Scaling up low carbon energy for the poor: learning from the Ashden Awards for Sustainable Energy

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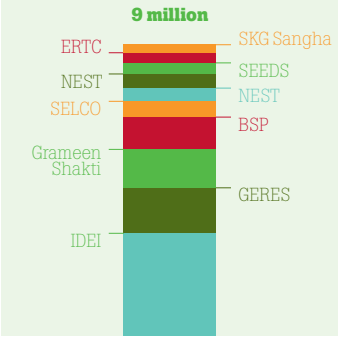
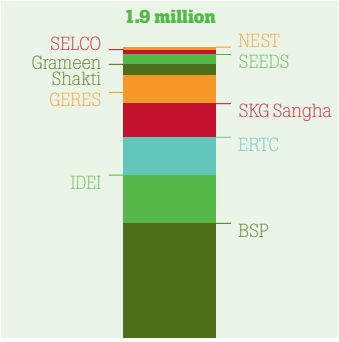
Energy plays a crucial role in improving the lives of poor people, and in underpinning efforts to achieve the Millennium Development Goals. Yet 1.6 billion people still rely on fuelwood and open fires for cooking, and two billion have no access to electricity. This paper is a summary of a review of Ashden Award-winners, commissioned by the Department for International Development (DFID) and carried out by the International Institute for Environment and Development (IIED). It has shown the potential for small and medium enterprises (SMEs), both for-profit and not-for-profit, to provide low-carbon energy access (LCEA) to poor households at significant scale, using improved stoves, biogas systems, solar home electrical systems, lanterns, water pumps, and better-built homes. The review highlights a number of findings and emerging themes:

Estimated number of direct beneficiaries to date



Estimated greenhouse gas savings (tonnes CO_2 per year)



Scale is achievable. The ten programmes surveyed in detail together serve more than nine million direct beneficiaries, and expect to add a further 1.7 million beneficiaries this year.

Direct benefits to the poor from low carbon energy access can be substantial. Improvements to well-being include health, education and communications. Incomes can increase through using the technology and working in the supply chain. Fuel costs can be reduced.

LCEA programmes contribute to carbon emission reduction. In total, the ten programmes save approximately 1.9 million tonnes/year of CO_2. These technologies can make an important contribution to long-term low carbon growth plans across the developing world.

Other social and environmental benefits are also delivered. These include increased resilience to the effects of climate change and fuel price increases, and avoidance of deforestation.

There are often trade-offs between different benefits. For example, SMEs face a trade-off between achieving profitability and serving poorer households. To maximise carbon reductions, middle-income rather than poor households might be targeted.

Hybrid business models have been successfully developed. The ten programmes share a social focus, but operate on a range of business models, many with 'hybrid' for-profit/not-for-profit features. New types of finance are needed to help such programmes achieve scale.

Poor households can benefit, provided affordable end-user finance is accessible. In most of the surveyed programmes, households paid most or all of the cost of the energy system or product. Examples were found where affordable end-user credit meant that the systems reached many people living on less than US$2/day.

Well-designed carbon finance is an opportunity to improve energy access. Seven programmes were already using carbon finance or negotiating deals. Many intend to use this new revenue stream as an opportunity to reach poorer customers. Carbon finance requires careful design to be more accessible to SMEs and allow them to target the poor.

Innovation and transfer of technologies and delivery mechanisms will be required for further scale-up. Despite limited finance, the surveyed programmes have been innovative in developing technologies and delivery mechanisms to bring services to the poor. Scale up of the sector needs funding for innovation and South-South transfer of successful approaches.

Development agencies, international financial institutions and national governments all have important enabling roles. Many of the programmes have benefited from support from development agencies and international financial institutions. National governments have a key role in developing policies to create an enabling environment for LCEA programmes to flourish.

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Silk worms being fed under solar lights (SELCO, India)

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Introduction

It is well known that energy plays a crucial role in improving the lives of poor people, and in underpinning efforts to achieve the Millennium Development Goals. Many programmes run by small and medium enterprises (SMEs) throughout the developing world have therefore brought improved energy services directly to households and small businesses, using low-carbon energy access (LCEA) technologies like improved stoves for cooking and solar home systems (SHS) for lighting.

But the number of people in need of energy services is enormous: 1.6 billion people still rely on fuelwood and open fires for cooking, and two billion have no access to electricity. Can these programmes reach enough people to make a significant difference? What benefits do they bring, in particular in reducing poverty? How far can they reduce carbon (greenhouse gas) emissions and thus contribute to the mitigation of climate change? And if they can achieve scale and bring real benefits, then how can more such programmes be initiated and maintained?

