



USAID
FROM THE AMERICAN PEOPLE



**Humana People to People India
Community Development with
Solar Energy Illumination**



Project Community Development with Solar Energy Illumination

- Time Frame: May, 2009 to April, 2011
- Location: Uttar Pradesh
- Number of Villages: 100 villages
- Funding Agency: United States Agency for International Development (USAID)
- Grant from USAID: US\$ 450,000
- Grant in-kind from TERI: US\$ 450,000
- Partners: Tata Energy Research Institute (TERI)
The Gaia-Movement Trust Living Earth Green World Action
- Implementing Agency: Humana People to People India





The project at a glance

The Project Objectives

- Provide quality illumination based on solar energy to rural households and thereby facilitate education of children, better illumination and a smoke-free indoor environment for women to do household chores, and opportunities for increased livelihood
- Promotes utilization and development of solar energy devices and services
- Create and promote partnerships between entities among government and civil society institutions that can help to efficiently accelerate and expand utilization of renewable energy devices and services all over India



Focus on 3 Main Activities

- Installation of solar charging stations and train Self Help Group members to run the stations
- Formation and training of 300 women's Self Help Groups to improve their livelihood
- Environmental education programs including tree planting actions with children and youth



Project Location – Uttar Pradesh



- 25 Villages in Badaun District
- 25 villages in Kanshiram Nagar District
- 25 villages in Unnao District
- 25 villages in Hardoi District



Survey and Selection of Area



- The villages of the project area are among the poorest in India.
- 40 of 100 villages are un-electrified.
- In 60 villages 5-8% of the households have grid connection with 4-5 hours daily power supply.

Presentation to Local Authorities



The project staff had been provided with insight of local condition by the officials from block development officers and local leaders.

Initial Meeting in the Villages



People were provided telephone numbers of the project staff to ensure their access to solar lanterns once the charging stations would be established.



LaBL Village Selection & Survey



- Surveys were carried out to identify suitable villages for implementation of the project.
- 100 villages were identified among those with poorest or zero electricity supply.

Basic Surveys



The surveys also focused on getting an overall picture of the situation regarding education, health facilities, livelihood, public services etc.

Formation of Self Help Groups



- The women's Self Help Groups form the organizational structure in order to work efficiently.
- 300 SHGs worked with the project each having 15 members.
- 270 SHGs opened bank accounts.
- The first 25 SHGs received bank loans in May 2011.

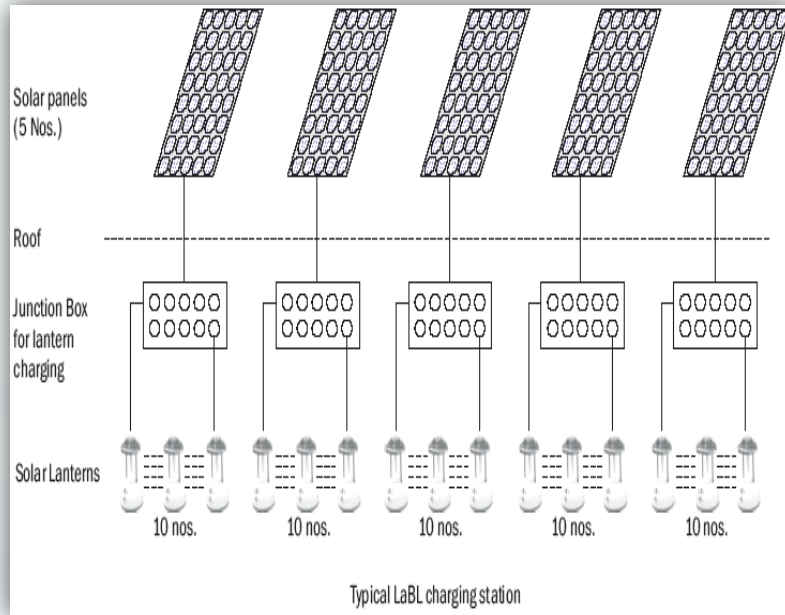
Environment Education in Schools



The Project involved all schools and colleges in the implementation area in programs on climate change and global warming including practical actions such as tree planting.



Installation of a Charging Station



- Solar panels are fixed on roof tops.
- Each panel is connected to a junction box inside the house.
- A junction box is connected with 10 lanterns.

Technical Specifications

Components	Description
SPV power plant	350 Wp capacity (6 x 6 V, 50 Wp + 1 x 6 V 50 Wp)
Junction Box	6, having 10 ports each
Lanterns	60 LED Lanterns
Lighting source	2,5 - 3 W LED
Light output	250 lumens \pm 5%
Lantern battery	6V 4.5Ah SMF battery
Additional features of lantern	Dimming option
	MNight LED
	Smart Battery indication
	Mobile charging facility with additional cable
Running time	5-6 hours for a fully charged battery before indicating "battery low" condition
Recharge time	About 5-6 hours of peak sun-shine (on normal sunny days)
Buffer battery	6 V 40 AH lead acid tubular plate battery for charging 10 LED lanterns





Charging Lanterns / Renting Out



- The solar lanterns charged at the charging stations everyday
- Users collect in the evening against a fee of Rs.2, equivalent to a small candle with 2 hours burning time.

Charging Lanterns / Renting Out



- The entrepreneurs maintained log-books with name and amount paid by the person
- Many lantern users paid one month in advance
- Many of the entrepreneurs engaged their family members to handle the lanterns

Maintenance is Important

Some of the staff members were trained by TERI as technical resource persons for maintenance purpose.



