

Microfinance and Access to Energy: Major Opportunities for Sustainable Development

Providing universal access to energy is one of the major challenges of poverty reduction in the coming years. In order to mitigate climate change, sustainable solutions should be promoted from now on so that the poor get access to renewable, secure and clean sources of energy.

The RENDEV project aims to benefit from the experiences of microfinance actors in providing services to poor populations in order to develop national schemes promoting the use of renewable energies for those lacking access to the electric grid.



Woman cooking with biogas, Bangladesh

Why involve microfinance institutions?

Microfinance institutions (MFIs) have two dear objectives: **providing their members with the services they need** and **ensuring the financial sustainability** of the institution in order to continue providing services to their members. Being **beneficiary-oriented by nature**, they will promote solutions that fit the needs of their clients and remain **simple, robust and affordable**. MFIs will promote only solutions that can be sustained at the local level.

Microfinance institutions have a proven record of supporting sustainable businesses for the poor and are experienced in keeping costs low while ensuring a quality service. This experience is much needed when developing renewable energy projects for the rural poor.

The energy solutions that microfinance institutions can promote to their members are robust, individual-based systems. The proper maintenance of the system requires strong involvement by the beneficiary, both monetary as she/he contributes to the purchase of the system, and operational as she/he will be in charge of its correct operation and maintenance. Furthermore, those grassroots projects can create job opportunities at the very local level for those willing to join microfinance and renewable energy companies as well as for entrepreneurs willing to manufacture or retail the products or simply become services providers.

While major stakeholders are thinking of ways to ease the access to carbon finance for community projects, the role of Microfinance practitioners and networks such as PlaNNet Finance will be crucial in order to raise awareness about the possibilities offered by microfinance institutions in facilitating the access to clean energy for the poor.

Pascale Geslain, Head of RENDEV project and Senior Expert at PlaNNet Finance,

RENDEV is a project sponsored by the European Commission - EACI: Executive Agency for Competitiveness and Innovation formerly known as Intelligent Energy Europe Agency and Toyota Tsusho Corporation.

RENDEV aims to create the conditions of large access to Renewable Energies (REN) for rural populations such as : raising awareness of the population on possibility and affordability of REN technologies, capacities among stakeholders and private providers, accurate financial schemes. RENDEV will especially focus on possibilities of microfinance in those fields.

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SUSTAINABLE ENERGY EUROPE
2005-2008



RENDEV receives the European Union "2009 Sustainable Energy Award"

PlaNet Finance, Transenergie, IT Power and all their local partners were rewarded for their micro-finance and renewable energies project RENDEV, in the "cooperation programme" category.

The project was selected as part of the European Union 2005-2008 Renewable Energies for Europe campaign to raise decision makers' awareness and promote access to sustainable energy. The RENDEV project was picked among 250 projects in a competition rewarding local and European partnerships that had significantly contributed to the campaign goals.

According to Jacques Attali, PlaNet Finance's President and Founder, "the jury selected a project that could be perfectly adapted to other countries. More than ever, with the deep crisis the world is going through, microfinance is an essential tool for the poorest populations."



European Commissioner for Energy Andris Piebalgs (right) giving the RENDEV team the "cooperation program" prize during the Sustainable Energy Award ceremony.

Mr Dipal Barua and Grameen Shakti received the first Zayed Future Energy Prize

The first annual Zayed Future Energy Prize was awarded on January 19 by His Highness General Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, to Mr. Dipal Chandra Barua, Founding Managing Director of Grameen Shakti for his visionary efforts to bring renewable energy solutions to the rural population of Bangladesh.

Mr Barua said he would use the USD 1,5 million prize to fund a scholarship programme for women entrepreneurs

"It is my dream to create 100,000 green jobs in my country and the award will help me achieve this," he told The National before accepting the prize in a ceremony at the Abu Dhabi National Exhibition Centre, where the World Future Energy Summit started yesterday.

"We share this award with the rural people of Bangladesh who have demonstrated incredible ambition and innovation in adopting clean, renewable technologies" he declared.

Pictured at the awards ceremony are, left to right, Dr. Sultan Al Jaber, Dr Green, His Highness General Sheikh Mohammed bin Zayed Al Nahyan, Dipal Chandra Barua and Dr. RK Pachauri, Nobel Prize 2008.



