

Case Study: Promotion of Solar Home Systems in Bangladesh¹

What is the Promotion Programme of Solar Home Systems?

Only 30% of the Bangladeshi population has access to grid electricity which deprives the vast majority of households and small enterprises of conventional electricity. In rural areas biomass in form of crop residues, animal waste and firewood meets 73% of the energy consumption with considerable negative impacts on the environment. Even enterprises and households connected to the grid suffer from energy problems. Energy shortages and unreliable supply are common and impose a high cost on the economy. Extensive load shedding disrupts industrial production and other economic activities and entrepreneurs are compelled to invest in stand-by generators which increases production costs. The power system in Bangladesh almost entirely depends upon fossil fuels which cause serious environmental problems. In response to this situation, the non-profit company Grameen Shakti is carrying out a programme to install solar PV systems in houses, enterprises and offices. The programme mainly targets areas which have no access to conventional electricity and little chances of being connected to the grid within a 5 to 10 year time frame. The programme is supported by several donors which allows a subsidisation of the installation of the solar systems in several ways.

How does the programme work?

Grameen Shakti sells and installs the photovoltaic systems in rural and remote areas. It also ensures after-sales maintenance and service. Grameen Shakti provides free maintenance service for up to three years after installation of solar home systems. Staff of the company check installed systems and provide necessary maintenance service during visits to collect monthly instalment payments.

The company imports PV-panels from Japan tax free. It produces its own charge controllers in small workshops. Batteries and lamps are bought from local producers. All components are assembled in Grameen Shakti workshops. The solar home systems are distributed to 120 EUR outlets in rural areas where they are sold to the customers. Prices range between 230 EUR for a 40 Wp system with two 6 W fluorescent lamps to 664 EUR for a 120 Wp system with 10 6 W fluorescent lamps. Grameen Shakti provides a warranty of 20 years for panels, 5 years for batteries and 3 years for charge controllers.

Grameen Shakti offers four financing options for customers as shown below:

Option	Down Payment of total price	Payment made by monthly equal instalments	Service charge per annum
Option 1	15%	36 months	12%
Option 2	25%	24 months	8%
Option 3	15%	36 months	10%
Option 4	100% cash payment with 4% discount	100% cash payment with 4% discount	100% cash payment with 4% discount

¹ The present text is based on publications of Grameen Shakti especially the brochure "An integrated Approach to Rural Energy Service" by Dipal C. Barua

For each system sold Grameen Shakti receives a subsidy of approximately 38 EUR. Of this 30 EUR is for the product and 8 EUR to maintain and extend the company structure and services. In addition Grameen Shakti receives grants for the following:

- To train local technicians in after-sales services
- To train customers in the use of the solar systems
- To carry out awareness and marketing activities (demonstration meetings, speaking to village and business leaders, distribute brochures, go from door to door from enterprise to enterprise)
- To organise workshops and seminars on renewable energy
- To invite print and electronic media to explain the programme and progress

The implementation of the programme is supervised by the state owned “Infrastructure Development Company (IDCOL)”. IDCOL receives 13 EUR per system sold to monitor and evaluate the solar home system programmes of the sales companies and organisations and to provide training programmes.

Evaluating the programme

Grameen Shakti has sold more than 65 000 PV systems producing more than 3,5 MW (as of April 2006) in Bangladesh. More than 2 000 systems have been installed each month and it is expected that sales will increase to 3 000 systems per month.

Grameen Shakti installed solar home systems have had a positive impact on rural business. Working conditions have improved, business hours have been extended and new business and employment opportunities have been created.

Use of solar PV-technology has produced a positive impact on the rural economy of Bangladesh. Villagers have reduced their dependence on imported oil such as kerosene and diesel. This has reduced the effect of harmful carbon dioxide emissions from kerosene lamps and other conventional energy sources, which contribute towards global warming. The internal home and work environment of SHS users has greatly improved by eliminating the dangerous smoke and soot from kerosene lamps that cause respiratory and eye problems. This has reduced health risks and reduced health related costs.

Grameen Shakti’s strategy for reaching people and enterprises in remote areas involves a) soft credit through instalments which makes solar home systems more affordable, b) a marketing strategy based on local participation, intense promotion and awareness building and c) product diversification and adaptive research to reach people with quality products at minimum cost and maximise their income generating potentiality.

The programme was supported by several subsidies, such as:

- tax exemptions for the import of solar panels
- product subsidies reducing the price of the solar systems for customers by 5-15%
- subsidies for the sales structure (outlets) of the company
- subsidies for training, awareness raising, marketing campaigns etc.

Subsidies for the programme proved to be successful and fulfil most of the success factors mentioned in the instrument description. All subsidies are handled in an open, transparent way. The results of the programme are evaluated independently regularly to ensure an efficient and proper use of the funds.

Further information

Project Website: www.gshakti.org