Solar Home System by Grameen Shakti: more renewable energy in Bangladesh

Summary: Grameen Shakti (GS) was established in 1996 in Bangladesh as a Not-for-profit company by Nobel Laureate Prof. Its Solar Home Systems (SHS) program aims at installing 6 million SHS by 2017. GS implements the Grameen Technology Centers (GTCs) program to support the services and maintenance of SHS by training women.

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PROGRAMME
Start date: 1996
Implementation site: Bangladesh
Budget: N/C
Source and details on funding: IDCOL supported by World Bank, GIZ, USAID...

ORGANISATION(S)
Grameen Shakti
Grameen Bank Bhaban (19th étage), Mirpur -2
1216 Dhaka
http://www.gshakti.org
Employees: 7000
Volunteers: N/C

EDITORIAL COMMITTEE
Date of proofreading: 2016/07/08
Opinion of the Committee: Source of inspiration!

Solution(s): Environment, Territorial development

Participant: Association, ONG
Beneficiaries: Rural population, Women
Domain: Environment, Energy, Climate change, Essential goods

Country: Bangladesh
Stature of the programme: National

BACKGROUND TO THE PROGRAMME
Bangladesh is facing serious energy challenges because of its lack of indigenous resources. The electricity grid has a weak penetration in Bangladesh especially in rural areas where only 10% of the population has access to it. Lack of access to electricity is the major issue affecting the socioeconomic conditions of people in Bangladesh. According to the statistics, nearly 96 million people, making up 38% of the total population do not have access to electricity. People lacking electricity rely mostly on Kerosene lanterns for lighting needs. Having realized the importance of electricity, Grameen Shakti (GS) initiated the Solar Home System program in Bangladesh in 1996. 10 years later GS started the Grameen Technology Centers (GTCs) program to support the services and maintenance of SHS by training women among others.

OBJECTIVES OF THE PROGRAMME
SHS program of Grameen Shakti is part of a comprehensive set of programs included in the rural electrification program of Bangladesh under the Infrastructure Development Company Ltd (IDCOL). The program supplements the government vision of ensuring “Access to Electricity for All in 2021”. Through this program, IDCOL is contributing to the national target of 5% of electricity from renewable energy by 2015 and 10% by 2020. GS will contribute in reaching this target through its SHS program whose primary objective is to install 6 million SHS by 2017. Under IDCOL, GS is collaborating with other 46 partners involved in the establishment of SHS in Bangladesh. Besides that, GTCs program has been put in place as a supportive mechanism to repair, maintain and promote the SHS program of GS at community-level.

IMPLEMENTED ACTIONS
Through program approach, GS has initiated activities for promoting and developing Solar Home System: designing effective financial mechanism based on credit support and installment to make SHS more affordable for the poor; disseminating and transferring appropriate environment friendly technology to the local communities by providing training and building awareness on renewable technology and environment. Through the GTCs program, GS created green jobs for women.
QUANTITATIVE AND QUALITATIVE RESULTS FROM THE IMPLEMENTED ACTIONS

The success of SHSs is evident from the fact that the cumulative number of the systems installed by GS has jumped from 228 in 1997 to 1,550,135 in 2014. Towards the end of 2010; GS was installing 20,000 systems per month. GS is the top contributor in reaching the national objective in Bangladesh. From 2006 to 2015, GS has set up 16 GTCs to support its Solar Program. Solar Home systems have contributed to income generation and its enhancement. Women have found new opportunities to earn money through local cottage industry. GTCs are contributing to women empowerment by developing solar technicians. Over 3000 local women technicians have so far been trained on Renewable Technologies RET. GTCs program funded by USAID involved women (mainly housewives) in the reparation and the maintenance of SHS. They also ensure the good use and the dissemination of the technology through capacity building and campaigns in village areas. Women technicians can work and earn money. 16 GTCs are being operated by women engineers. GS has got several awards including the SolarWorld Einstein Award 2010.

ORIGINAL CHARACTERISTICS

In order to develop its renewable energy systems at a lower cost, Grameen Shakti aims to develop as much of the constituent components locally as possible. In case of solar home systems, it locally develops a number of auxiliary components including charge controllers, lights and mobile chargers.

PARTNERSHIP(S) DEVELOPED IN THE CONTEXT OF THE PROGRAMME

There are 47 partners/organizations including GS under the rural electrification program run by IDCOL. GS contributes the most in installing SHS at country-level. Through its program, IDCOL provides soft loans and technical assistance to private companies interested in Solar PV technology. GS receives money from IDCOL as mentioned above. The program coordinated by IDCOL has become one of the most successful initiatives taken by the Government in Bangladesh.

FEEDBACK

Difficulties and/or obstacles encountered during the programme’s implementation:

The main challenges faced by GS include the high cost of capital and high operational costs. Besides that, on the demand side GS is witnessing limited consumer financing and a bad market competition. There are limited investments due to risks and uncertainty. Import and procurement of solar process and accessories are difficult. There is also a gap in knowledge and awareness. An additional concern is that it is difficult to access very remote areas where the ultra-poor people can be reached.

Solutions used to overcome the difficulties and/or obstacles:

Before this situation, GS has set up a strong base of manufacturing and assembling facilities. Ultimately, the benefit of this strategy helps the customer in terms of reduced system cost. It has also helped GS develop a large pool of renewable technicians in different parts of the country. This helps facilitate the access to the technology for the people living in remote areas among others.

Suggestions for future improvement:

It will be important to strengthen the processes for manufacturing and assembling facilities at the local level. On top of that, more emphasis should be put on the persons living in the most remote areas. The renewable energy will be dominant in the future due to depletion of fossil fuels. This will contribute in fixing the problems linked to consumer financing and market competition. Another lesson learnt is that women empowerment is possible through renewable energy entrepreneurship and the creation of green jobs. And finally R&D should be strengthened in the renewable energy sector in general in order to get better results regarding SHS.

Summary of factors responsible for the programme’s success:

One of the key drivers behind the success of GS is its supportive financial model. The vast majority of its targeted customers-base – households and businesses in rural areas – cannot afford to purchase a SHS at their own. Through its micro-credit program, GS offers a range of financial and technical support packages to make SHS affordable for its customers. Grameen Shakti’s single greatest contribution is the adoption by the World Bank of the Grameen Shakti model to expand renewable energy policy in Bangladesh through the Infrastructure Development Company Ltd (IDCOL) project. The other key drivers are vast operational network, cost-effective production, GTCs, strong monitoring and auditing and micro-utility systems. Through this program, GS has been able to create awareness and demand for RET, adapt and disseminate the latest technology with an effective after-sales service supported in part by the GTCs. The creation of green jobs for women and poverty reduction play also a key role in making the SHS program of GS successful.