Best Practice

Theme: Sustainable Energy (Promoting renewable sources of energy)

Country: Bangladesh

Title: Using Solar Home Systems (SMS) in Rural Households

Responsible Organization: Grameen Shakti, a sister concern of Grameen Bank

Description: Potential expansion of electricity services in Bangladesh is revealed by the fact that less than 30 per cent households are connected with grid electricity. Electrification through grid electricity to a larger fraction of the rest of the households seems to be a difficult task in near future due to a number of factors, like remoteness, isolated and scattered location of the rural households, inadequate load demand, and above all, lack of financial viability and resource constraints for building power infrastructures. At present the rural households, which are not connected to the grid, are often using kerosene (paraffin) for lighting and use grid electricity for charging acid leaded batteries to run their television from the nearest grid-connected rural growth centres. Use of Photovoltaic (PV) technology is viewed as a potential alternative means to provide electricity services to those un-electrified rural households for performing the same functions.

The initiative of installing Solar Home Systems (SHS) with PV in rural households makes positive contribution to the three main pillars of sustainable development i.e. environment, economy and society on different scales, and that also consistent with the national development policies/strategies like National Energy Policy, Renewable Energy Policy, Environment policy, Poverty Reduction Strategy Paper (PRSP), etc. At national level, it reduces the burden on imported fossil fuels using scarce foreign currency. It is found that average monthly consumption of kerosene by a rural household might reach up to 15 litres depending on family size and socio-economic condition. Solar energy improves indoor air quality of the beneficiary households by reducing emission from kerosene (paraffin) used for lighting and it brings global environmental benefits through reduction of GHGs. It also brings a host of other social benefits, which include children education, adult literacy (reading and writing at night), access to information,

employment generation at local level, recreation and general awareness building, etc. The women will be specially benefited as they can relieve themselves from the tedious role of cleaning and maintaining kerosene lamps.

In order to provide facilities for lighting, TV and Radio, the Solar Home System (SHS) comprises of a) Solar Module (30 to 75 Wp), b) Battery (47 Ah to 130 Ah), c) Charge controller, d) Fluorescent tube lights with special electronic ballasts, e) Mounting structure, f) Installation kits, and g) Cables and connecting devices.

This is a private sector initiative and financing has come mainly from own resources of Grameen Shakti. Currently this initiative covers almost 16000 households. Different donor countries and international agencies are showing interest in supporting the ongoing renewable energy activities in Bangladesh including this initiative. Grameen Shakti has also taken initiatives to expand this programme with financial access to Clean Development Mechanism (CDM) under Kyoto Protocol. The subsidized cost of installation, repair and maintenance is being repaid by the beneficiary households on installment with the period of 3 years.

The present level of penetration of solar PV system is not sufficient enough compared to the potential market size. There is enormous scope of new installation of PV for providing electricity services to the rural households of low-income group, which needs to be done through subsidy and soft loan delivering from the government and international donor communities.