Ms. Ambia receives PlaNNet Finance's International Microfinance Award in Microfinance and Energy Category

Ambia was awarded the Environment category prize at the 2008 "International Microfinance Awards". Ms. Pascale Geslain, Head of the RENDEV project and of the Microfinance and Environment business line of PlaNNet Finance, together with Mr. Dibal C. Barua, Founding Managing Director of Grameen Shakti (GS) came to meet her to personally in Bangladesh to give her the prize during a special ceremony organized in Phulpoor, Mymensing in January 2009.

Ambia is a solar technician and entrepreneur trained by GS through its rural based Grameen Technology Centers. More than 1,000 women have been trained under this program and these women are working as solar technicians to assemble, install and market solar accessories.

Overwhelmed by the recognition from PlaNNet Finance, Ambia expressed her deepest gratitude to GS for giving her the opportunity to become a Renewable Energy Technology entrepreneur. She considers this award as a very special gift and motivation for her work.

The quality of life of her whole family has improved. Her son is one of the best students in an English medium school. Her husband, who once abandoned her, has returned, and they have been blessed with a second child. Ambia powers her home with electricity from a Solar Home System providing her and her family with enough electricity to assemble solar accessories, to study and to live in a pollution-free environment.

Ambia is the daughter of a School Master from the Rupshi Village in Phulpoor, Mymensingh. When she was first abandoned by her husband she had to earn income by teaching children. She had no land or house, but lived in a room in her sister's house, built on her dead father's land. Around this time, she heard of the Grameen Technology Center in Fulphoor. She joined the fifteen day training program and learned how to assemble solar accessories as well as install, repair and maintain Solar Home Systems.

She came first in her batch of solar technicians. In recognition of her skills, GS installed a 130 watt solar panel in her home. GS also gave her tools, a bag for her tools plus a cabinet to store her equipment. That is how she became one of the first female solar entrepreneurs to set up her own home-based business to assemble solar accessories. Her business is called "**Ambia Technology Center**". Ambia sits in her tiny room that serves as both her workplace and home, assembling solar accessories. The award certificate hangs proudly from her wall.

Ambia has come a long way. Now she can dream big, set higher goals as GS continues to expand its renewable energy programs in the rural areas. Grameen Shakti has set an ambitious target of reaching 50% of Bangladeshis with renewable energy technologies by 2015. This means more business and income for Ambia.

Demand for solar and other renewable energies is increasing day by day. GS is presently installing around 8000 solar panels per month; this will double and quadruple within a few years. When rural people contact her to learn more about renewable energy technologies, she refers them to GS. That is why GS is considering giving her the responsibility for marketing, installing, and



Grameen Technologies Centers (GTC)

GTCs are training women in rural areas to assemble, maintain and install renewable energy devices.

Pioneered by the NGO Ubomus, the concept of women cooperatives developing their own qualifications in the field of energy is today promoted at the national scale by Grameen Shakti's visionary leader Dibal Barua, and Nobel Prize Winner Muhammad Yunus.

45 GTCs are running until June 2009 and Grameen Shakti plans to open 105 for 2010 to serve the whole country.

Training 12,000 microentrepreneurs and their families in Bangladesh

The Bangladeshi partners of RENDEV, respectively Grameen Shakti, PSL and Rahimafrooz solar will organize more than 350 training sessions in the country until the end of 2009 to promote renewable energy solutions to poor rural populations and raise their awareness about the possibilities and the opportunities of developing new activities they offer. Benefiting from the outstanding experience of the Bangladeshi best experts??, the training programs are specifically designed for non-literate people and place emphasis on demonstrations and practical information.



Grameen Shakti



Grameen Shakti, an organization within the Grameen Family of Companies has been working in the renewable energy sector in Bangladesh since 1996. It has installed more than 250,000 systems and brought new services to the population such as biogas. The outstanding achievements of Grameen Shakti have earned them the most famous awards in the environment field such as Zayed Prize and Ashden awards.

RENDEV will organize up to 228 training sessions throughout the Grameen Technology Centers training 5,600 end-users.

PSL

PSL

Prokaushali Sangsad Limited (PSL) was established in July, 1969 as a consultancy firm with a goal to bring together a group of engineers, architects, planners, economists and other professionals to offer services in development activities in Bangladesh.

