Solar Battery Charging Stations: Analysis and Best Practices (1998)

Client: the World Bank

The charging of portable 12 V batteries is an option for countless homes in developing countries as a way of providing enough electricity to power lights, radios and even TVs. Charging often takes place at the nearest grid location or from diesel generators in remote locations. Solar battery charging at central sites in communities is also an option appearing more frequently in remote communities. Solar battery charging stations are thought to be flexible, environmentally benign, lower cost and more convenient than other battery charging options such as generators, on-grid charging or solar home systems. Background information and data do not exist to support these claims and a study was undertaken to develop a data base of best practices, to analyse the available information and to recommend policies and practices that would ensure the implementation of the most reasoned solar battery charging systems approach.

SGA conducted a four country program study through site visits to dozens of sites across Brazil, Morocco, Thailand and the Philippines. Data was researched on-site for technical and design information, cost and financial returns, supporting government policies, local economic development links to solar PV and more. A review and analysis of best practices lead to recommendations for design, institutional development and policy support of battery charging stations. Data supported the economic and financial analysis of life-cycle cost-benefits. Sensitivity analysis indicated under what circumstances the technology made sense. For these the technical, operational, institutional and financial best practices were specified.

Publication: Graham, S. (1999). "Solar Battery Charging Stations: An Analysis of Viability and Best Practices - Contact SGA for more information