

MACRO-REPLICATION OF RURAL ENERGY AND WATER SUPPLY UTILITIES (REWSUs)

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1. Background

A great deal of experience was gained through over seven years of successful operation of the community biogas-based electricity generation system in Pura village near Bangalore in South India. A Grama Vikas Sabha (GVS), i.e., village development committee, managed the system and obtained the cooperation of the villagers with regard to adequate daily dung deliveries and an outstanding record of collection of electricity and water charges at tariffs far higher than those obtaining in towns and cities. These successes --as well as the growing demand from neighbouring villages for the establishment of similar systems -- suggested that a Pura-type Rural Energy and Water Supply Utility (REWSU) should be replicated.

In the first instance, the replication was done in four neighbouring villages -- Suggenhahalli, Ungra, Kagganahalli and Kodavathy -- by following the same process as in the village of Pura. This procedure involved the KSCST-ASTRA team that executed the Pura project arranging for the funding (via the Karnataka Power Corporation Ltd.), facilitating the formation of the Grama Vikas Sabha, designing and constructing the biogas plant, managing the initial operation, training the village operators in the technical operation and the management, etc. If the Pura plant could be called a demonstration plant, the KPC-sponsored project could be referred to as an extended demonstration project.

The next phase of replication was planned to be on a "100-village" scale -- mini-replication -- based on a proposal to the Rockefeller Foundation. This proposal envisaged a conceptual, organization and coordination role for the International Energy Initiative which would be responsible for procuring and disbursing the funds and for organizing in collaboration with the KSCST-ASTRA team the technical and management training. The fundamental difference between this mini-replication phase and the previous extended demonstration phase consists of the replacement of the KSCST-ASTRA team with the project teams from NGOs, educational institutions, district organizations (zilla parishads), etc. implementing the project. This replacement on a one-REWSU-one-project-team basis is planned to ensure for each REWSU the whole-hearted commitment of a project team.

2. Macro-replication

The mini-replication procedure based on the central organization and coordination role of IEI cannot handle an order-of-magnitude increase in the coverage from "100" to a "1000" REWSUs. Macro-replication requires the replacement of IEI by an entity that will play in the macro-replication all the necessary roles. For each REWSU, it must

- arrange for funds/finance/capital
- identify individuals/ a group with credibility in the village and commitment to it to function as a product champion and motivate the village
- facilitate the formation of a Village Development Committee (Grama Vikas Sabha)
- design the REWSU plant and distribution system
- construct the REWSU plant and distribution system
- operate the REWSU plant and distribution system
- train the GVS nominees in the technical aspects of a REWSU
- train the GVS in the management of the REWSU
- transfer the REWSU to the GVS.

This multi-functional role cannot be played by either a NGO or an educational institution or a village organization or a government body; it is best played by a "developer" with construction expertise, for example, in the construction of housing projects.

3. Phses of Replication

The phases of replication of REWSUS are as follows:

Demonstration (Pura) --> Extended Demonstration (Sugganhalli, Ungra, Kagganahalli & Kodavathy) --> Mini-Replication --> Macro-Replication

[GVS = Grama Vikas Sabha (Village Development Committee); AKPT = ASTRA-KSCST Project Team; PT = Project Team; IEI = International Energy Initiative; D = Developer]

PHASE	FUNDS/ FINANCE	MOTIVA TION	GVS	DESIGN	CONSTR UCTION	OPERA TION	TECH TRG	MGM T TRG	TRAN SFER
DEMO (Pura)	AKPT	AKPT	AKPT	AKPT	AKPT	AKPT	AKPT	AKPT	AKPT
EXTENDED DEMO (Suggan halli + 3 villages)	AKPT	AKPT	AKPT	AKPT	AKPT	AKPT	AKPT	AKPT	AKPT
MINI- REPLICATION (100 villages)	IEI	PT	PT	PT	PT	PT	AKPT + PT	AKPT + PT	PT
MACRO- REPLICATION(1000 villages)	D	D	D	D	D	D	D	D	D