During the past decades, PSL has successfully provided its services to a large number of government departments, autonomous bodies, corporations and non-government organizations (NGOs) and international donor agencies, developing a unique knowledge in Bangladesh on Renewable Energies.

The dedication of PSL management, Asma Huque, Hasna Kahn to the development of the women of Bangladesh has led them to set up two NGOs who are providing solar and community services: UBOMUS (6,000 systems installed) and the brand new REDI.

PSL will lead 100 sessions, training 2,500 end-users.



Rahimafrooz Solar

Rahimafrooz Solar is the company dedicated to solar energy, and part of the Bangladeshi holding Rahimafrooz. Rahimafrooz is the Bangladeshi market leader in batteries (for cars initially) and thus jumped into the solar market by designing dedicated long cycle batteries and providing them to different Bangladeshi organizations involved in renewable energies.


The commitment of Rahimafrooz towards the development of solar services for rural Bangladeshis is such that Rahimafrooz is the major funder of Rural Services Foundation (RSF) which has installed more than 25,000 Solar Home Systems so far.

Rahimafrooz will conduct 30 training sessions focused on technical issues and train 1,500 end-users.





Rendev is a project supported by

Intelligent Energy  Europe
 TOYOTA TSUSHO CORPORATION

Solar Energy Facilitating Rural Business and Development



- No more kerosene expenses or fire hazards
- Attract the customers during the night with bright light, TVs or radios
- Extended business hours in small shops, production centers such as tailoring shops, groceries, hotels, fisheries etc.
- Boost in electronic business such as TVs, mobile phones, cassette player sales.
- New business opportunities such as Community TV, Mobile Phone Shops and Internet Shops
- Micro-utility Model : One system shared by many

Microfinance and Energy : examples of projects where microfinance can be used

Solar Home Systems

Microfinance providers and major donors have demonstrated the efficiency of microfinance models allowing rural poor populations to lease Solar Home Systems for their basic lighting needs in Southern Asia: Bangladesh, India and Sri Lanka.

Providing a good quality service by ensuring a year-around maintenance, keeping the costs low by reaching a lot of clients in densely populated areas and benefiting from incentive funding schemes, microfinance institutions and their dedicated sister companies have been able to serve more than 400,000 families, 200,000 in Bangladesh only.

Product : Solar Home System Kit including a solar panel and 3 to 4 low consumption lamps.

Financial product: 2 to 3 year loan, to end-users, amount ranging from USD 300 to 500.

Main players: Grameen Shakti, BRAC, RSF (Bangladesh), SEEDS (Sri Lanka)



Biogas digesters

Biogas digesters are turning the dung of cattle into natural gas (methane) that can be used for cooking, fuelling lamps or even running electricity generators. A rural family raising a herd of cattle of four heads or more can supply to its daily needs. A biogas digester is constituted of a chamber where the dung transforms into gas. Biogas digesters are typically built with locally available material.

Microfinance providers have been successfully involved in large scale programs in Nepal to facilitate the uptake of biodigesters by farmers. Other programs are directly using microfinance schemes such as SNV's in Vietnam or Planet Finance's in China. Bangladesh's Grameen Shakti is expanding its operations to biogas by adapting its successful solar scheme.

Product: locally produced biodigester (2 to 6 m³)

Financial product: 2 to 3 year loan, to end-users, amount ranging from USD 300 to 500.



Improved cook stoves

Improved cooking stoves are an easy to implement solution to enhance the cooking habits of the hundreds of millions of people who rely on biomass for cooking. These stoves, efficiently designed and easy to produce with local materials such as clay, are consuming as much as two times less fuel than traditional cooking stoves while reducing dramatically the duration of cooking.

Unlike SHS or biogas digesters, improved cooking stoves are cheap enough to be purchased with cash. Microfinance institutions (MFIs) can be a major contributor to their distribution among poor populations by promoting their sales among their beneficiaries. Furthermore, MFIs can propose dedicated financial services to microentrepreneurs engaged in restaurant or food stall activities, who will require bigger (and more expensive) stoves.

Product : Improved cook stoves cost from USD 5 to 50.