The Ashden Awards' for Sustainable Energy are a charity that reward and support the achievements of such programmes. The UK Department for International Development (DFID) commissioned a review of the Ashden Awards portfolio of international Award-winners, to inform its research and planning. The review was undertaken by the International Institute for the Environment and Development (IIED) in collaboration with the Ashden Awards and GVEP International (Global Village Energy Partnership).

The review was carried out by assessing the existing case-study information held by the Ashden Awards, from which ten Award-winners with clear evidence of scale were selected for detailed analysis. In-depth phone interviews were held with eight of these winners, and face-to-face interviews with two. This summary report identifies key findings and their implications. The full report is available on **www.ashdenawards.org**, along with detailed case studies and films of all Award-winners.

Definitions

Scaling up: Increasing the social, environmental and/or economic impact of a programme. For example by increasing the number of beneficiaries, increasing the impact on beneficiaries or increasing the positive environmental impact.

Small and medium enterprises (SMEs): In this review, the term SME is used to refer to the range of organisations (both for-profit and not-for-profit) that initiate, coordinate and/or implement small and medium scale local-level programmes to provide energy products and services.

Low carbon energy access (LCEA): Providing access to low carbon energy products and services.

Local masons building a biogas plant (SKG Sangha, India)

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Findings and emerging themes

1. Scale is achievable

Key information about the work of each of the ten selected SMEs is summarised in **Table A**. They are a diverse group of organisations, with a range of technologies (improved stoves, biogas systems, solar home electrical systems (SHS), solar lanterns, water pumps, and brick kilns), locations (different countries in South Asia and East Africa) and business models. Clearly there are many ways to achieve scale.

The scale is impressive. Together, the ten programmes have already reached nine million beneficiaries, all are continuing in operation, and some are expanding rapidly. They expect to add a further 1.7 million beneficiaries this year **(Table B)**.

The SMEs shared a strong social orientation and a mission to bring energy to poor people. It is striking that all of the programmes had grown over a significant length of time **(Table B)** – in seven cases over ten years or more. This has enabled the development of local expertise and supply chains, and the continuous incorporation of new approaches and ideas. Most of the programmes were led by people who had been there from the start, and the continuity of leadership and vision may have played a significant role.

2. Direct benefits to the poor from low carbon energy access can be substantial

The well-being benefits of LCEA are very significant. Those reported by the SMEs in this survey include:

- Health improvements due to reduced exposure to indoor air pollution, when switching from open fires to improved stoves or biogas stoves.
- Less risk of burns and house fires when open fires, kerosene lamps and candles are avoided.
- Opportunities for children to study in the better-quality, brighter light from SHS.
- Reduced time and drudgery for women and children, from collecting wood and cooking.
- Ability to keep in better contact with the wider world through radios and mobile phones which can be powered from even a small SHS.

Increased well-being can increase productivity, and some LCEA systems also provide direct income-generation opportunities. The IDEI treadle pumps (which increase farm income by an average of US$410 per year) and the MRHP brick-making kilns were specifically developed to increase income. Other SMEs gave examples of income generation through the ownership of SHS, including increased market sales and handicraft work, and operation of phone and battery -charging services. SKG Sangha encourages the sale of the composted residue from biogas plants to supplement income, although this is at an early stage.

The work of the SMEs themselves further supports local economies, with the greatest benefits from technologies that increase demand for local materials and create local jobs. These jobs can be in the SME itself (for example, Grameen Shakti employs 2,000 people, many of who are women who have not previously earned income), or else in the supply chain (for example, BSP works with over 60 approved biogas construction companies and 80 microfinance institutions).

Poor families spend a substantial proportion of their household income on energy, in particular kerosene for lighting, wood or charcoal for cooking, and dry-cell batteries. Once any payment for the LCEA technology is recovered from fuel cost savings, which takes between two months and four years, savings on fuel translate into extra available cash **(Table A)**.

Female technician working on a solar home system (Grameen Shakti, Bangladesh)

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continued
Findings and emerging themes

3. LCEA programmes contribute to carbon emission reduction:

All the LCEA technologies reduced carbon emissions. It is inevitably more complex to quantify the carbon savings from small-scale, domestic technologies rather than the direct 'like for like' replacement of a grid-connected coal fired power plant with grid-connected renewables. However, these savings have been estimated, particularly to qualify for carbon financing.

The greatest reduction per system **(Table C)** comes from the replacement of unsustainable fuelwood and kerosene by biogas in Nepal (4.7 tonnes/year CO_2). Improved stoves reduce, but do not eliminate, fuelwood use, so the savings which they produce are smaller. SHS and solar lanterns replace kerosene use, with more modest carbon savings per system. Note that light from SHS is brighter and better quality, so it goes beyond a 'like-for-like' replacement of kerosene lighting, but this is not reflected in the estimated emission reduction.

The estimated total carbon reduction from the ten programmes is about 1.9 million tonnes/year CO_2, or 0.2 tonnes/year per beneficiary. The total is not large in relation to the carbon reductions needed in developed countries. However, in most developing countries the *per capita* emissions are less than one tonne/year, so LCEA technologies could make a significant contribution to low-carbon growth plans.

4. Other social and environmental benefits are also delivered

This review focused particularly on the reduction of poverty and carbon emissions, but also found other benefits to both individuals and the environment from LCEA systems.

Poor people are particularly vulnerable to climate-related and other uncertainties, and LCEA technologies can help them become more resilient. For example, the main motivation for MRHP was to enable people to build more durable homes to withstand regular torrential rain. Similarly, the SHS sold by Grameen Shakti kept rural households connected to communications links when cyclone Sidr wiped out grid power across the country in 2007. LCEA programmes can also reduce vulnerability to rising fuel prices.

Reduction in unsustainable use of fuelwood is a direct benefit to the environment, protecting forests and other natural resources.

Operating a treadle pump (IDEI, India)

continued
Findings and emerging themes

5. There are often trade-offs between different benefits

The benefits identified above are real and important, to users, the environment and society. However, it is often difficult to achieve all of them. This review identified a number of potential trade-offs in the work of each SME, where achieving one benefit, or group of benefits, made it more difficult to achieve another. The most significant potential trade-offs are:

- Poverty reduction versus profits to the SME. In order to cover the higher costs of reaching poorer people, the SME makes smaller profits. This is equally relevant to for-profit SMEs (where profit gives dividends to shareholders) and not-for-profit SMEs (where 'profit' gives the opportunity for financial sustainability without grant-funding, and provides the working capital for growth or innovation).
- Reducing carbon emissions versus reaching the poorest households. In order to maximise carbon reductions, an SME might target middle-income households in order to scale up quickly. This depends on the technology. Improved stoves are an example of a technology which is affordable by the poor and can also significantly reduce carbon emissions.

These, and other trade-offs must be clearly understood when designing policies and programmes to accelerate the uptake of LCEA, so that the desired social and environmental benefits are delivered.

6. Hybrid business models have been successfully developed:

Table A summarises the key elements of the business models used. There are clearly many different ways to achieve scale. ERTC is a government agency, funded to implement the policy of bringing efficient stoves to all rural households in Eritrea. All the other SMEs combined elements of not-for-profit and for-profit operation.

- IDEI, BSP, GERES, MRHP and SEEDS are all not-for-profit organisations which, in different ways, support the supply chains of for-profit businesses which actually provide the LCEA systems. This 'umbrella' support takes different forms – product innovation and market development, training, quality control and certification, and management of loans and subsidies.
- Grameen Shakti and SKG Sangha are not-for-profit organisations offering vertically-integrated production, sales, financing and service.
- SELCO and NEST are for-profit companies with a social mission.

The types of finance currently available may not be ideal for such 'hybrid' organisations. For-profit SMEs have limited access to grants, and therefore rely on investment, either commercial or from international financial institutions (IFIs) or social investment funds. This type of finance may make SMEs less able to risk the higher costs of serving poorer customers. On the other hand, not-for-profit SMEs cannot take equity investments, and may be reluctant to risk commercial loans, so rely heavily on donor and grant funding and soft loans. Affordable loans from IFIs were instrumental in the growth of SEEDS and Grameen Shakti. There is a need to consider new types of enterprise finance to enable this 'hybrid' sector to grow.

7. Poor households can benefit, provided affordable end-user finance is accessible

Bricks fired using agricultural waste (MRHP, Tanzania)

The LCEA systems cost between a few dollars (improved stoves) and a few hundred dollars (SHS, biogas systems). For eight of the ten SMEs reviewed, the end-user households pay all or most of this cost. But how can the poorest people afford these systems and therefore reap well-being and in some cases economic benefits?

Assessing the total income of poor households is very difficult, and few SMEs have the resource to do so. However, the information that some of the surveyed SMEs provided (corroborated where possible) suggests that in some cases the SMEs are able to reach poorer households. The SMEs which are specifically targeting poor households with the cheapest technologies (treadle pumps, solar lanterns and stoves – **Table A**) report that a large proportion of their customers fall below the US$2/day poverty level. SHS and biogas plants are more expensive, and biogas has an additional restriction in that at least two cattle are needed to provide dung – so one third of rural households in Nepal cannot make use of it. However, independent evidence from Sri Lanka suggests that about 40% of the customers of SEEDS and other SHS-providers live below the US$1/day level.

A crucial factor which has made systems affordable for the poor is the availability of end-user credit, either directly through the SME or through other microfinance organisations. In most cases credit has been carefully linked to ability to pay – by setting repayments at the cost of avoided kerosene (Grameen Shakti, NEST, SEEDS and SELCO), or deferring payment until sufficient income has been earned using the pump (IDEI). In addition, payments are often collected by local agents, who can help with minor technical problems. There is an opportunity for further replication of these approaches. If LCEA programmes are to thrive, then more mechanisms must be developed to make end-user finance accessible and affordable, and tailored to the specific needs of poor households purchasing LCEA products.

8. Well-designed carbon finance is an opportunity to improve energy access

Despite their different business models, seven of the SMEs have entered or are entering the carbon finance market. Most of this is in the voluntary market: ERTC, GERES, SELCO and SKG Sangha already have contracts, and IDEI is in the process of validation. Although the statutory Clean Development Mechanism (CDM) is more complex, BSP, ERTC and Grameen Shakti all have CDM contracts or are working towards them. This high take-up suggests that carbon finance could have a significant impact in the LCEA sector.

However, as noted earlier, there is sometimes a trade-off between reducing carbon emissions and reaching the poorest households. Carbon finance might therefore encourage SMEs to target middle-income households where larger carbon benefits can be quickly achieved, rather than to prioritise the poor. It is encouraging that the socially-focused SMEs in this survey have taken a different approach, and are seeing the new carbon revenue stream as an opportunity to reduce end-user costs and thus bring energy services to poorer households.

These findings highlight the need for further research into how carbon finance can best be designed to benefit the poor. This should include more clarification of the balance of incentives between carbon emission reduction and benefits for the poor, and developing easier routes for SMEs to access carbon finance.

Assembling a solar lantern (NEST, India)

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9. Innovation and transfer of technologies and delivery mechanisms will be required for further scale-up

Innovation is a real opportunity. Although there has been much innovation globally in improved stove design, other technologies for the poor need the same focus. The SMEs in this survey have used innovative approaches to making technologies both appropriate and affordable for the poor. These include minimising system size (NEST); developing an improved stove which directly replaces conventional stoves (GERES); selling SHS to customers to run lantern-rental schemes for poorer clients (SELCO); and including cattle within a biogas loan package (SKG Sangha and Grameen Shakti).

However, SMEs have few financial and human resources for innovation, research and development. Ways of providing these need to be explored. The supply channels for existing technologies need to function better, and there are opportunities for South–South transfer of innovative technologies, applications, financial models and delivery mechanisms.

10. Development agencies, international financial institutions and national governments have important enabling roles

International financial institutions and other donors have been especially important for the continuing success of the 'umbrella' NGOs, enabling them to market products and maintain quality, at the same time as fostering individual entrepreneurship within their supply chains. Donor finance has also been important for the other not-for-profit SMEs.

National policies have had different impacts on LCEA provision by the SMEs in this review. In Nepal and Eritrea, the programmes are directly supported by national governments, and the work of GERES in Cambodia has contributed to the development of a national fuelwood policy and standards for stoves. Although government subsidies aimed at increasing access helped some SMEs in their early stages, they have sometimes been unreliable. Uncertainty in national programmes for grid expansion has been a barrier for solar SMEs, since potential customers may be reluctant to invest in SHS if grid power may arrive shortly.

National policies need to create an enabling environment for LCEA SMEs to flourish. Given the enormous number of people in need of energy services, there is plenty of opportunity for SME-led local access alongside expansion of conventional energy supplies, or other initiatives such as local electricity grids. Energy policies must be coherent in order to create an enabling environment. Economic instruments such as taxes, import tariffs and subsidies for LCEA products should be designed to support SME growth and promote fair competition.

