

PROJECT INFORMATION DOCUMENT (PID)
Concept Stage

Project Name	Bangladesh: IDCOL Solar Home Systems Project
Region	South Asia
Sector	Other Industry
Project ID	P107906
Implementing Agency	Infrastructure Development Company Limited
Environment Category	<input type="checkbox"/> A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD
Safeguard Classification	<input type="checkbox"/> S ₁ <input checked="" type="checkbox"/> S ₂ <input type="checkbox"/> S ₃ <input type="checkbox"/> S _F <input type="checkbox"/> TBD
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1. Country and Sector Background

Bangladesh has made impressive economic and social strides over the last two decades. It has achieved steady economic growth of around 5% annually, with relatively low inflation and a stable fiscal situation. Population growth and infant mortality rates have declined and primary school enrollment rates, particularly of girls, have improved dramatically. The rate of growth of per capita GDP has improved from less than 2% during the 1980s to over 5% during 1995-05.

Despite these substantial gains, a large unfinished agenda remains in terms of attaining the MDGs, which would require an acceleration of the economic growth rate to 6-7% per annum. Accelerating growth would also require substantially higher levels of investments in infrastructure, with a particular emphasis on the rural areas where the vast majority of the Bangladeshi population lives.

While infrastructure in the rural areas has improved, particularly for water supply and roads, Bangladesh has a particularly high demand for expansion of rural electrification services. Factors such as remoteness, inadequate load demand and resource constraints for expanding the power infrastructure are major barriers to electrification in the rural areas. These areas currently use kerosene and diesel for their lighting and electricity requirements.

At present, about 38% of the Bangladeshi population has access to electricity and per capita electricity consumption is about 133 kWh, which is one of the lowest in the world. Nearly 75% of the population is rural and only about 30% of the rural households have access to grid electricity. The current rate of expansion in electrification is only about 400,000 new households gaining access every year and at such rate it would take more than 40 years to reach all households. Rural electricity access rates have to increase dramatically to accomplish the

Government's stated goal of providing universal electricity access by 2020. Government is considering implementing off-grid renewable energy technologies, such as solar home systems (SHS), micro-wind power systems in coastal areas, and mini-hydro projects in the mountainous regions as a priority, in addition to grid expansion.

Presently, three state-owned utilities under the Ministry of Energy and Mineral Resources are responsible for electricity development in the country. These are:

- i) Bangladesh Power Development Board (BPDB), responsible for generation and transmission of power in the country and distribution in urban areas except the area under Greater Dhaka;
- ii) Dhaka Electric Supply Authority (DESA), responsible for distribution of electricity in the greater Dhaka area including the metropolitan city of Dhaka; and,
- iii) Rural Electrification Board (REB), responsible for distribution of electricity in rural areas through a network of more than 60 Palli Bidyut Samitis (PBSs) or rural electricity cooperatives.

Government strategy emphasizes promoting off-grid options in areas that are unsuitable for grid expansion. It has made a good start by eliminating import duty on SHSs in April 2000. The strategy emphasizes the pivotal role of well functioning rural systems for the Government's off grid promotion strategy and endorses the approach to use well-functioning rural community based organizations (CBOs) to leverage grass-roots reach and establish credibility to improve electricity provision significantly.

2. Objectives

Objective of the project is to support Bangladesh's efforts to raise levels of social development and economic growth by increasing access to electricity in remote rural areas and to reduce carbon emissions by overcoming market barriers for renewable energy development. IDCOL's Solar Energy Program has the mission of fulfilling basic electricity requirements in the rural areas of Bangladesh and supplementing government's vision of 'Electricity for All' by the year 2020. IDCOL, with support from IDA, GEF, GTZ and KfW is channeling funds to small scale renewable energy projects under this program.

3. Rationale for Bank Involvement

The Bank has considerable experience in renewable energy projects in general and with solar energy projects in Bangladesh and in other parts of the world. The project is consistent with the Bank's Country Assistance Strategy 2006-2009 for Bangladesh. It will contribute to the sustainable development of Bangladesh with a particular emphasis on the rural population, which is generally poorer. In addition to reducing GHG emissions, the project would have significant other social, economic and environmental benefits. Bank's involvement in supporting this project is therefore considered highly appropriate.

