

CLIMATE CHANGE: Solar Energy Firm Says Carbon Credits Don't Work  
By Keya Acharya \* IPS/IFEJ

**BANGALORE, Dec 21 (IPS) - A small but successful solar energy company involved in rural electrification in India is complaining that the Kyoto Protocol's clean development mechanism (CDM) has been of no practical use to it.**

Selco (Solar Electric Light Company), winner of the 2005 - 2007 London-based Ashden Awards for outstanding achievement in sustainable energy, has found it impossible to harness any benefits from CDM, forcing it to turn to the voluntary emissions market instead.

"Since we deal with selling lighting to poor households, that really do not emit much greenhouse gases (GhGs), we found the process for selling savings on carbon emissions through the Kyoto Protocol's CDM too expensive and time-consuming for us," says Thomas Pullenkav, vice-president of Selco.

CDMs allow industrialised countries with GhG reduction commitments (called Annex 1 countries) to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries. Such projects must establish that the additional incentives, provided by emission reductions credits, are needed for the projects.

Since 2002, Selco has sold 4,500 tonnes of carbon dioxide (CO<sub>2</sub>) to Britain-based Carbon Neutral, though it has also saved roughly 28,000 tonnes of CO<sub>2</sub> equivalent per year by helping poor families scrap the use of smoke-emitting kerosene for lighting.

Selco is now helping low-income rural individuals, especially women, earn a livelihood through the company's sale of carbon emissions in the voluntary market.

Emission savings are calculated on Selco's sale of 85,000 solar lighting units, together with the average consumption of 120 litres of kerosene per family per year.

Selco began in 1994 as the brainchild of an idealistic young Indian, Harish Hande, who found, on his barefoot travels into the hinterland, that though connected to the national grid, households had very little, and sometimes practically no, lighting.

An energy engineering graduate from one of India's premier Indian Institutes of Technology with a doctorate from the University of Massachusetts, Hande says he got challenged to make solar photovoltaic (PV) energy commercially viable in rural electrification.



Solar energy has brought electricity to hundreds of thousands of thatch homes like this one in rural India with no carbon credits earned

Credit:SELCO

With help from the then Washington-based Selco International in 1994, he set up the Indian company with a demonstration package offer of three light points and one black-and-white TV plug point for Rs 16,000 (405 US dollars).

A neighbouring farmer Arvind Rai ("I'll never forget his name", says Hande), who had watched Hande's activities quietly, paid cash-down for the first unit.

The company has not looked back since.

Today, while Selco International has collapsed due to poor management, Selco India is an independent company which has sold 85,000 solar photovoltaic systems (40 watt) in the rural areas of southern Karnataka, Kerala, Andhra Pradesh and western Gujarat states

Each 40-watt solar PV unit costs approximately 420 dollars and consists of four fluorescent 7watt lamps, lighting for four hours between charges and is also suitable for TVs, radios and fans.

The system is rechargeable with a 5-year-life battery for prolonging the 4-hour usage time and is customised to cater to individual needs. Selco monitors its units through a decentralised network of employees.

The company's clients are street vendors, self-help groups, daily wage labourers and institutions like schools and seminaries.

"We have now linked these solar-units to income-generation", says Harish, explaining how his innovations team is studying the individual home as an unit to come up with different solutions for electricity needs like cooking or heating.

The majority of clients are women who have already begun earning better from the benefits of lighting, using earnings from work like tailoring, basket-making or betel-nut shelling, to pay back the loan for buying the unit.

Selco's 170-strong workforce is nearly 43 percent female.

Anne Wheldon, technical director of the Ashden Awards says that one rural woman had increased her production of 'bidis' ( hand-rolled local cigarettes) and her extra earnings were enough to cover the Rs. 300 (seven dollars) per month repayment on her loan.

The company helps the client to procure a bank loan for the amount, beginning a decade ago by persuading banks that the rural poor can actually repay loans.

"We go to people without any products to offer, look at them and then try to create appropriate products. We then sit with financial institutions to create a loan package," says Harish.

Some users work directly with the finance organisations, others work through self-help-groups which giving additional security that a loan will be repaid.

Another way in which systems have become affordable for very poor traders is through the PV battery-charging businesses. These charge the batteries during the day, and hire them to traders each night for a rental fee.

In this way the trader has to pay only for the fluorescent lamp and regular payment is brought to a more manageable daily basis.

The Ashden Award's prize-money of 100,762 dollars has been ploughed back into helping the poor obtain loans.

" Banks require at least 15 percent of the loan-amount to be paid immediately before monthly repayments begin, an amount that the rural poor do not possess. We are now using the award money to put forward that initial 15 percent for a loan," explains Pullenkav.

Selco is largely the only commercial company in India selling electricity-needs directly to rural people. Other electric companies, like Tata BP sells it units to the government's rural electrification scheme.

Shivalingaiah, managing director of Karnataka Rural Energy Development Limited (KREDL), which operates on funds disbursed by the Indian government's Ministry of New and Renewable Energies (MNRE), says they are working towards the MNRE's target of electrifying the whole of India by 2012.

Around 45 percent of households in India, mainly rural ones, do not have electricity. Others, though electrified theoretically, remain without electricity due to poor or erratic supply.

The government's calculation of 'full electrification' is also riddled with dark holes.

"Under this rural electrification scheme, a village is declared electrified if 10 percent of its households has electricity," explains Shivalingaiah. "This is an improvement to earlier times when even a pump installed was taken as electrification."

There are other problems showing the government's lack of awareness or interest in rural electrification.

" There is an absolute lack of leadership in Indian academia in this field," states Hande, offering, as example, the fact that nearly 300 interns from 'all over the world' have come to Selco to research and innovate, "but not one single one of them is Indian."

(\* This story is part of a series of features on sustainable development by IPS and IFEJ - the International Federation of Environmental Journalists.)

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