

Implementing cooperative and technical solutions to increase energy efficiency in irrigation

Project Duration: 09/2011 – 08/2012

Project Coordination: Division of Cooperative Sciences, HU Berlin

Introduction: The current state of the agricultural electricity supply suffers from inefficient energy use and frequent motor and DTR burn-outs due to low power quality. Although many reasons led to this phenomenon, some small technical solutions could provide improvements for both efficiency and quality. Few pump sets have capacitors, which stabilize voltage harmonics, improve the power factor, and reduce damages. Previous projects have demonstrated positive results. Yet the question remains, why utilities and farmers have not yet taken up the initiative to install capacitors.



Source: DFID

Social and technical hurdles: Preparatory research revealed several obstacles (technical and social) that have hindered the implementation of capacitors:

- Collective Action is required: A capacitor on an individual pump set is only effective, if all pump sets connected to a DTR use a capacitor.
- A capacitor has to be properly adjusted to each individual pump set
- Farmers need confidence in the technical improvement.
- Farmers need to be trained to maintain the pump set properly
- Further reasons can lead to burn outs and need to be considered

Aims of the Pilot: Together with the electricity distribution cooperative society CESS Ltd. and other partners, Humboldt University Berlin has selected an area for implementation at the feeder level. Extensive pre work with the farmers and capacity building will be conducted together with the local NGO SEWS. Training for the technical solutions is set up together with an electrical engineer. After implementation, the energy savings and reduction of burn outs will be measured and analyzed. In case of success, a plan on how to upscale the project and how to make it financially viable will be established.



Source: ORC

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SUSTAINABLE HYDERABAD PROJECT

Sustainable Hyderabad: The pilot project is conducted under the provisions of the “Sustainable Hyderabad” project. This project is financed by the German Ministry for Education and Research. It comprises several major research institutions from India and Germany and focuses on climate change and energy efficiency.