



NRECA International Ltd.

Your Touchstone Energy® Partner 

Progress Report #2

**NRECA Cooperative Development Program
December 1, 2004-May 31, 2005**

June 2005

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December 1, 2004 – May 31, 2005**

Prepared for:

**Office of Private and Voluntary Cooperation
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List of Acronyms

BANRURAL – Banco de Desarrollo Rural (Guatemala)
CAS – Corporate Advisory Services (IFC)
CER – Cooperativa Electrica de Riberalta (Bolivia)
CFC - National Rural Utilities Cooperative Finance Corporation
CDP - Cooperative Development Program
CLARITY – Cooperative Legal and Regulatory Initiative
CONELECTRICAS – Consortium of Costa Rican Electric Cooperatives
DBP - Development Bank of the Philippines
ECs – Electric Cooperatives (Philippines)
ESMAP – Energy Sector Management Assistance Program (World Bank)
EKPC – East Kentucky Power Cooperative
FFP - Food for Progress (USDA)
G&T – Generation and Transmission Cooperative
IFC - International Finance Corporation (World Bank Group)
INDE – Instituto Nacional de Electrificación (Guatemala)
MDBs - Multilateral Development Banks
NEPA – Nigerian Electric Power Administration
NPC - National Power Corporation (Philippines)
NRECA - National Rural Electric Cooperative Association
OCDC – Overseas Cooperative Development Council
PPP - Plan Puebla Panama (Central America)
REFC - Rural Electrification Financing Corporation (Philippines)
SENELEC – Senegalese Electric Power Company
SSER – Societe Senegalaise d'Electrification Rurale (Senegal)
TAG – Technical Assistance Guide
USDA - U.S. Department of Agriculture
USAID – U.S. Agency for International Development
USTDA – U.S. Trade and Development Agency

NRECA Cooperative Development Program Progress Report

December 1, 2004 – May 31, 2005

1. CDP Purpose and Overview

The purpose of NRECA's Cooperative Development Program is to promote the electric co-op model as a proven system for delivering electricity to serve local development on a commercially successful basis. We are using the CDP to access electric utility sector and rural electrification development policy-making in order to gain opportunities to demonstrate how the electric cooperative business model can fill the gap between failed state-owned utilities and the shortcomings of privatization.

Our primary strategy, encompassing **Component 1, CDP Partnerships**, is to establish alliances with the major multilateral agencies, who provide most of the policy influence and financing for rural electrification, together with other strategic partners who share similar goals. We will support this strategy in **Component 2, CDP Source-kit**, which will accumulate and disseminate comprehensive and usable documentation of NRECA's lessons learned and tools for designing and implementing successful cooperative electrification enterprises.

Our overall CDP objective is to increase the number of national rural electric cooperative development programs. There have been many instances where new electric cooperatives have been established in ones and twos, but there have been no new national-scale electric cooperative development and investment programs in over 25 years. Cooperative-type electrification offers the possibility of scale and replication through aggregation and standardization. Achieving our strategic goal will require establishing a successful co-op development and investment model supported by policy mandates and national institutions dedicated to creating the proper enabling environment for cooperatives to operate effectively in the electric utility sector.

The intended overall result of the 5-year CDP is to create new instruments to fill the institutional gap left by failed conventional solutions—government and private for-profit investor-owned utilities. The initial challenge is to raise the cooperative solution higher on the list of policy options considered by governments and donors; once this is achieved, we will use CDP through our alliances and know-how to partner with these key constituents in raising up commercially viable electrification enterprises and markets.

The expected 5-year CDP outputs are as follows:

- (a) Creation of at least one institutional partnership with multilateral development banks (MDBs) to promote electric cooperative development.
- (b) Resulting from (a), the adoption of a basic cooperative development and support policy/strategy for addressing rural electrification needs in the MDBs' member countries, which will be manifested by the execution of engagement agreements to carry out programs for this purpose and with this result.

(c) Creation of a comprehensive set of practical guides relating to the design, development, and support of successful cooperative electrification enterprises.

(d) Development of successful national cooperative electric investment programs including setting up of electric cooperative development agencies and of local electric cooperatives that meet established norms for commercial electric services utilities and that provide salient social and economic value to their consumer members.

2. Accomplishments

Activity 1: Institutional Strategies and Agreements

- We continued to develop our new relationship with the Corporate Advisory Services (CAS) department of the World Bank Group's International Finance Corporation, submitting two proposals in India and taking steps to initiate a new program in Africa.
- NRECA made a presentation to the Infrastructure Working Group of the Partnership to Cut Hunger and Poverty in Africa, an initiative set up under USAID's Global Development Alliance by former Administrator Peter McPherson and others. As a result of the presentation, the Partnership will assist in developing a funding initiative for a Partnership-sponsored rural electrification program in Africa under NRECA's leadership.
- We developed a new five-year business strategy for presentation to the NRECA Board of Directors in June. The plan envisions a significant role for NRECA's member electric cooperatives in promoting cooperative development. Among other new initiatives, the plan calls for establishing a system of "design-build-operate-transfer-support" for cooperative development by partnering directly with local communities and other institutional partners in demonstrating new models as part of our partnering program in Component 1. An opinion survey of selected groupings of the NRECA membership will be carried out later in the year to build an information base to help us enlist greater direct support from NRECA member co-ops and other institutional and private commercial members to help undertake specific country programs and projects.

Activity 2: Country/Regional Initiatives

- *India:* NRECA submitted proposals jointly with CAS to the Ministries of Power in the states of Bihar and West Bengal (see summaries in Attachment 1). These projects are aimed at creating state-wide models for "franchising" rural electrification using a community-based ownership model, as part of the Indian Central Government's current national electrification program. In Bihar we intend to partner with the dairy cooperative unions in designing and implementing

the program, whereas in West Bengal we are planning to establish a new format for community ownership and operation. We are currently awaiting the Central Government's endorsement (Ministry of Power), which is expected shortly.

