A LOW COST DELIVERY MODE OF SOLAR POWERED ELECTRICITY FOR LOW INCOME HOUSEHOLDS

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ABSTRACT

Housing and shelter adequacy are among the basic essentials of human beings. Only 10% of households are connected to the commercial electricity supply in Tanzania. In rural areas, where the great majority of the population lives, the percentage of the population that is supplied with electricity is less than 2%. Renewable energy sources such as solar energy are viable options. Sustainable uptake of such technology depends to a large extent on availability of proven appropriate delivery modes for the energy sources. This paper describes an alternative electricity delivery mode for low income households that are not connected to power utility grid and cannot afford Solar Home Systems (SHS). The paper is based on an electrification project in Uzi Island in Zanzibar using Solar Battery Charging Stations (SBCS) that the authors implemented with financial support of a German Non-governmental Organisation, Deutsch-Tansanische Partnersschaft e.V (DTP)*. The work involved a feasibility study that covered technical, environmental and socio-economical aspects; design and installation of the systems; setting up a management system for the project and monitoring. The project is run by villagers via a Village Committee. Each household pay monthly fees of less than US$ 2 to cover the costs operation, maintenance, replacements and expansion of the project. The monthly fee is lower than costs that would have been incurred for the other viable alternatives. The project has had very positive social, environmental and economic impacts on the island and the surrounding communities resulting in expansion of the project in terms of the number of households involved and new independent solar home systems. This delivery mode of electricity has proved to cost effective on the part of the electricity suppliers and affordable by the low income households in Tanzania. It is thus recommended for widespread adoption.*

Keywords: Solar, Photovoltaic, Battery Charging, Household

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