community buildings need help to become more sustainable

SITES—YEAR 1

The following community buildings were assisted during the first year of CHEERS:

- Bisley Village Hall
- Kings Stanley Village Hall
- Leonard Stanley Village Hall
- Miserden Village Hall
- Randwick Village Hall
- Berkeley Town Hall
- Painswick Gateway
- Painswick Centre
- Rodborough Community Hall
- Cranham Village Hall
- Sharpness Village Hall
- Minchinhampton Market House
- Amberley Parish Rooms
- Maypole Hall, Paganhill
- Cashes Green Youth & Community Centre
- Slimbridge Village Hall
- Bisley Sports Pavilion
- Sheepscombe Village Hall
- Douglas Morley Hall, Stonehouse
- Standish Village Hall
- Kingshill House, Dursley
- Stinchcombe Village Hall
- The Exchange, Stroud
- Dursley Market House
- Coaley Village Hall
- Bussage Village Hall
- Christ Church Nailsworth
- Whitminster Pavilion
- Brookthorpe Village Hall
- Trinity Rooms, Stroud
- Canon Park Pavilion, Berkeley

SITES—YEAR 2

The community buildings opposite were assisted during the second year of CHEERS:

CHEERS SUCCESS STORIES

The biggest success story from the first year of CHEERS is Randwick Village Hall. This is a 1950s building that was in a poor state of repair, with poorly-insulated building fabric, leaky metal-framed windows and all-electric heating. Following the survey in September 2007, a wide-ranging set of recommendations was made.



Randwick—before the renovation

Thanks to the vision and hard work of the hall's committee, a total transformation of the site has been achieved. The hall was re-launched in September 2008 via a public event showcasing sustainable energy and green living.



Randwick Village Hall now features a 17kW ground source heat pump, which silently collects low-grade heat from the playing fields, upgrades it, and circulates it within the building. Heat is delivered by highly-controllable low-

temperature fan-assisted radiators, and the heat pump also provides hot water for the showers.

Heat pumps are very efficient electricity users, but to further improve its environmental credentials, Randwick Village Hall also has a 5kW solar photovoltaic system on the roof. This is projected to generate as much clean electricity as the building consumes over a year—including the heat pump, lighting and kitchen appliances. The building has also enjoyed a full internal renovation.



An ever larger 12 kW solar PV system has recently been installed at **Cam Memorial Hall**. This will generate over 10,000 units of electricity per year—enough for almost 3 households—and the huge array of shimmering panels is worth a visit if you're in the area.

The Randwick project received £35,000 of investment through CHEERS, but this funding helped to lever in more than the same again—an additional £36,000 from the Low Carbon Buildings Programme, Gloucestershire Environmental Trust and the Parish Council. Lifetime carbon savings are estimated at 126 tonnes of CO₂.

Miserden Village Hall demonstrates the significance of smaller-scale improvements. The attractive, historic stone building was able to install discreet secondary glazing, along with all-new loft insulation to current standards, thanks to a modest CHEERS grant of £2,300, which again brought in additional funding. These measures have made the building far more comfortable, and will save 5.4 tonnes of CO₂ over 25 years.

Of the 20 sites surveyed in Year 2, at least half are now actively involved in carrying out improvement works. Some sites are undertaking major renovation and change-of-use projects, which will take some time to complete, but CHEERS has helped them to get underway.

The first greatly-improved site is **Cashes Green Youth & Community Centre**, an under-utilised 1960s building. The centre was in peril due to the complete failure of its 40-year old heating system. The CHEERS team stepped in, and, working with the committee and local councillors, helped to specify a replacement heating and hot water system, based around a high-efficiency gas boiler, zoned heat distribution and advanced controls. A CHEERS grant was critical in assembling funding for this, and works now continue with a view to fully insulating the building to modern standards.



The Exchange Social Enterprise Centre in Stroud also received a CHEERS survey. This identified crucial energy-related measures for the former school building, which is undergoing a major renovation. On completion, it will feature a ground source heat pump linked to 3 vertical boreholes, solar water heating for the kitchen and toilets, and solar PV panels on the roof.