- *Bolivia:* We are developing two projects with CDP support aimed at strengthening the electric "cooperatives" in Bolivia's northern department of the Beni. Both projects involve infrastructural improvements while one is also aimed at creating a rural electric management initiative that could have larger implications for co-op development in the country. This latter project involves interconnecting up to six existing cooperatives including the cooperative in Riberalta where NRECA has had several years of experience including power supply improvements and also where attempted to reform the cooperative into a stronger and more professionally managed utility. Like many of the smaller cooperatives in Bolivia – which were mandated by law a decade ago to reform themselves into private non-cooperative companies – the Cooperativa Electrica de Riberalta (CER) has been hampered by local political interference so the challenge has been overcoming political circumstances in the town that have proved difficult and almost intractable. The solution effectively involves making tangible resources available to these cooperatives as the basis for gaining some leverage by which to address internal management and governance issues, i.e., on an interim basis, influence the cooperative's decision-making including financial planning as well as organizational strengthening. The proposed union itself will improve the cooperatives' individual finances by allowing great scale economy.

Currently, we are focusing on four of the smallest co-ops in the department to set up the new management company, effectively forcing a merger. This would be an initial step of a wider effort in the Beni, and if successful could hold promise for a larger national program to reform and revitalize the country's smaller electric cooperatives.

We have completed studies related to the infrastructural improvements, which will be financed by NRECA using a related USDA monetization project and the Prefectura. The next step will be to finalize the financing negotiations, which have been delayed by the national political instability of the past several months. We expect the political situation to be helped by elections expected sometime between August and December of this year.

- *Central America:* We continued to work with the government (Comision Nacional de Energia Electrica) on a "rescue" plan for the country's 13 municipal electric utilities, including the option of reforming them into electric cooperatives. The municipals as a group suffer from a variety of administrative deficiencies and are also in need of new investment and re-engineering. We created a partnering relationship between the municipal utility in the municipality of Zacapa and a US electric cooperative in Minnesota, with a trip planned in June. We have been asked by the munis in San Marcos and Quetzaltenango to create similar partnerships. We also continued to work on expanding NRECA's electrification

trust fund with BANRURAL. Funding sources we are pursuing are the Plan Puebla-Panama (PPP), an international Central American development program; INDE's rural electrification trust fund, which is soliciting funds from the MDBs; and USDA's Food for Progress program. We will explore the idea of creating a broad new partnership for rural electrification financing with IDB's MIF in the Central American region, focusing on cooperative development of Guatemala's munis, assisting in an effort in Nicaragua to establish electric co-ops (with the advisory support of Costa Rica's electric co-ops), and building up the electric cooperative system in Costa Rica through the national co-op association, CONELECTRICAS.

- *Dominican Republic:* We continued to work on setting up two pilot electric cooperatives, one in the Las Flores neighborhood of the capital city of Santo Domingo, and a second co-op in a rural area bordering Haiti, the "Cooperativa Electrica Fronteriza." We made substantial progress with both projects, both of which are being implemented with the support of a USDA monetization project.

NRECA also continued to develop a new electric cooperative in the Haitian town of Pignon which is being implemented with the assistance of co-ops in Minnesota and Kentucky. This project will be featured in a short documentary on PBS' "Foreign Exchange with Fareed Zakaria" on July 7 (see Attachment 2). As part of our proposal to MIF, we will discuss including both Haiti and Dominican Republic in the envisioned electric cooperative development initiative with MIF, Central America and the island of Hispaniola comprising the same IDB operational department along with Mexico.

- *Philippines:* The REFC initiative to create a cooperatively-owned electrification financing program continued to advance, with CFC's on-going assistance. To date there are 44 Filipino electric cooperative investors along with NRECA. As of May 31, 2005 REFC had a total paid-in capital of \$2.6 million and had issued 36 project loans for a total of \$3.5 million. In addition, NRECA had completed comprehensive technical-financial audits of 27 REFC-member electric cooperatives in which we identify some \$250 million of capital investment improvement needs. We will complete 13 more studies by the end of the year. This work is being performed with the assistance of a \$449,000 grant from USTDA. Most importantly, REFC, which first became operational in 2002, had achieved two consecutive quarters of profitable operations, which is a key criteria for obtaining external debt financing. By the end of the year we hope to have initiated the formal process of setting up a credit line with the Development Bank of the Philippines.

The challenge in the REFC initiative has been the slow process of educating the cooperative leadership on the reality of working in competitive markets. This is broadly speaking the overall intent of the Government's policy toward the electric co-ops, who up to now have been sheltered under the auspices of the government's electrification program. Early assumptions by REFC organizers

that it would be relatively simple to obtain private funds to build REFC's lending capacity are being replaced today with a better appreciation of the need to establish REFC as a professionally-run organization and in turn, on the need for EC borrowers to take their obligations seriously. To date there has been no default on loans and the REFC Board is taking steps to improve its staffing and procedural discipline as it prepares to formalize discussions with DBP and other potential financial institutions.

We also initiated work to establish a first-ever "generation and transmission" cooperative in the Philippines. The ECs have a first-right-of-refusal on the purchase of the National Power Corporation's 69KV sub-transmission assets, which is being carried out as part of the NPC's privatization. The initiative will initially be focused on the seven ECs located on the island of Panay and in May we visited Iloilo to meet with representatives of the co-ops to present a general development plan. At the meeting the Panay ECs agreed to work with NRECA on developing a G&T aimed at (1) developing a joint power purchasing program and (2) consolidating their purchasing power in negotiating a deal with NPC. The program will be developed with the assistance of a U.S. G&T cooperative in Kentucky. If successful, the new Panay G&T would likely create additional demand for REFC lending.

