Swavalamban Mono Wheel Generator

Human-powered Lighting Solution

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SMWG in Brief

- Designed to light up homes, schools and community halls in rural and tribal regions facing severe power load-shedding or out of reach of the grid power
- Secured funding from World Bank by winning World Bank India Development Marketplace Award in 2007
- Costs Rs.12,000 that includes 4 energy efficient lights costing Rs.1,400 and transportation
- 20 minutes of pedalling can provide general lighting to a hutment for 5 hours with two LED lamps

Initial prototypes and pilot projects in 2006-07

SMWG: 2007 to 2010

World Bank India Development Marketplace 2007 Award

Key Principles

- Swavalamban – Self Reliance for the people who do not enjoy the fruits the electricity
- Design is open source – Anyone can fabricate and distribute
- Decentralization of production, distribution and maintenance to reduce costs and breed local entrepreneurship
- Robust device that can be fabricated even with the existing low-technology/infrastructure in rural areas

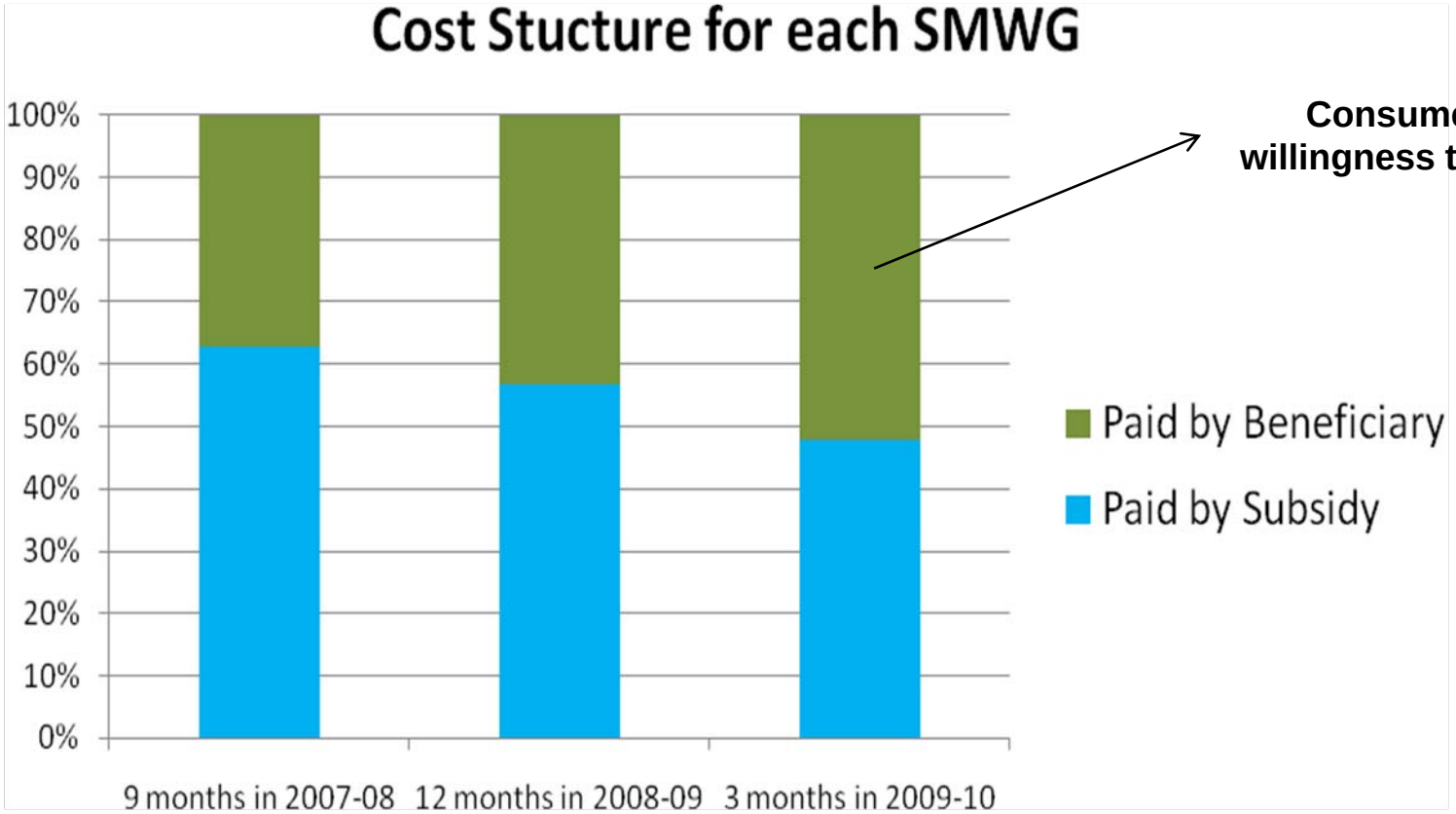
Outcomes

- Local innovation has resulted in variants in SMWG such as water pumping devices, air compressors, juicers, mobile charging devices, etc.
- Local schools have started to fabricate their own version of SMWGs
- Most suitable to Adivasi Ashram Shalas (Tribal Residential Schools)
- Implemented in over 120 rural locations (in a 2-year period) in Maharashtra and Gujarat of India

12,000 INR is the average cost per SMWG

Component	Specifications	Approximate Cost in INR
Fabricated Steel Frame and cycle parts		3,000 to 4,000
DC Generator	**DB 1411**	**1,350**
Battery	40 AH	2,200 to 2,500
Lamps	**Two LED lamps (each is a white LED lamp - 1W at 12V with 30 LEDs) and two 9W CFLs**	**350 each, with a total cost of 1,400**
Electronic Parts and Meters	Charge Controller with LCD display with an integrated voltage indicator	750
Miscellaneous items, wages and distribution costs		1,800
	Total	**12,000 (Approx.)**

Consumer willingness to pay for SMWG is increasing



Key Takeaways

- Rural India is willing to pay money and willing to experiment by playing with technology
- There is a promising market in rural India for similar ventures such as solar powered gadgets
- High distribution costs can be attacked by innovative local entrepreneurship schemes and decentralization
- Swavalamban story has just begun!

People

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Thank You!

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