

Simply Solar

Kirklees Energy Service, United Kingdom

Summary

Simply Solar, primarily funded by the Energy Saving Trust, was developed through a partnership comprising of Kirklees Metropolitan Council, Calderdale Metropolitan Borough Council, Hebden Bridge Alternative Technology Centre and Kirklees Energy Service, who co-ordinated and managed the scheme. The scheme aimed to reduce CO₂ emissions by offering professionally installed (via a developed solar installer network) and 'Do It Yourself' (DIY) solar water heating systems at set, discounted prices, with additional grants, to domestic householders in Kirklees and Calderdale, after viability testing through a feasibility study. Although Simply Solar did not achieve their target number of installations, in comparison to other solar schemes run in the UK it did exceedingly well and the systems installed caused reductions in CO₂ emissions, thereby assisting local authorities to achieve commitments towards energy conservation. Moreover, Simply Solar created an environment where solar energy was affordable and normal and achieved financial savings (utility bills) for householders. Successful replication involves focussing marketing on environmental and fuel bill savings and maintaining prices at a realistic level to give installers and suppliers financial reinforcement for their involvement.

End-user area	Target Audience	Technical
New buildings	Citizens	Energy efficiency
Refurbishment of buildings	Households	Heating
Transport and mobility	Property owners	Cooling
Financial instruments	Schools and universities	Appliances
Industry	Decision makers	Lighting
Legal initiatives (municipal regulations, directives, etc)	Local and regional authorities	CHP
Planning issues	Transport companies	District Heating
Sustainable communities	Utilities	Solar energy
User behaviour	ESCOs	Biomass
Education	Architects and engineers	Wind
Other	Financial institutions	Geothermal
	Other	Hydro power
		Other

Context

Simply Solar was run in the Kirklees and Calderdale districts, which have a combined population of 582,271, and are situated in West Yorkshire, England. The stimulation of solar hot water heating for the domestic sector assists local authorities to achieve policies and commitments towards the achievement of energy conservation. The Friends of the Earth Climate Resolution was signed in 1996, committing the authorities to a target of a 30% reduction in CO₂ emissions within this geographical area, from a 1990 baseline by 2005. Approximately 61.5% of the working population in Kirklees and Calderdale are employed, earning an average of £16,092 per annum. It is assumed that a

discounted pricing structure would substantially increase the level of installation of solar water heating in the Kirklees and Calderdale areas. Installation of a complete system equates to a reduction in a resident's domestic hot water bill of approximately 50% by displacing up to 1,700 kWh of gas (the dominant domestic heating fuel) and a saving of 0.44 tonnes of CO₂ per installation per year.

Objectives

Simply Solar aimed to create an environment in which solar water heating was desirable and affordable within domestic households in Kirklees and Calderdale, effectively making it a normal, acceptable and attainable aspiration. By doing so, Simply Solar aimed to reduce CO₂ emissions, thereby assisting local authorities to achieve the Friends of the Earth Climate Resolution and other policies and commitments towards the achievement of energy conservation. The following strategies were used to meet this objective:

- ❑ The promotion of renewable energy, raising awareness of energy efficiency and the importance of, and opportunities for, sustainable energy use.
- ❑ Development of a local quality assured Solar Installer.
- ❑ Providing the householder with information on potential fuel cost savings and CO₂ savings.
- ❑ Offering the householder a free survey and a no obligation quote.
- ❑ Offering householders a discounted pricing structure and grants towards the cost of installation.

Process

Simply Solar's method entailed a feasibility study and subsequently, implementation of the scheme.

Feasibility Study

The feasibility study was designed to provide an understanding of the general public's attitudes towards solar water heating systems, to gauge the level of interest and to identify those who were most likely to install such measures, whether it is a particular market segment or a personal characteristic.

Implementation

Householders accessed the Simply Solar scheme by contacting Kirklees Energy Services (KES) on a freephone number. Upon accessing KES, the caller's details were taken, the scheme was explained and a complete energy survey (either phone or post) was completed to determine eligibility. To be eligible, householders' houses needed to; have loft and cavity wall insulation; to face between southeast and southwest, or have a flat roof, or be on a suitable location on the ground level; and have an appropriate heating system, either an immersion heater and a hot water cylinder or a gas boiler and cylinder. Householders who did not have these insulations or hot water systems were eligible to receive cash back if they implemented them (under KES' 'CAKES'/'WYSE' scheme).