- *West Africa:* We continued to pursue several initiatives in Africa. In May NRECA was informed by USAID that our unsolicited \$4.1 million project to create a model electric cooperative in the southern Sudanese town of Yei was approved. As part of this project we will also conduct studies for creating similar projects in some of the other larger towns including Yuba and Rumbek. This will be funded under USAID's contribution to rebuild southern Sudan following the long-awaited peace accord between the south and the Arab-dominated national government in Khartoum.

In Senegal, we executed a preliminary agreement with the national power company, SENELEC, to create a joint venture wherein NRECA will participate in a new SENELEC rural electrification subsidiary, SSER (Societe Senegalaise d'Electrification Rurale) in the development and operation of new rural electrification concessions that are being established by the government of Senegal. This will be jointly funded by NRECA and SENELEC. We are currently preparing proposals for USDA support under the FY06 FFP program and for USTDA support.

We also continued discussing a program to implement pilot electrification projects in Nigeria with the World Bank. The Bank is interested in receiving a proposal from NRECA to take over two rural distribution districts near the capital city of Abuja.

Activity 3: Source-kit

During the reporting period, we initiated the development of the CDP Source-kit by developing a priority list of twelve Technical Assistance Guides (TAGs) which will comprise the initial edition of the Source-kit, as follows:

1. Creating an Electric Cooperative
2. Functions of the Board of Directors of ECs
3. Preparation of a Business Plan for ECs
4. Feasibility Analysis of Peri-Urban Projects
5. Project Engineering Design & Cost Estimation
6. Feasibility Analysis of Grid-Extension & Renewable Energy Systems
7. Material Acquisition & Bidding Procedures
8. Construction Standards for Rural Electrification
9. Construction Standards for PV Systems
10. Project Economic Analysis
11. Analysis of Productive Uses
12. Project Monitoring & Electric Co-op Performance

We have completed initial drafts of all of these modules and are in the process of revising and editing them for publication, which is expected in late 2005.

In March we presented the Source-kit initiative at a World Bank brown-bag lunch which drew an audience of rural electrification analysts and country program project officers from several Bank departments. This led to a follow-up meeting with staff of the Bank's Energy Sector Management Assistance Program (ESMAP) to discuss a plan to collaborate on expanding the Source-kit and its dissemination. ESMAP is preparing a similar product focused on renewable energy systems for use by Bank operations staff and the option will be currently exploring with the Bank is to develop a more comprehensive rural electrification toolkit for use in assisting Bank policy and program managers in the effective design and implementation of rural electrification programs, as well as other program developers around the world.

During the second half of 2005 we will share drafts of select modules with World Bank staff as they are developed to demonstrate the value of these documents and related analytical tools and further discussions related to funding for ongoing collaborative development of a more comprehensive product.

Activity 4: Learning Agenda

We initiated planning for our first electrification "best-practices" seminar, to be held in India later this year as part of our partnership with IFC/CAS. The seminar will be focused on rural development banking institutions and will be cosponsored with the National Bank of Agricultural Development in Mumbai.

In March we sponsored a seminar for Filipino ECs on the U.S. G&T model at the NRECA Annual Meeting in San Diego, which was led by a representative of East Kentucky Power Cooperative. EKPC has offered to help the Philippines in devising and implementing a strategy for creating G&T cooperatives in the Philippines, as described earlier in this report.

In April we held a two-day seminar and field study for a visiting delegation from Nigeria comprised primarily of regional distribution CEOs and technical staff of NEPA, the national power company. The presentation focused on the U.S. electric cooperative model and was followed by a day-long visit to an NRECA-member cooperative headquartered in Manassas, Virginia. The presentation was very successful and led to discussions with the World Bank on establishing a cooperative initiative in Nigeria, as reported earlier.

Activity 5: OCDC Legal/Regulatory Collaboration

A contract was executed with a Washington-based law firm, Spiegel and McDiarmid, to develop a framework document as the major output of the Cooperative Legal and Regulatory Initiative ("CLARITY"). The purpose of the initiative is to establish a set of guidelines for good cooperative law, and also to assist each participating CDO in addressing its own country-specific priority issues. The project will be carried out with the fiscal administrative support of OCDC under the supervision of the CDO committee in which NRECA participates. Each of the eight CDOs has contributed funding for the initiative, whose first stage is scheduled to end March 2006. Spiegel will initiate work with a series of in-depth CDO interviews and data collection; a session with NRECA has been scheduled in early June. A copy of the project scope-of-work can be found at Attachment 3.

ATTACHMENT 1



NRECA International Ltd.

Your Touchstone Energy® Partner 



Electrification Program Development in Vaishali and Muzaffarpur Districts

**Submitted to:
Government of Bihar**

**Submitted by:
NRECA International, Ltd. &
International Finance Corporation, CAS**

March 2005

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1. Introduction & Overview

The International Finance Corporation (IFC) and NRECA International, Ltd., a subsidiary of the National Rural Electric Cooperative Association, (NRECA), are pleased to present to the Government of Bihar (GoB) this proposal for development of a rural electrification pilot program in selected areas of the districts of Vaishali and Muzaffarpur.

The Advisory Services Department (CAS) of IFC and NRECA offer a fully equipped and experienced as well as very motivated team to work with the GoB and local communities in Vaishali and Muzaffarpur to develop sustainable electrification projects. The objective of these projects is to deliver reliable electric power and increase the level of economic development in the local area through productive uses programs that leverage the value of the electric power for light industrial, commercial, and agricultural applications. This program is to be offered to the GoB as a joint initiative that integrates NRECA's extensive cooperative-based experience in rural electrification with CAS's global experience in structuring and implementing successful private/public transactions in the power sector. Our unique partnership enables us to present a coherent and comprehensive picture of how to render rural electrification sustainable. Our respective qualifications are included in Annex 3 below.

