

RENEWABLE ENERGY INITIATIVES OF IDCOL



Infrastructure Development Company Limited
Financier with a vision

Infrastructure Development Company Limited (IDCOL)

ABOUT IDCOL

Infrastructure Development Company Limited (IDCOL) was established on 14 May 1997 by the Government of Bangladesh (GoB). The Company was licensed by Bangladesh Bank as a non-bank financial institution (NBFI) on 5 January 1998. Since its inception, IDCOL is playing a major role in bridging the financing gap for developing medium and large-scale infrastructure and renewable energy projects in Bangladesh. After a decade, the company now stands as the market leader in private sector energy and infrastructure financing in Bangladesh.

PRODUCTS AND SERVICES

Infrastructure:

- Long-term local and foreign currency loans
- Debt and equity arrangement
- Financial advisory services

Renewable Energy & Energy Efficiency:

- Concessionary financing and grant supports
- Technical assistance and quality assurance
- Capacity development of stakeholders
- Arranger of Carbon Credits

Training Programs

- Project Finance
- Financial Modeling
- Renewable Energy

Trained about 1,500 professionals so far

SPECIALTIES

IDCOL is a unique financial institution because it

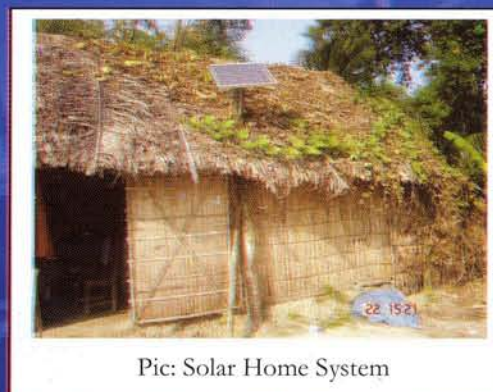
- arranges both debt and equity for infrastructure projects
- is able to offer both senior and subordinated loans
- is able to tailor interest rates, loan tenor, and grace period as required by the project
- provides financing in both local and foreign currency
- advises borrower(s) regarding the structure of financing
- provides credit, grants and technical assistance for the promotion of renewable energy in the rural areas

IDCOL Renewable Energy Program

Renewable energy activities of IDCOL started in 2003 with the Solar Home System (SHS) program. In the year 2006, IDCOL took another program called National Domestic Biogas and Manure Program (NDBMP). In addition to these two most successful programs, IDCOL has financed solar irrigation pump project, solar PV micro-grid project, solar-diesel hybrid power system for telecom BTS, biomass gasification project, biogas based power plant projects, etc. In near future IDCOL has a plan to implement Improved Cook Stove (ICS) program and to finance Energy Efficient Brick Kiln projects.

Solar Home System Program

IDCOL's Solar Home System Program is one of the fastest growing Renewable Energy Programs in the world. The objective of the program is to fulfill the basic electricity requirements in the rural areas of Bangladesh as well as supplement the Government's vision of ensuring access to electricity for all by 2021.



Pic: Solar Home System

IDCOL, with support from World Bank (IDA), Global Environmental Facility (GEF), German Technical Cooperation (GIZ), German Development Cooperation (KfW), Asian Development Bank (ADB), Islamic Development Bank (IDB) and Global Partnership on Output-Based Aid (GPOBA) is channeling both grant and credit to renewable energy projects in rural areas under this program.

Program Structure

The program is being implemented through 29 Participating Organizations (POs) who sell SHSs to the households and business entities in the remote and rural areas of Bangladesh, mostly through micro-credit. IDCOL provides refinancing facility to the POs and channel grants to reduce the SHS's costs as well as support the institutional development of the POs. In addition, IDCOL also provides technical, logistics, promotional and training assistance.

Program Target	: 4 million SHS by 2015
Program Achievement:	: 1.66 million SHS (till Sep'12)
Beneficiaries	: 8.25 million people
Power Generation	: About 80 MW
Fossil Fuel Saving	: 165,000 ton/year
Job Creation	: 70,000 people
IDCOL Investment	: USD 350 million

A Success Story

Besides the expansion of grid electricity, government had taken initiatives to expand renewable energy with the financial support from the World Bank and GEF. Under these initiatives, IDCOL undertook to finance 50,000 Solar Home Systems (SHS) by 2008 in remote areas where grid electricity is unlikely to reach in the near future. The target was achieved in September 2005, about 3 years ahead of schedule and US \$ 2.0 million below estimated project cost. Starting in 2003, over 1.66 million Solar Home Systems (SHS) have already been installed all over Bangladesh till September 2012 under IDCOL SHS program.