4. Description

The program will be implemented through sixteen NGOs/MFIs referred to as Participating Organizations (POs). POs select project areas and potential customers, extend loans, install the systems and provide maintenance support. IDCOL will provide grants and refinancing, set

technical specification for solar equipment, develop publicity materials, provide training, and monitor the PO's performance. IDCOL will offer soft loans of 10-year maturity with 2-year grace period at 6% per annum interest to the POs. The households will buy SHSs either for cash or on credit. POs extend loan to the households for purchase of SHSs. The loan tenor varies from 1 to 5 years, and interest rate varies from 8% to 15% per annum. In all instances, the repayment frequency is monthly.

IDCOL had an initial target of financing 50,000 SHS which it achieved in August 2005, three years ahead of the target date and US\$2 million below estimated costs. Following the success of IDCOL's solar program, the World Bank extended its support to the project and KfW has signed an agreement to provide EUR 16.5 million as a grant to the government to be used for further expansion of the program. GTZ has also provided grant for 33,660 SHSs. However, the revised target has been set at 200,000 to be achieved by December 2009. Up to February 2007, a total of 105,048 solar home systems have been installed under IDCOL solar program. Recently the World Bank has indicated its interest to provide US\$ 100 million to be used for financing a further 300,000 systems.

Implementation

The project will be implemented by sixteen NGO/MFIs (referred to as POs) which have introduced and popularized renewable energy technologies for sustainable energy solutions, particularly Solar PV systems, aiming to reduce poverty, improve living standards and protect the environment. Over the last few years, these POs have installed over 100,000 SHS with financing being provided by IDCOL. These POs have operations spread all over Bangladesh and can easily expand into areas which were previously unserved but have the potential to utilize SHS effectively.

Monitoring and evaluation of outcomes/results

During implementation, all the POs will prepare a monthly program of SHS installation and submit them to IDCOL. As installation proceeds, the information will be recorded and stored in a database and IDCOL will prepare consolidated periodic progress reports based on the reports submitted by the POs. During the follow up phase, IDCOL will prepare an annual report on the number of SHSs that are operational based on a 100% survey of all the households carried out by the POs. The POs will also submit to IDCOL a monthly report of the installment payments made to the POs by the households which have bought the SHS on credit. All data will be collected and kept for the crediting period plus two years.

Sustainability

IDCOL, in cooperation with the POs, has played a pioneering role in the spread of SHS in Bangladesh and its loan program for the POs has increased the affordability of SHS for the economically weaker sections of Bangladesh's rural population. The sustainability of both the technology and the financing system is already well established. The additional funding from CDM would further accelerate the spread of SHS.

Environmental Issues and Safeguard Policies

The SHSs have a variety of positive social impacts enabling the users to access radio and television signals, and students and others to work in a safer and pleasant environment. They will also be environmentally beneficial as use of fossil fuel will be reduced. The only potential environmental hazard may arise from improper disposal of lead-acid storage batteries used in SHS. These batteries have been used for SHS in Bangladesh for more than 10 years now and good practice examples of safe disposal are well-known and are being practiced. No negative environmental impacts are therefore expected. POs have agents all over Bangladesh and they are already assisting SHS owners in the O&M of their systems, which includes the safe disposal of batteries. These arrangements are an integral part of PO operations and will continue.

According to the Government's National Environmental Policy 1992, Environmental Conservation Act 1995 and Environmental Conservation Rules and Regulation 1997, solar projects do not require any environmental clearance certificate for implementation. Therefore, from the Government's standpoint there are no requirements for carrying out any initial environmental examination (IEE) or environmental impact assessment (EIA) and social impact assessments (SIA).

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[X]	[X]
Natural Habitats (OP/BP 4.04)	[]	[X]
Pest Management (OP 4.09)	[]	[X]
Cultural Property (OPN 11.03 , being revised as OP 4.11)	[]	[X]
Involuntary Resettlement (OP/BP 4.12)	[]	[X]
Indigenous Peoples (OD 4.20 , being revised as OP 4.10)	[]	[X]
Forests (OP/BP 4.36)	[]	[X]
Safety of Dams (OP/BP 4.37)	[]	[X]
Projects in Disputed Areas (OP/BP/GP 7.60)	[]	[X]
Projects on International Waterways (OP/BP/GP 7.50)	[]	[X]

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