The NRECA/CAS partnership (the Partnership) is capable of developing and implementing model rural electrification pilot projects in the Vaishali and Muzaffarpur districts that could be replicated throughout the State. These model pilot projects will be community-based in their orientation and ownership, with public and private sector participation in financing, construction, operations, and management. NRECA/CAS proposes a specialized, private, rural electrification franchising enterprise mechanism for developing, operating and monitoring the Vaishali and Muzaffarpur pilot projects. The franchising structure will then be in position to scale up the pilot projects to a state-wide program as well as create a longer-term institution which will permit centralized purchasing and technical assistance passing the benefits of economies of scale to the smaller individual utilities. The rural electric enterprises to be developed in these regions will combine elements of a local consumer-owned electricity distributor-retailer, together with professional electric distribution utility construction and management service providers, all under the aegis of the franchise mechanism.

This proposal is divided into three sections. The first section contains a general description of the rural electrification paradigm and is based on a proposal we provided to the Government of India in October, 2004. The second section describes what we observed and discussed during our visit to Bihar in December, 2004 and how the general paradigm could be applied to the Bihari case. The third section outlines the Scope of Work for the IFC-NRECA advisory work as well as pricing and timetables.

2. Objectives and General Approach

The primary objectives of the proposed advisory services is (i) to initiate the design and the implementation of the Vaishali and Muzaffarpur districts demonstration projects; and (ii) to establish an institutional framework for the replication of these projects state-wide.

International experience as well as experience in Indian states such as Orissa, have demonstrated that rural electrification is essentially a very different business from urban distribution. The financial and economic characteristics of rural electric service i.e. low revenues and high service costs, are clearly different than those of urban utilities. Consequently, rural utilities require unique financial and technical approaches by utility investors and managers as well as unique policy frameworks and implementation by Governments. The low revenues of rural areas are a function of both the lower population density and initially lower per capital energy consumption in these areas relative to urban areas. Generally, when urban and rural utilities are integrated, utilities must charge unjustifiably high urban and industrial tariffs in order to cross-subsidize more costly rural service in order to earn an acceptable rate of return on investment. This situation is a powerful disincentive for the urban utility investor against rural-area investment, and it is a strong argument for separating urban and rural distribution.

In view of these high cost/low revenues characteristics, the commercial sustainability of the rural electrification therefore requires carefully designed policies and programs to establish a private-sector and /or Public-Private Partnership (PPP) approach. While such solutions are possible, they are not easily achieved, and therefore must be carefully designed and implemented; however, workable alternatives exist.

Based on the United States experience in rural electrification, which began in the 1930's, global rural electrification experience since the 1960's and World Bank research we have developed a new paradigm for rural electrification project. This collective experience has demonstrated that:

- **A Separate and Specialized Rural Utility:** Since rural electrification is significantly different from urban distribution, most successful programs has entailed specialized rural utilities whether they be private or public sector.
- **Community involvement:** A demand-driven orientation encompassing organization, technology and finance--- giving the consumer some decision-making and management responsibilities more often leads to efficient resource selection, use and capital recovery. Community involvement is a key element in developing a politically sustainable program particularly reaching consensus on tariffs and assuring improved bill payment discipline. The nature and "intensity" of the community involvement is a function of the local sociological and political situation.
- **Appropriate Technology:** Technology and energy supply selection according to local demand conditions in a life-cycle, least cost evaluation model.

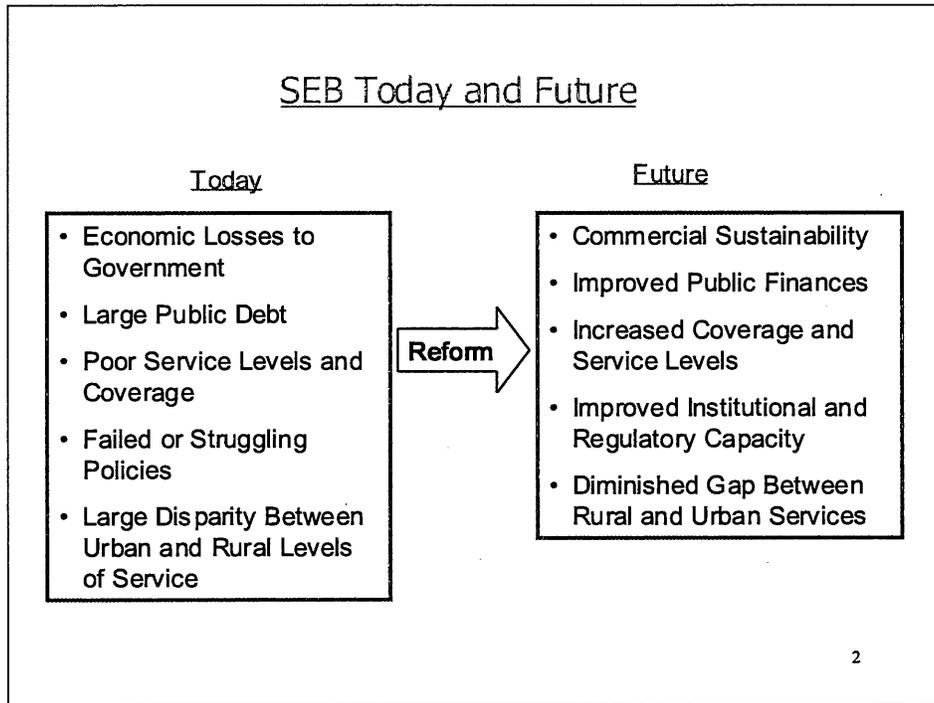
- **A Flexible Policy Environment:** A policy environment that fosters dedication to the task of rural electrification as a unique investment sector along with creativity and flexibility in developing solutions to local needs;
- **Adequate Tariffs:** Tariffs and service fees that assure at least cost recovery of cash operating costs (i.e. O&M and fuel costs).
- **Targeted Subsidies:** In view of the low ability to pay of the rural consumers together with the comparatively high delivered cost of power, subsidies are initially required but these have to be properly structured to efficiently reach targeted elements and to not act as a disincentive to the power provider.
- **Technical Standardization and Regulation:** Technical design and operational standardization together with the means of assuring compliance with standards.
- **Long-term funding:** Appropriate “patient” investment capital.
- **Demand development and micro-credit:** Consumer education and extension assistance to promote demand development as well as consumer credit for appliances and connection.
- **Institutional Support:** Adequate institutional support (technical and managerial) and oversight of rural service providers; and,
- **Rigorous post –loan disbursement follow-up:** benchmarking, monitoring and performance measurement, evaluation and business model adjustment as needed.

