

De Montfort University Community Innovation OASYS South Asia -

Solar energy providing opportunities to off-grid communities

About the project

Summary

OASYS South Asia is a collaborative research project led by De Montfort University which looked into decentralised off-grid electrification in South Asia where many people do not have access to electricity from the grid.

Project partners

The project was led by De Montfort University, but also involved Edinburgh Napier University and University of Manchester as other UK partners and the Energy and Resources Institute (TERI) and TERI-University as Indian partners.

The results

The problem

The International Energy Agency state that 'modern energy services are crucial to human well-being and to a country's economic development; and yet globally over 1.3 billion people are without access to electricity and 2.6 billion people are without clean cooking facilities. More than 95% of these people are either in sub-Saharan African or developing Asia and 84% are in rural areas.'

The approach

The project undertook demonstration of off-grid options using solar PV-based mini/ micro grid systems at four locations in India thereby providing access to basic lighting and mobile phone charging facilities as well as supporting use of electricity for productive, educational, and social purposes (street lighting, community halls etc.).

Our goals

The purpose of the demonstration project was to experiment with alternative delivery options to 1) gain real-life experience from the entire life-cycle of mini-grid based off-grid electrification projects, 2) compare and contrast alternative options and 3) learn lessons for scaling-up of such activities.



Profile

- HEI
- 20,000 students (includes full and part time students)
- 2500 staff
- Urban

Category supported by



Finalist's case study

Obstacles and solutions

Obstacles	Solutions
Lack of local capacity	<ul style="list-style-type: none"> This was identified from the start and extensive training was organized through Indian partners. Hand-holding for the entire demonstration activity was a major element.
Weak individual credit worthiness	<ul style="list-style-type: none"> A joint-liability group approach was adopted Used in two demonstration activities (Mlinda pico-grid and Mera Gaon micro grid) A group becomes jointly liable for a credit/ service.
Access difficulty due to remoteness	<ul style="list-style-type: none"> Site work carried out avoiding the rainy season Higher transport cost included in the budget Local community built an unmetalled road in one site

Performance and results

Four demonstration projects were completed thereby bringing electricity to about 5000 households in various parts of India. The projects demonstrated that off-grid electrification through local mini/micro/pico grids can bring economic and social benefits to the local communities, including reduction in kerosene use for lighting, enabling mobile phone charging at home, allowing time for studies and artisanal income-generating activities at night and enhancing a sense of security after dusk. All the projects are operating satisfactorily, thereby empowering the local communities and offering a low-carbon energy option.

The future

Lessons learned

The projects clearly highlight the following:

- A project has a greater chance of success when the right institutions are selected and capacities are built so that right set of skills are developed to deliver the tasks in collaboration with other partners.
- Innovative technical design and financial models are required to enhance success of a project.
- Alternative service delivery approaches are possible but the choice depends on the local context to a great extent.
- High positive external benefits of such projects make them worthwhile.

Sharing your project

Extensive dissemination has been carried out through publications (papers, books, and reports), workshops, training sessions and use of social media. The research has also provided 3 books, more than 25 working papers, 17 peer reviewed journal papers and 32 conference papers. Most of the outputs are available here: <http://dmu.academia.edu/OASYSSouthAsiaResearchProject>

A video is available about the demonstration projects: <https://www.youtube.com/watch?v=YKJS4a0Jbpc>

What has it meant to your institution to be a Green Gown Award finalist?

To be recognised in the Green Gown Awards is a great result for the university. To be a finalist in the Community Innovation category clearly shows that DMU's commitment to sustainability reaches beyond the management of its buildings and is included within its ground breaking research and teaching. The OASYS project is a great example of how DMU is improving people's lives by providing access to clean, green, renewable electricity.

Further information

Contact: Prof. Subhes Bhattacharyya (subhesb@dmu.ac.uk) for further details. See also
<http://dmu.academia.edu/OASYSSouthAsiaResearchProject>

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