

# NGF Solar Home System Renewable Energy Program

## Introduction:

The transformation of solar heat and light into usable electricity has, however, been of rather recent origin. The large scale use of such transformation of solar energy into power is even a more recent phenomenon in the Southwest coastal region of Bangladesh. In Bangladesh, approximately 32 percent of the population has income below the poverty line and 18 percent of total household consumption is spent on fuel. The majority of the coastal rural population does not have access to electricity, and only 60 percent (including 7% renewable energy) of Bangladesh's total population has access to grid electricity.



Besides electricity from the grid, kerosene and diesel are the most popular options for lighting and other energy needs. Households in remote areas are using solar home systems to meet their basic electrification requirements, reducing dependence on imported fossil fuels.

Nowabanki Gonomukhi Foundation (NGF) started the Solar Home system (SHS) program in 2013 to ensure access to clean electricity for the energy starved off-grid coastal rural areas of Bangladesh. The program supplements the Government's vision of ensuring 'Access to Electricity for All' by 2021. The overall objective of the project is to reduce atmospheric carbon emissions by overcoming market barriers for solar energy development, including high implementation costs.

## Specific objectives are :

- to supply electricity to the off-grid ultra poor people for ensuring their access and use of renewable energy;
- To improve life and livelihood of the poor in disaster (Saline) prone areas of the southwestern coast;
- To save nature and environment by reducing CO<sub>2</sub> emission.

At present NGF is implementing the project covering three categories of activity such as Solar Home System for Domestic electrification, Solar System for Domestic water lifting in households and Solar Irrigation System with sustainable Community Development approach.

About 2097 SHSs (min. 20 W to max. 100 W) have already been installed under the program in the off-grid rural areas of 4 Upazillas of Satkhira and 2 Upazillas of Khulna District till December 2015 producing 105 KW electricity. NGF has a target to install more 2000 SHS by 2017, with an estimated generation capacity of 100 KW of electricity.

The Solar Water Pump(SWP) and Solar Irrigation System(SIS) are new interventions of NGF. Two (2) SWP(1 hp pump, 100 W) has been installed in December 2015. Its popularity is increasing in the area because the rural people can also use the water for irrigating their homestead vegetable garden. Solar irrigation systems (SIS) are innovative and environment friendly solution for the agro-based economy of Bangladesh. The program is intended to provide irrigation facility to off-grid areas and thereby reduce dependency on fossil fuel. NGF has a target to install 20 units of SIS(500-1000 W) solar irrigation pumps in the year 2015-16. This small scale irrigation scheme will be a community based intervention. Around 5-6 acres of land can be irrigated through this pump. The program replaces 150,000 kg of Diesel having an estimated value of BDT 120, 00,000 per year.

As energy prices around the country soar and concern about electricity bills mounts, solar home systems are increasingly being installed by poor people wishing to take advantage of a system that produces greener energy and insulates them from rising energy prices. The initial installation cost appeared as a problem for them. But NGF provided the solution. NGF has been providing an easy loan for the poor rural poor people @ 6.5% interest yearly for installing all kinds of solar system. The beneficiaries also avail all kinds of technical support including installation, servicing at free of cost from NGF. Thus the energy efficiency of the rural poor has been increased.



Photo: Solar based Desalination Water Treatment Plant

Anthropogenic greenhouse gas emissions, especially carbon, have had a momentous impact on the onset of climate change. Recent research shows that Solar Home Systems have the potential to significantly reduce carbon emissions up to 80% lower than fossil fuel. So the “Solar Home System” project is playing a key role in climate change adaptation and mitigation mechanism. Increasing access to energy is critical to ensuring socioeconomic development in the rural area. The most common renewable energy system in rural settings is the solar home system, made up of a solar panel, connected to a battery and charge controller. It usually includes at least one light and a socket to power other electrical equipment such as radios, televisions or mobile phone chargers. The uninterrupted power supply ensures light for study of their school going children, access to information and communication through Mobile phone; TV, Provides water for domestic use or irrigation; saves labor.

Solar Home System has become prominent low-carbon way to improve access to electricity resulting improvement of life and livelihood of the poor people. Nowabenki Gonomukhi Foundation(NGF) has a

vision to be the key partner in the Southern Coastal area for creating an enabling environment for the people to ensure access to green energy through it's Solar Home System project.

### Working area:

No	Zilla	Upazilla	Area covered
01	Satkhira	Sayamnagor, Kaligong, Assasuni, Devata,	all area
02	Khulna	Koyra, Paikgasa	all area

Note: Solar system is provided in this working area through branch office and showroom

### NGF solar system package value

No	Solar power	Load	Supporting goods	Service charge	Dawn payment
01	20	3 led light	3 led light with 20 watt package	6%	15%(normal)
02	45	4 led light,1 back-white TV/table fan	4 led light with 45 watt package	6%	15%(normal)
03	50	5 led light,1 back-white TV/ led color tv/ table fan.	5 led light with 50 watt package	6%	15%(normal)
04	65	6 led light,1 back-white TV/ led color tv/ table fan.	6 led light with 50 watt package	6%	15%(normal)
05	85	8 led light,1 back-white TV/ led color tv/ table fan.	8led light with 50 watt package	6%	15%(normal)