There is no one single uniform approach that can be applied to this very complex problem in every country or even sub-jurisdiction. The appropriate solutions should draw from a full range of business models including cooperatives and other organizational approaches for aggregating consumer communities, franchising systems, local entrepreneurs, NGOs and local and international private sector service providers. Hence the design and implementation of good and innovative rural electrification solutions includes ensuring that: (1) key elements outlined above are included in the design; (2) institutions with the appropriate capacity are assigned the appropriate role; (3) the performance criteria of any agreements are out-put oriented and clearly defined and measurable; (4) incentives are aligned with good performance, and; (v) adequate technical, managerial and political support are provided.

Discussion of Program Objectives

It is important to commence any advisory process with extensive preliminary discussions with the state government and communities at the block level in order to (i) reach agreement about the key objectives of the program (ii) to prioritize those objectives and (iii) to fully explain the process. Figure 1 below represents the starting point for that kind of discussion on outcomes. These intended results will permit a dramatic improvement in the Government’s fiscal position relating to rural electric distribution than would otherwise occur, while establishing the institutional basis for meeting rural electrification expansion goals in a realistic and practical framework

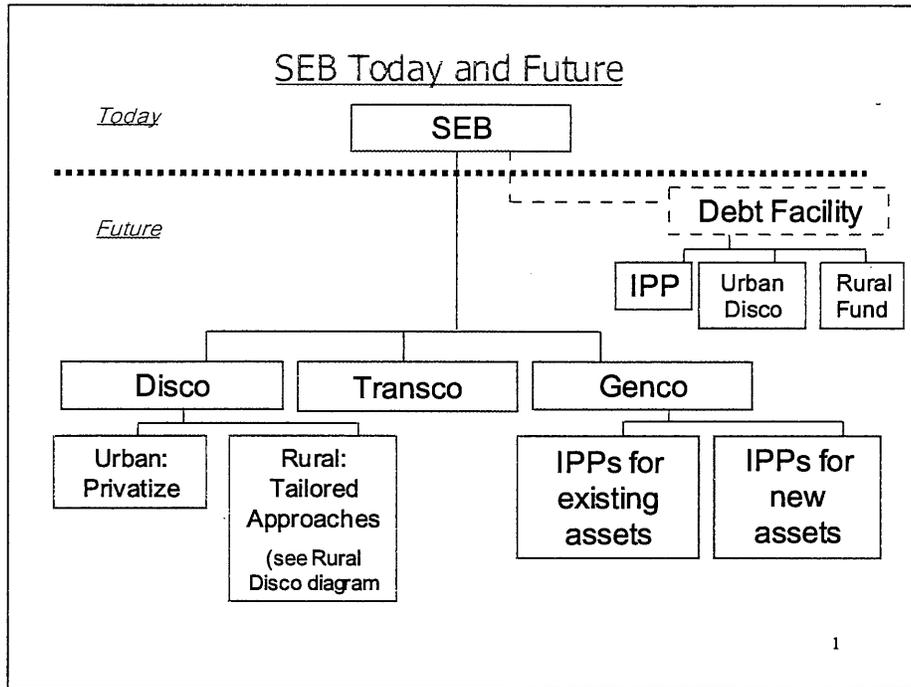
Figure 1 – Discussions Focus on Future Results



Broader Sectoral Framework

The proposed collaboration with the Bihar MoP is designed to develop practical solutions for implementing the state government’s rural policy decisions. The next step in this process is to separate the rural and peri-urban from the urban distribution so appropriate emphasis and policies can be implemented in the rural and peri-urban areas without distraction from the high demand urban areas. Figure 2 below presents an illustrative approach to the restructuring of an SEB which is generally consistent with the Electricity Act of 2003.

Figure 2 – Practical Solutions for Policy Implementation

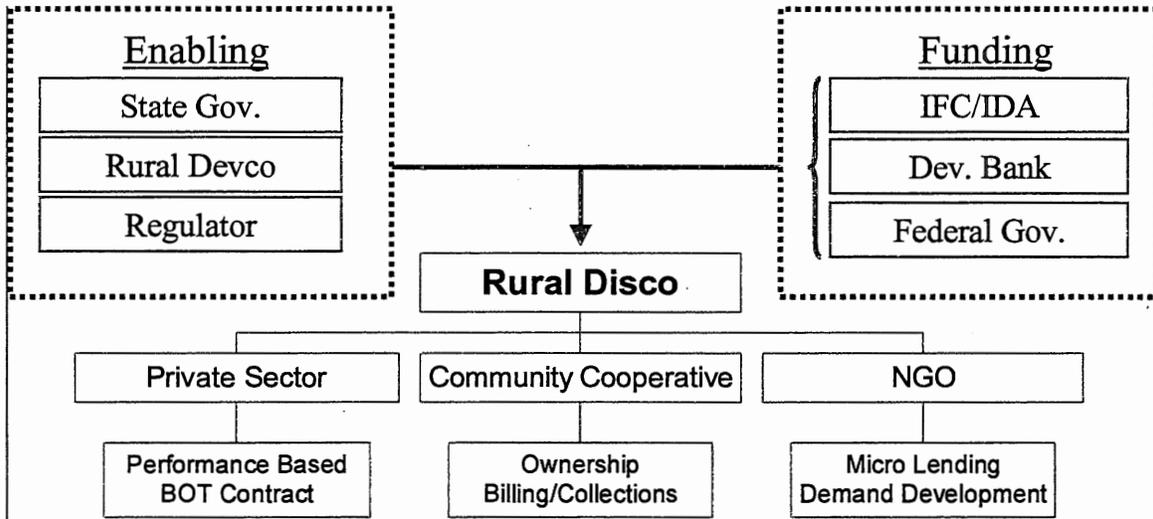


A Proto-type Rural Electric Distribution Enterprise.