Financial product: credits to microentrepreneurs

Main players: GERES (Cambodia), Grameen Shakti



Water pumping and water treatment

Access to water and access to energy are closely linked as pumping clean water requires energy. In areas where access to energy is scarce, the most cost-efficient option is to combine manual water pumping with innovative solar treatment of water.

Microfinance providers, and especially those who have experience in proposing energy services are ideal vectors to propose to their members to purchase these solutions on credit. Weekly meetings will be held to promote the systems and train the populations on their proper use and maintenance.

Manual water pumps can be sourced locally while innovative start ups are proposing solutions for water treatment

Product: Manual water pumps (USD 50 to 500), SOLVATTEN™ Safe Water System (USD 40)

Financial product : 1 to 3 year loan, to end-users



Energy efficiency

Informal enterprises form the true backbone of the economy of many developing countries. Those enterprises, most often family-based, are involved in a wide variety of activities beyond simple trading. Many are engaged in traditional industries which are largely contributing to pollution and consumption of energy under any forms: electricity, fossil fuels, biomass.

SME owners tend not to have access to information on technologies that are less energy-consuming, less polluting and might bring them additional profit. Even if they do, financial service providers have often overlooked them as a potential viable market. An important potential of improvements thus remains untapped.

Combining microfinance tools and appropriate technical support will facilitate the adoption of the technologies by the entrepreneurs. When the short term monetary benefits gained by the investment will be demonstrated, the conditions for a virtuous circle of investment, economic benefits and social improvements will be met.

Among the technological switches identified by PlaNet Finance and its partners, GERES, ADEME (France), ENPHO (Nepal) and The Kuyasa Fund (South Africa), some are very simple, such as promoting the use of energy-saving lighting solutions while others require a change in the method of productions. A variety of sectors can benefit from these improvements, the most promising being home-based food industry, transportation and mechanical industry.

PlaNet Finance and its partners are developing such projects in Egypt, Morocco, Nepal and South Africa.

The programs will combine technical assistance to the MFIs to develop specific financial products, setting up of training centers for the entrepreneurs and advocacy towards policy makers on the potential of SMEs and their dramatic needs of assistance.

Bangladesh, next steps: reinforcing the capacities of the actors to develop and implement new products

PlaNNet Finance's RENDEV program (2007-09) has opened a platform for discussions among the stakeholders in Bangladesh. During the last workshop organized in Dhaka on January 26th, 2009, **the partner organizations have expressed their willingness to go beyond their current achievements.** They have expressed their commitment to dedicate their structure and operations to use microcredit to promote other renewable technologies such as those that **provide clean water, cooking gas or organic fertilizers.**

PlaNNet Finance, Grameen Shakti, Rural Services Foundation and REDI have designed a comprehensive project aiming to analyze the current operations of the partners, reinforce their capacity to develop new products (technical and financial) and manage different product lines, and implement new business lines to respond to the needs of the Bangladeshi populations who are energy poor.



RENDEV National Conference in Dhaka, Bangladesh

Needs throughout the world: one example in Thailand

Thailand has undertaken a massive program of solar electrification over the last years. Within it, a solar program has electrified around 200,000 households, providing each family with a 120 Wp Solar Home System. Thus, every family can enjoy electric light at night and even run a TV set. The system was designed to ensure a correct lighting even during the dark months of the rainy season.

But, the program was a typical bad example of an install and run program. The systems were provided free of charge to the families, quite well installed so that they function well but not a single training was provided to the beneficiaries. Thus, the villagers were very surprised when they realized after a two to three year period that their light was not working anymore: the batteries had been through their usual lifetime. They could still provide a small light after a very sunny day but the villages were in the dark during the entire four months of the rainy season.

The villagers were shocked when they learned that the battery would cost them around USD 120, an amount they would never be able to afford. Thus the systems that have cost more than USD 200 million to Thai taxpayers will be useless in a few months.

A tailored revolving fund should be set up to allow the villagers to afford the batteries they need, and repay them over the years while contributing to upcoming maintenance. Calculations have estimated this monthly contribution to be around USD 4. Traditional channels should be used to ensure the fee collection at the village level while keeping the cost low. Training should also be provided to train the beneficiaries and teams of qualified technicians so that proper maintenance be ensured in the future.



RENDEV is a project sponsored by:

