

## MICRO SOLAR LANTERN FOR RURAL HOUSEHOLDS



An improved Solar Lantern for use in rural households has been designed and developed by Intermediate Technology Consultants (ITC) under this DFID-funded project; its aim was to provide rural African families with access to lower cost and improved lighting for rural African families. It is hoped that this new product, to be manufactured in Africa, will allow poor households to climb the first step on the “energy ladder”.

The lantern, which is now at pre-production prototype stage, makes use of microchip technology to provide sophisticated charge control for the Solar panel and rechargeable battery (an area where many competing products fail).

Not only does it ensure that the battery is charged and discharged correctly so that it gives a lifetime of maintenance free service, but it can also “decide” to give the battery an extra top-up charge

if the panel has gone without its full quota of sunlight for a few days. The microprocessor will even capture information (which can be downloaded later after “interrogation”) on how the lantern has been used over a period of time. This information is extremely useful and can help designers on future projects build a picture of how customers use their lanterns.

The design itself is robust yet attractive and rationalisation of the component parts has led to simple injection moulding tools which can be used and maintained easily in developing countries such as Kenya.

The particular rechargeable sealed lead-acid battery has been chosen for its deep discharge and high cycle performance characteristics. It is hoped that when production numbers are sufficient, the technology to manufacture this battery will also be transferred to a partner country.

The lantern can use any one of three high-efficiency compact fluorescent lamps - customers can choose between ratings of 5W, 7W, or 9W according to their particular requirements. The product also incorporates a 9V output socket, which can be used to power a small radio.

A number of commercial companies have already expressed interest in manufacturing the Lantern in Kenya, East Africa and a batch of products will be tested there shortly before full-scale manufacture commences.

Solar lantern technology has commercial potential in many developing countries and ITC intend to disseminate information about the

product world-wide. ITC is keen to hear from commercial companies who are interested in manufacturing the lantern under license.

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