The primary goal of the proposed advisory services is to establish two functioning, self-directed rural electric enterprise developers, capable of systematically expanding rural electricity service throughout the state in a private-sector business model. The resulting enterprises will be equipped with a demand-based organizational approach and will be capable of delivering a variety of services including energy services, financial services, agricultural/rural development extension services relating to electricity use as well as a full range of capacity-building and organizational support services for the local community player. This structure can suited to either “greenfield” or “brownfield” rural service territories.

One potential configuration of the rural distribution services utility is provided in an example below (see Figure 3). Functions would be divided among private sector companies, community cooperative, non-governmental organizations (NGOs) and the public sector.

Figure 3: Rural Distribution Services Company



More specifically,

- In addition to providing the legal and policy environment, the public sector provides the technical construction and operating standards and then subsequently the technical and economic regulation as well as subsidy funding if required.
- The development bank's role as primary source of funding can also provide technical regulation in the early stages of the program until such time as the state level regulators have matured.
- As mentioned earlier, the political and economic sustainability of rural electrical service requires community involvement in the program. The character and intensity of role played by community cooperative is function both of the initial socio-political reality on the ground and time. Initially, it is envisaged that the community will at the village level undertake invoicing, bill collecting, and take an equity position or perhaps, full ownership of the assets.. At later stages, technical operation and broader commercial operation of the utility could be transferred to a community-owned entity such as a cooperative.
- In the early years of the utility at least, it is envisaged that a private sector will undertake the technical operation of the rural utility as well as construction of the system in greenfield sites.
- In rural communities, electricity demand per capita as well as the ability to pay are initially very low and demand is usually "concentrated" to peak time in the evening. The longer term economic sustainability of the system as well as the broadening of the development impact of the electricity provision requires "demand development" which entails increasing per capita consumption and smoothing out the need for power throughout the day. This demand development

function usually includes “consumer education” as well as micro-lending so that rural consumers can buy appliances both productive and household in nature and perhaps also provide funding for connection fees. Initially, this role is generally played by an NGO, at a later date it can be undertaken by the cooperative.

Scaling up from Pilot Projects to State-wide Programs

The second element of the IFC-NRECA rural electrification program consists of establishing the institutional framework and principles for scaling up the pilot projects to a state-wide program.

The institutional framework could take various forms such as a “franchising” agency, a rural electrification agency, a “cell” in the state MoP, etc. (for the benefit of this discussion, we will simply call this institution the “Agency”). The role of the Agency will include:

- (i) **Identify Potential Block-Scaled Franchises:** The Agency will work with WBSEB and/or its successor distribution companies on identifying suitable locales for a block system or otherwise on an individual scale that assures economic feasibility. The Agency will offer the communities the opportunity to create a distribution-retail franchise in the designated area based on a comprehensive package encompassing standardized technical design, organizational templates, operating and accounting standards, and financing.
- (ii) **Recruit Private Constructor and Operator:** The Agency will recruit private utility construction and operations service provider(s) to take multi-year, build operate & transfer (BOT)-type contracts for the construction and initial management of the distribution system. The contracts will include most but not all of the operational responsibilities, leaving bill collection and commercial operations to be carried out by the consumer-owned franchisee. The management contract will terminate at the time that the franchise is transferred; however, the contract may be renewed by the newly independent franchisee, or alternatively it may retain its own manager, a determination to be made jointly with the Agency at the time of transfer.
- (iii) **Provide Operational Support:** The Agency will provide direct support and oversight to the local franchisee through all stages of its development including consumer education, etc., as a specific provision of its enabling charter. The Agency’s motivation to perform its duties would be tied to milestones in its enabling charter with the State Government, backed by financial incentives. These milestones would in turn be imposed on contracted service providers as well as the local franchisee (consumer-owned electrification corporation). It would involve strict conformance

with established technical and operating standards, backed by inspections to assure compliance of service providers and vendors; close monitoring of the franchisee's formation and initial operation which may include commercial functions (collection of billings and service cut-offs, etc.) and so on. The U.S. Rural Electrification Administration deployed a similar model that resulted in the formation of some 1,000 electric cooperatives during the period 1935-65.

- (iv) **Arrange Funding:** The Agency's business approach will be to obtain capital funds from communities, which agree to participate by establishing a franchise under the Agency's rules and sponsorship. The Agency will leverage these funds with sources provided by or through the Agency's sponsors, and take temporary oversight responsibility for managing contractors on system construction, management and operations in newly established concessions. In this sense, the prospective community franchisees will be required to obtain a financial stake in the Agency as a condition for electrification.

- (v) **Transition to Common Service Provider:** In time, the Agency will be majority owned by the company's independent franchisees, which will arise from their gradually accruing a collective equity stake. The Agency will gradually transition from franchise construction and development to providing a common range of services to franchisees, including: management and technical training, bulk procurement, common financing services, wholesale power supply contracting, strategic planning for franchise services diversification, access to new technologies and best practices, government representation, etc. all as a private sector business system, again very similar to the model that evolved in the U.S. During this transition, the Government's direct stake in the Agency will be disinvested.

For illustrative purposes, we have included in Figure 4 and 5 below the structure for a rural electrification agency that we have been discussing with the Government of West Bengal. Figure 4 represents the Franchising Agency at the Program Development stage, while Figure 5 represents the Agency at the Maturity stage.