A customer cooks with biogas (BSP, Nepal)

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Concluding remarks

This review has shown that SMEs are delivering low carbon energy access technologies at significant scale. It has also highlighted the substantial benefits that these technologies bring, including poverty reduction, improved well-being, and carbon reduction. With the right delivery mechanisms, including affordable credit, these SME-led programmes are able to reach poor households and so make an important contribution to achieving the Millennium Development Goals.

Learning from how these SMEs achieved scale can help increase energy access in other locations, for example by transferring technologies and delivery mechanisms. The full report highlights some opportunities for further research to build a deeper understanding of these successful programmes, and to develop the financial and policy environment that will be necessary for scale-up and replication.

An improved wood-stove, decorated by the owner (ERTC, Eritrea)

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Photography: Adam Brett, Sarah Butler-Sloss, David Fulford, Anne Wheldon, Martin Wright.

Table A:
The organisations, technologies and business models

Biogas Sector Partnership-Nepal (BSP-N)
Technology: Biogas systems, which digest animal dung to produce gas for cooking and lighting, replacing wood fires and kerosene lamps, mainly for individual households. Cost about US$400, households get subsidy for one third, contribute one third in-kind, and pay remainder through micro-credit.
Business model: Government-supported umbrella NGO. Gives training, technical support and certification to 60+ SMEs which provide the biogas technology and services. Funded through donors and carbon trades.

Energy Research and Training Centre, Eritrea (ERTC)
Technology: Improved domestic wood-burning stoves for baking injera (local bread), replacing wood fires, built in homes by ERTC. Cost about US$16, users contribute in-kind, ERTC subsidises the rest.
Business model: Government agency investing in public good research and training. National and sub-regional government support for expansion strategy. Negotiating GEF support based on emissions reductions.

Groupe Energies Renouvelables, Environnement et Solidarités, Cambodia (GERES)
Technology: Improved charcoal-burning stove, replacing conventional charcoal-burning stove. Stoves cost US$4, bought for cash, cost recovered within two months from savings on charcoal.
Business model: Umbrella NGO involved in product and market development, mainstreaming of technology in existing commercial stove market and ongoing quality control and support. Funded through donors and negotiating voluntary carbon trades.

Grameen Shakti, Bangladesh
Technology: Stand-alone solar home systems (SHS) using photovoltaic module to power lights and small appliances, replacing kerosene lamps and providing extra services. Cost about US$230 to 430. Households pay at least 15% deposit and remainder through micro-credit over 2–4 years.
Business model: Not-for-profit entity providing SHS. Vertically integrated from production to sales and financing. Some components manufactured outside. Provides credit to buyers through microfinance facility and subsidy. Funded through national World Bank-supported initiative, negotiating CDM carbon finance.

International Development Enterprise, India (IDEI)
Technology: Human-operated treadle pumps for irrigation, replacing diesel pumps and providing extra services. Cost about US$20 to 30. Farmers pay cash, or can have credit until one extra harvest obtained (120 days).
Business model: Umbrella NGO involved in product and market development, support to supply chain for commercial production and promotion, quality control and monitoring. Funded through donors and negotiating voluntary carbon trades.

Mwanza Rural Housing Programme, Tanzania (MRHP)
Technology: Kilns to fire bricks using crop waste, replacing wood-fired bricks, mud bricks and cement blocks. Bricks sold to households for cash.
Business model: Umbrella NGO promoting and providing training to SMEs in kiln technology; also arranges loans and provides some follow up and advice. Funded through donors.

Noble Energy Solar Technologies, India (NEST)
Technology: Portable solar lanterns, replacing kerosene lamps. Cost about US$36. 1–2 year credit offered by dealers.
Business model: Commercial in-house production of lamps; sales through network of licensed dealers. New lamp rental enterprise. Side ventures to mine and process silica.

Sarvodaya Economic Enterprise Development Services, Sri Lanka (SEEDS)
Technology: SHS to supply lights and small appliances, replacing kerosene lamps and providing additional services. Cost about US$230 to 800. Households pay at least 15% deposit and remainder through micro-credit over 1–4 years.
Business model: Not-for-profit entity. Provides micro-finance to stimulate sector development and offer access to lower income households. Funded through World Bank-supported initiative.

Solar Electric Light Company-India (SELCO)
Technology: SHS to supply lights and small appliances, replacing kerosene lamps and providing extra services. Cost about US$230 to 430. Households pay at least 15% deposit and remainder through micro-credit over 2–4 years.
Business model: Commercial SHS production and sales. Some components manufactured elsewhere. Tailors systems to customers' needs and budget and offers local service. Assists customers to obtain credit from commercial finance institutions. Employs grants, soft loans and voluntary carbon finance for innovation.