Simply Solar offered householders professional and 'Do It Yourself' (DIY) installed flat plate solar water heating systems. Householders were informed of the entire cost of purchasing and installing these systems; the basic solar system equipment was purchased as a kit or as a partially pre-assembled unit, the respective costs being €1449.42 and €1520.47. The maximum installation costs for these systems were €888.14 and €817.07 respectively.

To make solar water heating financially viable and thus more appealing to householders, KES negotiated discounted, fixed prices and stringent quality standards for solar water heating systems with suppliers and installers via tender adverts in the local newspaper. The Contract was awarded to

appropriate, registered installers and suppliers, who attended partnership meetings to discuss the delivery of the scheme. Installers also attended KES energy efficiency training.

Details of householders who chose a professional installation were passed onto a Simply Solar registered installer, who contacted them within 4 working days to make an appointment to survey the property. A quote was then provided to the customer and KES (the grant amount was highlighted) and an installation date arranged on the agreement of the customer. If installation required extra charges (i.e. due to difficult access), the installer had to seek approval from KES. Upon completion, the installer informed KES, invoiced the householder and, upon payment, installers received a €994 grant. Customer satisfaction was measured through KES monitoring works (tracking), performing quality inspections and arranging for any necessary corrections.

Details of householders who chose a DIY installation were passed on to the Solar Club (run by Hebden Bridge Alternative Technology Centre), who carried out an inspection. If suitable (KES were informed of suitability), the Solar Club arranged for the householder to attend a training day, after which the householder purchased a solar system from AES or Filsol who provided a receipt to the householder and copies to KES. After installation, the Solar Club carried out an inspection to ensure that any necessary corrections were made and informed KES on completion. The householder then received a €853 grant from KES.

The scheme was launched by a local BBC weather presenter taking a Solar Shower in the local shopping plaza. The promotional campaign included; articles in local newspapers, including the press being invited to the first installation on National Sun Day; radio interviews prior to the launch; logo creation; road shows; a website; DIY information evenings; information leaflets placed in local buildings; adverts; a competition to win a Solar Hot Water System; mail shot of 19,446 leaflets and an advertising campaign on local buses.

Problems identified early in the scheme included; the time taken by installers to survey unsuitable properties (due to the incompatibility of some boilers) and the rules regarding property orientation. Re-training staff to ask specific questions to eliminate unsuitable properties at the enquiry stage overcame this. In addition, the Marketing Campaign, although generating a significant number of enquiries, was not attracting householders that were sure they wanted Solar Power. To rectify this, the savings available on fuel bills and the environment were added to the primary marketing message.

Financial resources and partners

Simply Solar was a Partnership comprising of Kirklees Metropolitan Council (KMC), Calderdale Metropolitan Borough Council (CMBC), the Solar System manufacturers AES and Filsol, Hebden Bridge Alternative Technology Centre (HBATC) (who run the Solar Club) and KES. KMC implemented the scheme, while KES managed, monitored marketed and delivered the scheme.

Initial funding of €127,800 was obtained from the Energy Saving Trust's carbon pilot programme and €120,700 from KMC and CMBC. Energy for Sustainable Development was appointed to carry out the feasibility study at a cost of €17,052, KES were awarded a Management Fee of €18,473 and the Solar Club (run by the HBATC) a management fee of €2,842. A further €82,360 was used for marketing, monitoring and training. This left a total of €127,773 for grants. It was expected that householder contributions would amount to approximately €285,136.

Results

Feasibility Study

The feasibility study indicated a large potential market for solar water heating systems, 20% of people would consider buying systems when the target price was offered at a 40% discount (approximately €1421.00). Such interest suggested a relatively realistic opportunity of reaching the sales target of 0.7% of the potential market.

Implementation

Table 1 displays the household take up and Installation type through Simply Solar. All measures installed were solar water heating systems (flat plate).

Table 1 Household Take up & Installation type

	Installation Type	2001-2002	2002-2003	Total
Kirklees	Professional	46	33	85
	DIY	4	2	
Calderdale	Professional	8	9	25
	DIY	2	5	
	Total	60	49	109

Note: 2003 figures only up until 14/09/03.

Table 1 shows that 109 solar water heating systems were installed through Simply Solar, with 96 professional installations and 13 DIY. In the first year of implementation 60 installations were installed and 49 were installed in the second year. Although the scheme achieved just above half its target of 200 installations, the scheme did achieve its target of establishing a scheme with an affordable product, a network of local installers and has helped to make solar power a more acceptable and attainable aspiration in these areas. Moreover, follow-up customer satisfaction/ health questionnaires had a 60% response rate, 96% of which were satisfied with the work completed. Table 2 displays the savings achieved through the installation of solar water heating systems.