Figure 4 –Proposed Model: Development Stage

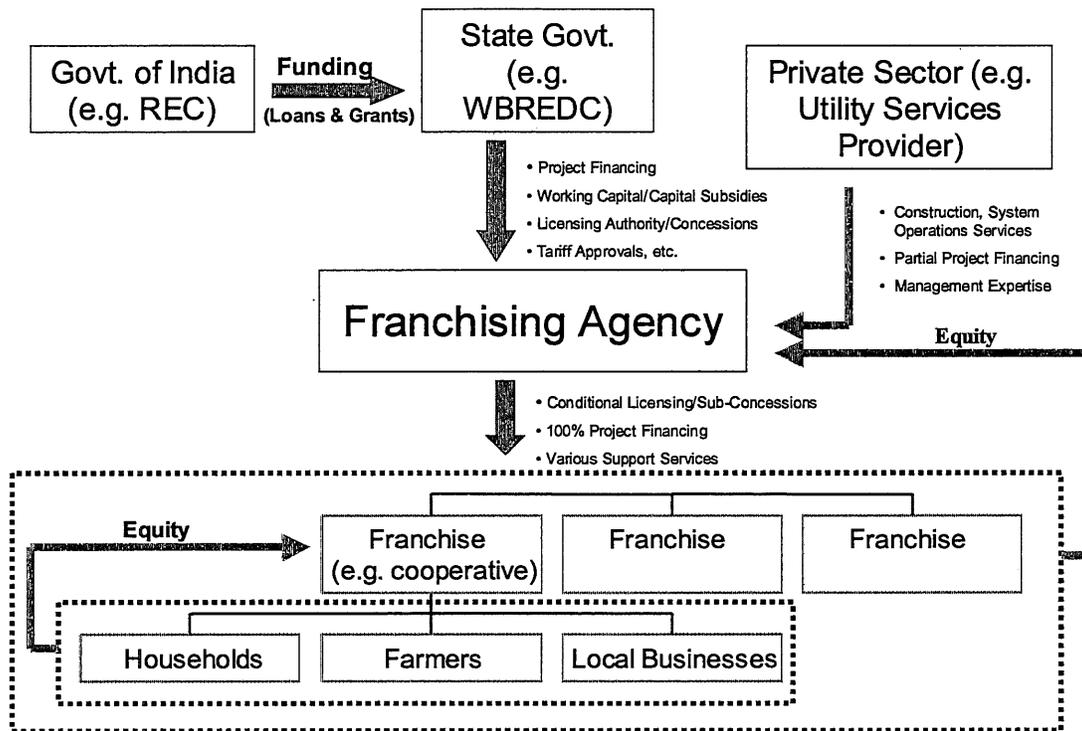
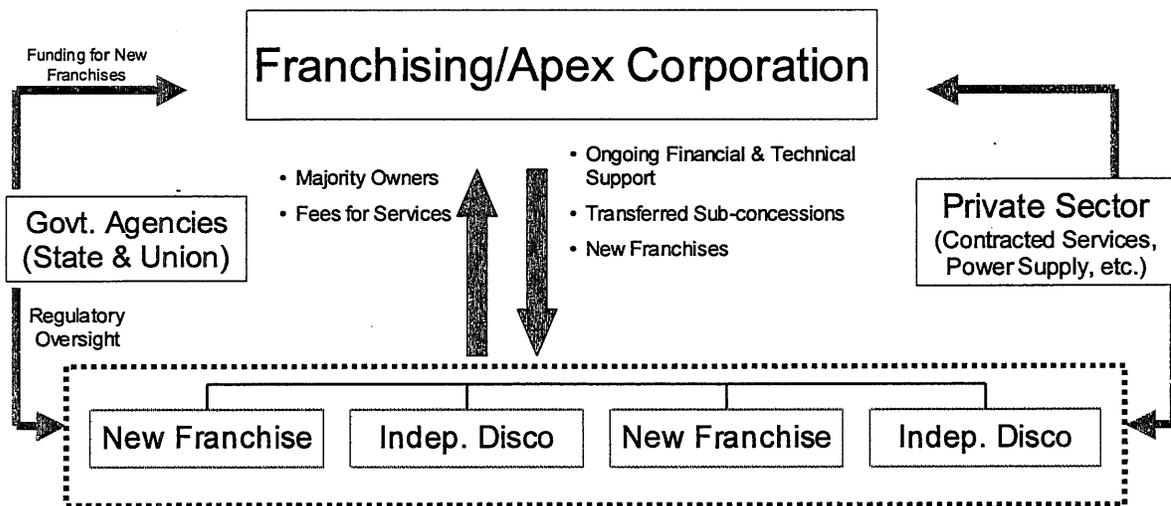


Figure 5 –Proposed Model: Maturity Stage



3. Preliminary Reflections on the Situation in Bihar

NRECA/CAS, in collaboration with BSEB, the Bihar State Co-operative Milk Producers' Federation Ltd. (COMFED) and the Power Grid Corporation of India Ltd. (Powergrid) conducted a preliminary inspection of villages and dairy cooperatives in some areas of the districts of Vaishali and Muzaffarpur in December 2004. Two dairy cooperatives, one village recently electrified by Powergrid under an REC program and a dairy processing plant were visited. The visit revealed that an important synergy can potentially take place between the dairy cooperatives and the BSEB/Powergrid rural electrification program, with the State and NRECA/CAS acting as catalytic agents in this relationship.

