

Solar lamps for street hawkers

Summary

This project is working in the shifting street markets of Bhopal, a city in northern India that was tragically devastated by a cloud of poisonous gas that escaped from a Union Carbide chemical plant in 1983. The project, run by MPGVM (Madhya Pradesh Gramin Vikas Mandal), is hiring solar lanterns to market vendors and street hawkers who work at night. The idea is to provide them with a cleaner, cheaper, and safer form of lighting for their stalls.

The vendors have traditionally hired kerosene lamps or electrical lamps, powered by diesel generator sets, to light their wares. These are expensive, and, in the case of the kerosene lamps, polluting. This project is giving the vendors the option of hiring solar lanterns at a cheaper rate. It delivers the lanterns to the vendors each evening, and collects them again at around 11.00pm for recharging.

The idea has been widely welcomed. With their wares being better lit, the vendors are selling more products and they don't have to spend so much money on hiring lights or buying kerosene.

The organisation

MPGVM is a development NGO with a broad environmental focus, based in Balaghat, Madhya Pradesh. Formed in 1987 by Ram Chandra Prasad it is a member of the Indian Rural Energy Network. Among its other projects are:

- A project that provides equipment and marketing assistance to producers of khadi cloth. (This a traditional cloth woven from yarn spun by hand on spinning wheels that were famously used by Mahatma Gandhi).
- A biogas programme that has trained 150 masons and built 4,700 household-biogas plants. The project reports that 80% of the biogas units are functioning successfully.
- A continuing education programme that focuses on adult literacy, skills development and the formation of self-help groups for accessing micro-finance schemes.
- A watershed programme that is working with 65 tribal families in the village of Niwas (Balaghat District) helping them to manage their water resources more effectively.
- A rural sanitation programme.

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Context

Bhopal, the capital of Madhya Pradesh, has a population of 1.5 million. Pavement and pushcart vendors, along with stallholders, form makeshift markets that move from one part of the city to the next as the week progresses. The night markets start forming at around 4.00pm and continue until 10.00pm, or later. At around 6.00pm, as it gets dark, the vendors start to light up their stalls.

Both the kerosene lamps and diesel generator sets that are traditionally used in the markets produce polluting smoke. This is harmful to both people nearby and to the planet, as it contributes to carbon emissions and global warming. In addition, the kerosene lamps operate by burning pressurised fuel, and sometimes explode, injuring the vendors.

The need for a reliable, safe and clean lighting source that could be easily carried around led MPGVM to explore the solar lantern route. It conducted a feasibility study that looked at the willingness to use solar lamps, and the cost of maintenance, delivery and collection. This study showed that it would be easy to cover all costs by charging less than the stall holders currently pay for lighting.

Using this information, a proposal was submitted to the Canada-India Rural Energy Project (CIREP) which offers small grants to members of the Indian Rural Energy Network, of which MPGVM is one. The proposal was awarded a small grant by CIREP and the project began in February 2002.

Technology and use

The project is using 100 solar lanterns that were purchased using the CIREP grant. These have a 7-watt CFL lamp and are powered by a 12 volt battery.

Each evening the lamps are taken to the markets in a specially adapted three-wheeler vehicle that has been fitted with shelving to hold the lanterns. The project then hires the lanterns out to vendors for 8 Rupees each per night, almost half the charge for a kerosene lamp or electric light.

At around 11.00pm, project staff travel round the markets to collect up the lanterns and take them back to the project premises for recharging, using a solar PV panel installed at the project office. On persistently cloudy days, they fall back on mains electricity.

MPGVM has found that the lanterns are not quite strong enough to withstand daily handling and that the vendors would prefer to have even brighter lamps that last for longer, so it is looking into ways of improving the lanterns on both these scores.

Despite the encouraging outlook suggested by the initial feasibility study, using 100 lanterns is not yet allowing the project to break even. This is in spite of consistent demand and a high level of acceptance of solar lanterns by the vendors. At this stage the project is reluctant to raise the daily hire charge in order to balance the books, as the vendors are generally extremely poor.

MPGVM would like to expand the Bhopal project and promote replication of the project model elsewhere. They want to encourage and train entrepreneurs in other cities, like Indore and Jabalpur, to take up similar initiatives. They also want to encourage the hawkers to form self-help groups that would be able to get credit from micro-finance organisations and then start their own small solar lantern businesses.

Management, finance and partnerships

The project is run by three full time staff who share the work of delivering and collecting the lanterns and collecting the hire charges. All have been trained in routine repair and maintenance of the lamps, so this is done 'in-house' as and when needed.

The Bhopal solar lantern project is currently funded by a grant from Partners in Rural Development, part of CIREP (Canadian Indian Rural Energy Project), as mentioned above. MPGVM has also received a soft loan from the US funding agency Winrock International, from their 'Accelerating renewable energy commercialisation in India' fund. This loan is being used to support expansion of the solar lantern project in other cities.

MPGVM has started to use the Ashden Award money to purchase more lanterns for their Bhopal project and is looking into ways of replicating the project in Indore and Jabalpur

This report is based on information provided to the Ashden Awards judges by MPGVM, and findings from a visit by one of the judges to see their work.

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