Table 2 Savings achieved through Installation of Solar Energy

	kWh Saved (pa)	€ Saved (Kwh saved x €0.046) ¹	CO2 Savings (kg/ pa)
2001	132, 936	€6, 115	25, 313
2002	69, 644	€3, 204	13, 456
2003	16, 416	€755	3, 114
	Total	Lifetime	1047.075
		tCO2 Savings	

Note: Results for kWh saved and CO2 savings were calculated from HEED database calculations.

Note: Figures only up until 14/09/03.

¹ This figure (€0.046) was calculated from a representative sample of households who had energy efficient measures installed. Wherein, 5% used electricity, 95% used gas, and gas prices were at €0.043 and electricity at €0.107.

Table 2 shows CO₂ savings of 1047.075 tonnes over the 20-year lifetime of the installations combined and a saving of €10,074 to date. These savings do not include the effects of other associated energy efficiency measures, for example loft and cavity insulation, which, as we have seen in other schemes, are quite substantial. The CO₂ emission savings caused by installing solar water heating systems through Simply Solar have assisted local authorities to achieve the Friends of the Earth Climate Resolution and other policies and commitments towards their achievement of energy conservation.

In addition to achieving the above, Simply Solar has increased the thermal comfort of householders by encouraging the uptake of other energy efficiency measures in order to be eligible for a Simply Solar Grant (insulation and heating systems). Together with the €28 per year saved through the installation of solar water heating systems, this has had a positive effect on householders' disposable income. Alongside this, awareness of energy efficiency and renewable energy has been raised by this scheme.

Lessons learned and repeatability

Simply Solar was very successful, fulfilled most of its objectives and had many positive aspects in its implementation. Firstly, Simply Solar was developed by an established, successful and solid partnership that existed between the two local authorities and the managing agent. Secondly, the introduction of suppliers and installers with similar goals in mind meant that the overall objective of everyone involved in the scheme was the same. Thirdly, scheme accessibility was furthered by; fixed and discounted installer and supplier prices (alongside grants); offering installation by approved and registered installers and having organisations (KES and The Solar Club) to provide reliable, detailed and quality energy efficiency advice. The success of the implementation of the scheme has led to a Yorkshire Forward funded post within Calderdale of a Solar Development Officer to promote the uptake of both Photovoltaics and Solar Thermal in the domestic market and the community.

Key lessons learnt and issues raised by the scheme include:

- ❑ A lot of time was taken by installers to survey unsuitable properties due to the incompatibility of some boilers and the rules regarding property orientation. Re-training staff to ask specific questions to eliminate unsuitable properties at the enquiry stage overcame this.
- ❑ Targeting households with a lot of disposable income and focussing on the cost of the system was not necessarily effective. The majority of participants were interested from an energy saving point of view and a reduction in fuel bills. Therefore, the savings available on fuel bills and the environment were added to the primary marketing message.
- ❑ Adverts in the local press and a leaflet mail shot were not economic or successful methods of marketing. Human-interest stories attracted a far greater response.

Further, the target number of installations for Simply Solar was not met, amongst other things this may have been due to; combination boilers requiring extra costs if the central heating system was not compatible; targeting households with a specific roof orientation, thereby preventing many householders from enquiring about the scheme, although they may have been willing to fund the installation of panels on an alternative site; the revenue expectations for installers and suppliers of equipment not being met, which led to some installers reducing the scheme's priority against other installation activities; and the time taken for referrals to be converted to sales was greater than anticipated.

Though Simply Solar is highly replicable, successful replication should involve following the abovementioned process, focussing on the positive aspects of implementation, and taking the key lessons learnt into account, particularly those in regards to marketing. Moreover, to be successful in today's solar thermal market installation prices need to be kept at a more realistic level in order to give installers and suppliers financial reinforcement for being involved in the scheme. Therefore, and with the introduction of 'Clear Skies'², Simply Solar has re-tendered for both suppliers and installers and has increased its prices accordingly. The Simply Solar scheme could be used by other authorities where there is funding available to offer a top up grant and by community groups, who could draw on the experience and expertise of the established installer network.

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² 'Clear Skies', a government initiative to encourage renewable energy introduced in February 2003, offers a €710 grant to householders for installing solar water heating systems.