SKG Sangha, India (SKGS)
Technology: Biogas systems, which digest animal dung to produce gas for cooking, replacing wood fires, mainly for individual households. Cost about US$380, households get subsidy for about 60% and contribute the rest in-kind.
Business model: Not-for-profit domestic biogas company. Vertically integrated production, sales, financing and service. Costs kept down through on-site construction employing customers' labour. Funded through government subsidies and voluntary carbon finance.

Table B:
Achieved scale and potential of SME programmes

SME	Technology	Year started[2]	Systems to date	Estimated direct beneficiaries[3]	Current rate of supply[4]	Medium-term target
BSP–Nepal	Domestic biogas plants	1992	170,000+	1+million	16,000 plants/year	25,000 plants/year by 2010 50,000 plants/year by 2015
ERTC	Improved wood stoves	1998	60,000+	300,000	10,000/year	Provide every Eritrean household with a stove within eight years (Government policy statement)
GERES	Improved charcoal stoves	2002	380,000+	1.4 million	15,000/month	2 million stoves sold by 2012
Grameen Shakti	Solar home systems	1996	150,000+	1.2 million	5,000/month	By 2015: One million SHS, ten million improved stoves, 0.5m biogas plants
IDEI	Treadle pumps	1991	600,000+	3.17 million	40,000/year	Increase income of 250,000 small farmers by US$400/yr with treadle pumps and drip irrigation
MRHP	Crop-residue fired-bricks	1998	Bricks for ~100,000 homes	400,000	10 new producer groups/year	To continue at current rate
NEST	Solar lanterns	2001	100,000+	400,000–500,000	25,000/year	300,000 sold and sales of 100,000/year in next 3–5 years
SEEDS	Solar home systems	2001	80,000+	350,000	1,300/month	Increase sales, expansion into other renewable energy technologies
SELCO –India	Solar home systems	1995	90,000+	500,000	450–500/month	200,000 customers (for all technologies offered) by 2011
SKG Sangha	Domestic biogas plants	1993	50,000+	250,000	7,000/year	100,000 installed by 2013

[2] Indicates year that full-scale or commercial production or supply began.
[3] Direct beneficiaries are members of households directly using systems. Figures provided by enterprises, calculated as (total systems) x (average household size) / (number of systems per household) – generally one, but more for GERES improved stoves).
[4] Where very recent monthly figures are available (and sales are not affected by seasonality), these are shown; otherwise figures are for most recent year that data are available.

Table C: Estimated carbon savings

Award winner	Technology	Number in use 2008	Emission savings per system (tonnes/year CO_2)[5]	Total 2008 emission savings (tonnes/year CO_2)[6]	Source for data
BSP–Nepal	Domestic biogas plants	170,000+	4.7	813,000	Ashden Awards case study 2005, based on CDM assessment.
ERTC	Improved wood stoves	60,000+	3.95	237,000	VER verification (personal communication from ERTC)
GERES	Improved charcoal stoves	380,000+	0.43	165,000	VCU verification report for 10 May 2003 – 9 Jan 2007
Grameen Shakti	Solar home systems	150,000	0.50 per 50Wp system	68,000	CDM assessment 2008 (personal communication from Grameen Shakti)
IDEI	Treadle pumps	600,000+	0.48	290,000	Emissions savings based on TERI 2006
MRHP	Residue–fired bricks	~ 100,000 homes			Insufficient information on type of bricks avoided
NEST	Solar lanterns	100,000+	0.16	16,000	Estimate as reported from NEST
SEEDS	Solar home systems	80,000+	0.76	62,000	Estimated from 2008 kerosene savings provided by SEEDS
SELCO–India	Solar home systems	90,000+	0.29	26,000	Ashden Awards case study 2007, based on survey of kerosene use.
SKG Sangha	Domestic biogas plants	50,000+	4.0	200,000	Ashden Awards case study 2007, based on measurement of wood saving, assumed unsustainable.

[5] Emissions savings per system estimated in different ways, see final column
[6] Estimated as (emissions savings per system) x (2008 in–use number)

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GVEP International

GVEP International (Global Village Energy Partnership) is a global partnership seeking to reduce poverty through accelerated access to modern energy services, thereby increasing income generation and improving living conditions for people in rural and peri-urban areas of developing countries.

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