Training

- Training was practical and hands-on in order to handle eventual problems.
- A tool was provided by TERI with all the essential tools and instruments.



Training

All entrepreneurs participated in training programs conducted by TERI before starting their charging stations.



Visits from USAID



- The project enjoyed many visits from USAID.
- Apurva Chaturvedi from USAID at visit in Badaun, January 2010.
- Program Manager Colin Holmes from Development Grant Projects (DGP), USAID in Washington DC visited in Unnao in July 2010.



Visits from USAID



USAID/India Office of Clean Energy and Environment Director, Jeremy Gustafson and Project Management Specialist Apurva Chaturvedi visited the project in October, 2010 for the inauguration of a solar charging station at Fulei Village.



Visits by UP - NEDA



Director UP-NEDA (Uttar Pradesh New and Renewable Energy Development Agency) Nitishwar Kumar and Senior Program officer Mr. Arvind Kumar interacted with project leader, entrepreneurs and lantern users at a visit in September 2010.



Visits by UP - MNRE



Dr. Ahmar Raza, Director, Off grid solar PV Programme, MNRE visited the project at Kasganj in April, 2011. Representatives from NABARD and NEDA joined the visit program

Stories from the Field



- Anuradha Sharma, 44, decided to be an entrepreneur after she became member of a Self Help Group.
- Village has 300 households, and is un-electrified.

“I’m very happy that I got a chance to make the life of people in my village better by distributing lanterns to those who need.”



“We have often had accidents with kerosene lamps, so we are happy with the lantern which is safe to use. Since I have become entrepreneur I get many compliments from people in my village. Complaints I only get from those who couldn’t rent a lantern, because we only have 60 in one solar charging station. By renting out lanterns I have also increased our family income”.

Stories from the Field



- Young Pal, 37, teacher in private junior high school in Kuandanda village, and resident of Buttla Doulat village.
- 3 times a week he gives extra classes at night in his village.
- The good light from the lantern facilitates those classes.



“I met the HPPI field officers in my school when they came to invite us to take part in environmental education programs, and I got aware about the Solar Charging Station in my village. Because of the good illumination from the lanterns I’m now teaching those students who are interested in learning in extra classes at night. My students have also become interested in renewable energy and environmental issues now when they are enjoying the light from the lanterns.”



Stories from the Field



Priyanshu Sharma, 12, student, resident of Buttla Doulat village.

“I’m student in Ujhani Junior High School. Earlier, when we did not have a solar lantern, my mother was afraid to leave me alone with kerosene lamp to study.” The solar lantern is also better because it gives a good light.



At the time of exams many children gather around the lanterns, using the night hours for preparation.

Stories from the Field



Dinesh Saxena, 40, has a small pharmacy in Buttla Doulat village.

“The solar lantern brought many benefits to my shop and to my customers. Before we got the solar charging station installed in my village I closed my shop at 7 pm. Now when I have a solar lantern I can work in my shop till late. In case of emergency, I can easily open my shop and find the medicine.

Stories from the Field



Mahi Pal, 20, has a shop and works as a tailor in Buttla Doulat village.

“I’m glad that we have a solar charging station in my village. I need good light to do my work. With a solar lantern I work well, and with only 2 rupees per day to rent the lantern I can earn more money because of my extra hours of work at night and I can provide clothes to my customers quickly.”

Stories from the Field



Sheela Devi, 60, Housewife in a family of 13 members in Buttla Doulat village.

"I have a big family, 2 sons, 2 daughters in law, 5 grandsons, 3 granddaughters. Everybody is using the lantern in different ways; feeding the animals at night, charging mobile phone, illumination for cooking, cutting fodder, shifting irrigation pipes, my grandsons can do homework at night. It is very useful when we inspect our crops at night. Some bugs can only be seen at night.



Stories from the Field



Brief update – by project end, May 2011

100 solar charging stations have been installed. 95 - 98% of the lanterns are rented out every day.

100 women, selected among the women's Self Help Groups members, have been trained as entrepreneurs to operate the stations.



4 people from the project have been trained by TERI's technical support team, as technical resource persons, to take care of maintenance and repair.

4 people from the villages have been trained as Technical Resource persons and are now providing maintenance service to the stations.

300 women's Self Help Groups have been formed and trained. 270 SHGs have bank accounts in the local banks, and more groups are in the process. 25 SHGs have received their first bank loan.

Project staff has conducted environment education programs with all local schools, including tree planting actions. 12,500 trees were planted in 2010.



Impact on CO2 Emissions

- Average use of kerosene per year per family is 60 liters
- By using a solar powered lantern a family saves 60 liters of kerosene per year
- 1 solar lantern saves 0.15 tones of CO2 emissions per year
- 6000 lanterns save up to 3,60,000 liters of kerosene per year
- 3,60,000 liters of kerosene saved will save 900 Tons of CO2 emissions
- Indoor pollution is significantly reduced



Partners



The project is a partnership between USAID - India and Humana People to People India.

USAID has granted US\$ 450,000 under the Development Grants Program.



Humana People to People India is implementing the project.



TERI has contributed with 50 solar charging stations, training, technical assistance and guidance.



The Gaia-Movement Trust Living Earth Green World Action has sponsored the Project's Environmental Education Program in 100 villages.



Humana People to People India

111/9-Z, Kishangarh, Vasant Kunj, New Delhi-110070

Tel: 011-32947734, 32945153

E-mail: info@humana-india.org Website: www.humana-india.org