SHS Installation Status



IDCOL has a revised target of financing 4 million SHS in off-grid rural areas, with an estimated generation of 200 MW of electricity, by 2015. The total number of beneficiaries under the program is about 5.7% of the total population of the country. So far, IDCOL has invested USD 350million in its Solar Home System Program, which created about 40,000 direct and 30,000 indirect jobs.

Bringing Light to Remote Rural Areas

Access to electricity is one of the major indicators of a country's economic development. In this count, Bangladesh lags far behind many other countries in the world. According to recent statistics, only 51% of our population has access to electricity and the rest 49%, living in remote areas, is yet to be electrified.

IDCOL's solar electrification programme has also brought in positive changes in the rural economy. Small traders, weavers, craftsmen, tailors, and barbers have been earning more through extended working hours as a result of electrification. Students can now study up to late night.



Rural people working at night

Moreover, people in those areas have got opportunity to get connected with the rest of the world through television and radio. According to many female beneficiaries, they feel safer due to SHSs. Many jobs, for both skilled and unskilled people, have been created due to the implementation of this project.

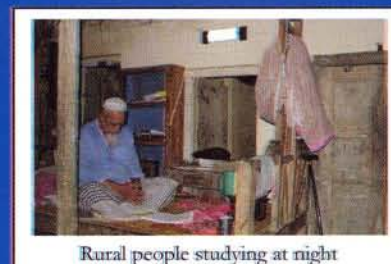
Impact on Environment

The existing 1.66 million SHSs are supplying about 80 MW of electricity, which is expected to be 200 MW in 2015. Before availing solar home systems, most of the households used kerosene lamps. The installed 1.66 million systems will reduce consumption of approximately 165,000 ton of kerosene each year with a total market value of approximately USD 133 million. Since kerosene is subsidized by the Government, this has reduced the subsidy burden of the government to a great extent. The saved subsidy is now being used in productive ways adding extra strength to national economy.

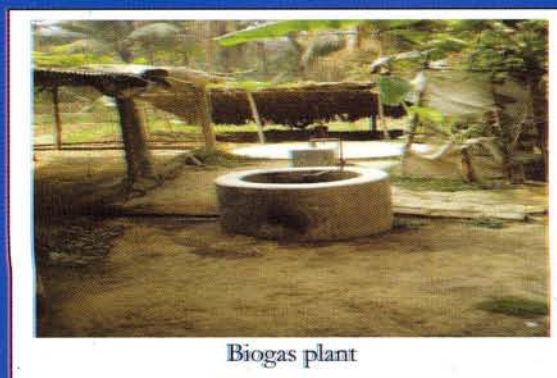
According to the information provided by Intergovernmental Panel on Climate Change (IPCC), the emission factor of kerosene is 2.4 tCO₂e/kl. Hence, under IDCOL Solar Home System Program, emission of about 383,000 ton of greenhouse gas has been reduced. Solar Home System Program of IDCOL has been registered with UNFCCC to avail CDM Benefits.

National Domestic Biogas and Manure Program

National Domestic Biogas and Manure Program (NDBMP) is currently the largest biogas program of the country implemented by IDCOL with support from SNV, Netherlands and KfW, Germany. Gas produced from these plants is being used for cooking purposes in rural households. In addition, the slurry, by-product of biogas plants, being a very good organic fertilizer is used as fertilizer and very good fish-feed. IDCOL is implementing the program through its 38 Lending and Construction Participating Organizations (LCPOs) and 4 Manufacturing Participating Organizations (MPOs).