TECHNICAL MEASURES

As illustrated, CHEERS funding has been directed to a range of energy efficiency measures including wall insulation and dry lining, secondary and double glazing, high-efficiency gas-fired central heating systems, low energy lighting and air source heat pumps. In assessing the priority of measures, SWEA uses its sustainable energy hierarchy:

1. **Building fabric** – addressing this should always be the first step, since there is rarely sense in improving the heating system until it has been done. A well-insulated and draught-proofed building will always use less energy. Insulation also raises controllability, by slowing the rate of both heat gains and losses.
2. **Heating systems** – since generating heat and hot water almost always represents the biggest share of total energy consumption, raising these systems' efficiency, including enhancements to control systems, can reap large benefits.
3. **Lighting and appliances** – electricity consumption in these areas should be the next area of attention.



4. **On-site generation** – once improvements have been made to all of the above, so that the building's energy consumption has been reduced as far as economically possible, it then makes sense to consider on-site energy generation, in the form of small-scale renewable energy systems—these are described below.

RENEWABLES

Renewable microgeneration is very much within the remit of CHEERS, and as illustrated above, the scheme has already resulted in the installation of various renewable energy systems. In the 2008/09 round, suitable sites were identified for all of the following technologies:

- Ground and air source (air-to-air) heat pumps
- Solar photovoltaics—several suitable sites
- Solar thermal hot water
- Wind turbines
- Biomass (wood chip) heating

Some of the CHEERS renewables projects remain at an early stage, and SWEA will continue to provide advice and support as they progress. Fact sheets and case studies covering all of the above technologies are available from the SWEA web site at www.swea.co.uk

COMMUNITY MEETINGS

During the course of the CHEERS programmes, several community meetings were held, in order to communicate both the CHEERS work and the broader sustainable energy messages to local people. One such meeting in Sheepscombe explored various options for community-level energy generation, and resulted in a wide-ranging discussion on the future of energy conservation in both community and domestic scenarios.



PROGRAMME IMPACT

The outcomes of CHEERS can be measured in two main ways: cost savings and carbon savings, in terms of direct and indirect reduction in CO₂ emissions over the lifetime of the measures installed. These can be difficult to measure accurately, since they depend on many unknown quantities that will vary over the lifetime of the measures to be installed.

In particular, tangible benefits such as improved comfort and appeal of village halls cannot directly be measured in financial terms, but they will lead to increased utilisation and higher revenues, putting halls on a more sound footing in the future.

The total spending by Stroud District Council on the CHEERS programme was **£145k**, of which the majority (£105k) comprised the capital grant fund over both years.

The carbon calculations require a degree of judgement, since estimates have to be made with regard to changing usage patterns of community halls, variability in the output of new heating systems, and filling in for incomplete data. But after a thorough analysis of measures from both years, the results are expected to be as shown below.

These figures account for measures that are known to have been installed to-date, and presumes the eventual installation of all funded and other recommended measures at each site.

PROJECT TOTALS	5,473	£377,756	1,632	£54,219	£431,975
Lifetime savings	MWh	savings	tonnes CO2	SCC	TOTAL incl SCC

Note—SCC is the social cost of carbon. In its adjusted form, this is termed the shadow price of carbon (SPC), and is a mechanism for accounting for the *future* economic costs to society from the damage caused by carbon emissions released *today*. The SPC can be described as ‘the net present value of climate change impacts over the next 100 years of one additional tonne of carbon emitted to the atmosphere today’ (Social Costs Carbon Review Final Report, AEAT Nov 2005).

The UK government recently released guidance on the SPC stating that emissions in 2009 should use the figure of £27 per tonne of CO₂, increasing at 2% per annum.

Excluding the proposed solar photovoltaic systems for the year 2 sites, the carbon savings reduce to **1,182** tonnes, with the project total at **1,459** tonnes for both years.

KEY PEOPLE IN CHEERS

Stroud District Council

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