

## Consultants

### **LOCAL CONSULTANT TO RURAL ELECTRIFICATION PROGRAMME**

In 1976, a comprehensive feasibility study on Rural Electrification (RE) was conducted by National Rural Electric Co-operative Association (NRECA), USA. Based on the study, the Rural Electrification Board (REB) was established. Initially NRECA/CAI (Common Wealth Associates International) made feasibility study of 13 PBS's. Besides this they trained some local consultants.

Local consultants are now carrying feasibility study and load survey for the entrusted PBSs. On the basis of the load survey and load growth, local consultants forecast the future load and plan & design the power distribution system showing the location of sub-stations backbone lines and lateral lines for the entire area of the PBSs at the inception of that particular project.

The lines they designed to cover the entire area for electrification are not equally potential or not equally urgent technically. So considering Benefit Cost Ratio (BCR) or Profitability Index (PI) they set the priority number for constructions of lines and the lines are constructed according to the priority list. They also provide assistance to accommodate present suddenly growing load.

To maintain better construction quality, local consultants are also involved in making line construction specification sheet (called as staking sheet) and in supervisions & energization of the line.

The Local Consultants are studying load growth of each PBSs separately by collecting various data such as maximum demand KVAR, Voltages Amperes of Voltage drop at different points of sub-station, meter connection, line construction data in each month. They time to time propose improvement of the system such as system loss improvement, power factor improvement or voltage drop improvement to PBSs.

They also extend their services for maintenance and operation e.g. by changing poles, installing automatic re-closer, voltage regulator or capacitor or by attending consumer complaints.

They use to update all the constructional and operational activities in the maps (key map & detail map), in the single line diagrams and in the monthly information sheet.

REB provides extensive both classroom and on the job training for the local consultants (owners, managers, engineers, workers). Under different programs, the operations of existing firms are expanded and new firms are trained and appointed. Until now there are 19 consulting firms, over 1000 engineers are working in 67 PBSs in RE program.

### **FOREIGN CONSULTANT TO RURAL ELECTRIFICATION PROGRAM NRECA/USAID Partnership**

Beginning 1976 with the Power Development Board (PDB) of Bangladesh, NRECA (National Rural Electric Co-operative Association) International, Ltd. conducted a comprehensive feasibility and organizational study for the implementation of a nationwide, rural electrification program. The combined engineering/social studies confirmed that

reliable, low cost electric energy would be beneficial to rural Bangladesh for irrigation, improved education and health facilities, and living standards.

Based on the NRECA study, the Government of Bangladesh created the Rural Electrification Board (REB) to administer the national rural electrification program and to organize the rural electric cooperatives. In 1978, REB entered into a long term technical assistance agreement with NRECA International/Commonwealth Associates to assist in the planning and implementation of the national program of rural electrification. Thirteen cooperative project areas were selected as sites for immediate project implementation.

Immediately following selection of the initial thirteen projects, REB created Palli Bidyut Samities (PBS) as the vehicles to carry out actual construction of facilities in the rural areas, and operations of those facilities. Each Palli Bidyut Samity has, as its cornerstone of organizational philosophy, the cooperative concept. The concept was established by NRECA for REB, following the Cooperative pattern the United States but with appropriate modifications for unique Bangladesh cultural requirements. Each PBS operates independently of each other with a Board of Directors elected by its consumer/members. PBS By-Laws require each PBS to adhere to cooperative principles, yet follow comprehensive policies and guidelines from REB. This combination of consumer/member input and REB guidance has proved very successful.

Following funding of the original thirteen PBSs by USAID, several other donor countries and organizations came forward to help fund additional PBSs. Over the years, more than sixteen organizations have provided funding to build 67 PBSs. Today, rural electric societies have been created in most of the regions of Bangladesh, providing the mechanism to eventually provide electrification to most rural areas. NRECA has been working with REB and each PBS to assure continued success.

NRECA and USAID have worked hand in hand with REB and the Palli Bidyut Samities on a continuous basis for the past 27 years. Initial assistance included “hands on” help with a multitude of tasks. These tasks included:

- Initial REB and PBS organizing and development;
- Development of uniform engineering and constructions standards;
- Actual PBS system design and construction of sub-stations and electric lines;
- Staffing and training of REB and PBS personnel;
- Development of uniform accounting standards for REB and the PBSs;
- Creation of a comprehensive set of Operating Policies, and;
- On-site monitoring of PBS operations and management activities.

The initial twenty six years of this partnership included more than \$200 million of construction and technical assistance funding by USAID. NRECA provided engineers, linemen, managers and office personnel. These personnel worked side-by-side PBS and REB employees to develop infrastructure and build the systems.

Since 1977, involvement by NRECA and USAID has consisted of Technical Assistance. As REB and the PBSs reach maturity, activity must shift from purely construction, to a delicate balance of construction, maintenance and operations. More emphasis must be focused on maintaining lines and substations. PBS personnel must be trained to respond efficiently and quickly to consumer needs. With many PBSs having more than 75,000 consumers each,

computerization becomes imperative. Management systems installed nearly 28 years ago, must be modernized and improved. NRECA is providing professional technical assistance in the above mentioned areas.

The REB/NRECA/USAID partnership has been remarkably successful. Government and business officials throughout Bangladesh point to the success of the rural electric program, often asking why other organizations cannot emulate the success. Representatives of electric utilities from other countries have visited REB to gain insight on how a successful rural electric operation can be created and operated. Future of the REB/NRECA/USAID partnership looks bright!