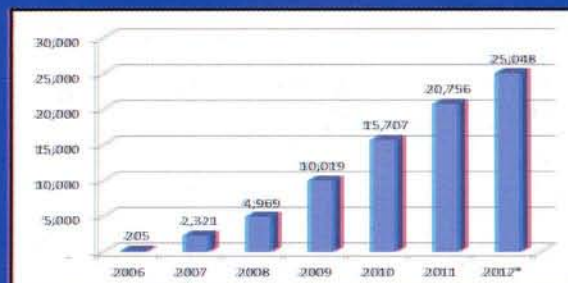


Rural people studying at night



Biogas plant

Program Target	: 100 thousand plants by 2016
Program Achievement	: 25 thousand plants (till Sep'12)
Beneficiaries	: 1.5 million people
Firewood Saving	: 58,600 ton/year
Fertilizer Saving	: 22,000 ton/year
Kerosene Saving	: 800 tons/year
Job Creation	: 8,000 people



Other Renewable Energy and Energy Efficiency Programs

Solar PV based water pumps project

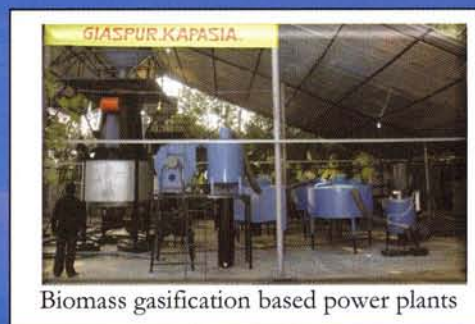
IDCOL has so far financed 7 and approved financing of additional 16 solar PV based submersible water pump in different locations. These plants are providing irrigation facilities to 130 hectares of land owned by 350 farmers. IDCOL has a target to finance 1,550 pumps by 2016. Using the technology, there is an opportunity of replacing 1.4 million diesel based irrigation pumps during the peak season reducing usage of 900,000 tonnes of fuel per year.



Solar Irrigation Project

Biomass gasification based power plants

IDCOL has financed a 400 kW biomass gasification-based power plant along with precipitation silica production plant and 250 kW biomass gasification based power plant. These plants use locally available agricultural residues i.e. rice husk as fuel for power generation. Generated power is used for own consumption and additional power is supplied to households and commercial entities of the nearby areas. By 2016, IDCOL has a target of financing another 30 biomass gasification based power plants.



Biomass gasification based power plants

Biogas based power plants

Five biogas based power plant, with capacity of 400 kW, 50 kW and other three with 6 kW capacity, have been financed by IDCOL. Poultry litter is used as feed material in the biogas digesters for gas production and this biogas is used for electricity generation. Electricity generated from the plant is consumed for running poultry farms. Bio-fertilizer produced from the plant is used in crop production and fish farms. IDCOL has a target of financing 450 biogas based plants by 2016.

Solar Powered Solution for Telecom BTS

IDCOL has financed solar powered solution for 98 telecom base transverse stations (BTSs) in off-grid areas of Bangladesh. There are around 30,000 BTSs in Bangladesh providing quality voice and data services. Out of these BTSs, more than 3,000 are located in the off-grid areas where no commercial power is available. Moreover, there are many sites where grid connection is available but power outages last for 8-16 hours a day. Solar powered solutions provide continuous power supply to ensure uninterrupted voice and data services.



Solar powered BTS

Solar Mini-grid Project

IDCOL has financed one 100 kW solar micro-grid project in a remote island in the Bay of Bengal. The Project is supplying electricity to adjacent 390 shops, 5 health centers and 5 schools. IDCOL provided soft loan and grant support for the project. By 2016, IDCOL has a target to finance 30 micro-grid projects. Currently, IDCOL is considering financing of another 10 mini-grid projects by 2013.



100 Kilowatt solar mini grid power plant

Improved Cook Stove (ICS) program

Improved Cook Stoves (ICS) are designed to reduce the fuel consumption per meal and to curb smoke emissions from open fires inside dwellings. ICS designed for developing country settings as a low cost bridging technology as this new designs burn the wood (or other fuel) more efficiently. It refers to significant reductions on firewood consumption, time consuming wood extraction and respiratory diseases. IDCOL is planning to start the program from January 2013.

Energy Efficient Brick Kiln projects

There are more than 8,000 brick manufacturing plants in Bangladesh. About 90% of these existing brick kiln are fixed chimney based, which is highly energy intensive and releases huge amount of carbon. Annually brick kiln sector consumes 1.9 million tons of fire wood and emitting 9.8 million tons CO₂. IDCOL has a plan to finance energy efficient brick kiln (tunnel kiln and hybrid Hoffman kiln) based brick manufacturing projects. Currently, there are 20 brick manufacturing projects under consideration for financing.



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