The preliminary impressions we formed are summarized below:

- Although electricity lines exist in many areas of Bihar, most of the rural homes are not electrified. Only 25 to 30% of the state's dairy cooperative villages, for instance, have access to electricity service¹ and visual inspections suggested that within-village rates of penetration are less than complete. It can be assumed that the situation in villages not served by dairy cooperatives is either the same or worse, given the higher level of income-generating economic activity in most of the villages that do sustain a dairy cooperative in the State.
- The BSEB/Powergrid electrification program is building new transformation capacity and line extensions into rural villages and conducting low tension line development within the villages, down to service drops and meters.
- At the present time, these new rural electric systems are supposed to be handed over to the State Electricity Board for their operation and maintenance. However, the SEB acknowledges severe difficulties at the commercial and operational levels and this throws into question both the optimal utilization of the new lines and their proper long term maintenance.
- Following up on suggestions from the State of Bihar authorities, NRECA/CAS held a first round of consultations with dairy cooperative directors at the village level, dairy plant managers, COMFED and Powergrid representatives, the State Energy Department and State authorities who agreed that the organizational infrastructure of dairy cooperatives can be used to promote user participation in order to build a parallel electric cooperative system without unduly stressing the dairy cooperatives to the point of impairing their performance.

¹ Energy Department, Government of Bihar, personal communication 2004

- There appears to be significant potential for finding areas where the dairy cooperative social substrate can be used to build rural electric cooperative corporations. In many cases these the areas where the BSEB/Powergrid program are constructing the system overlap with the presence of working dairy cooperatives. A sample of 36 dairy cooperatives in the Saraiya block of the district of Muzaffarpur revealed that half of the villages served by these cooperatives were being contemplated in a Powergrid/REC rural electrification project.²
- In discussions with the **villagers, they expressed a strong interest in receiving stable power** which they were prepared to pay for if the service was reliable, of good quality and supplied regularly at appropriate times (early morning and early evening). They are not prepared to pay for erratic service so power supply is going to be very important. In turn, they also indicated that they would be prepared to maintain the lines in the village, invoice and bill within the village. They recognize that reliable electric power service will greatly enhance dairy production, small industries and the quality of life.

Based on these preliminary impressions, we have developed the following general outline of how we would proceed:

- **Identify Overlap Areas:** The initial idea is to identify sufficient areas of overlap between the BSEB/Powergrid rural electrification projects and the existence of successful dairy cooperatives, in order to create electric cooperative corporations that would extend the scope of their activities to surrounding areas as well.
- **Work with Dairy Cooperatives to Identify Village Leaders:** For the Vaishali and Muzaffarpur pilot projects, the COMFED would be willing to assist in the identification, contact and mobilization of dairy cooperative leaders at the village level. Through their good offices, meetings would be arranged and the objectives and modus operandi of rural electric cooperative corporations explained and discussed. When a consensus and a critical mass at the village level are obtained, rural electric cooperative corporations can be created and empowered to conduct such tasks and activities related to electricity service as are appropriate to their current and prospective levels of competence, possibly pertaining to commercial aspects.
- **Tiered Cooperatives:** NRECA/CAS experience shows that minimum sizes for rural electric cooperatives vary depending on cultural and social characteristics and most importantly on the kinds of commercial and distribution tasks assigned to them. A rural organization entrusted with metering and billing only can be smaller than a rural utility that develops line

² Patna Dairy Project, Personal communication 2004

extensions and system improvements. In the cases of Vaishali and Muzaffarpur, the need and possibility for developing a “tiered” cooperative system exists, with increasingly larger organizations performing more complex functions at the higher levels.

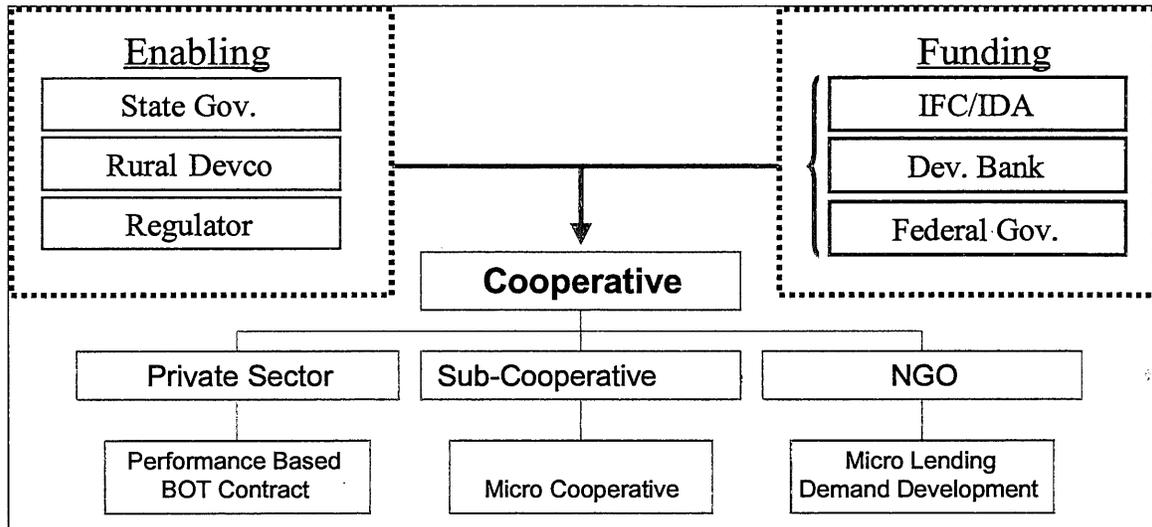
- **Village Level:** At the grass-roots level, roughly corresponding to that of a dairy cooperative comprising from one to three villages, small cooperative organizations, call them “micro-cooperatives,” can be created to perform the commercial tasks of metering, billing and collecting. These organizations can have anywhere between 100 and 500 household members. They seem to be justified by the high population density of the State and the high degree of social cohesion observed at the village level.
- **Panchyat level:** At an intermediate level, roughly corresponding to that of a “panchayat” and in a town where competent electricians can be engaged, a “sub-cooperative” or cooperative agent could be formed and entrusted with connections and disconnections, line maintenance, low tension densification and transformation capacity improvement. These sub-cooperatives would represent between 1,000 and 2,000 households, approximately. Their existence could be justified by the need to provide technical services not available at the village level without unnecessarily centralizing some of these activities at the higher, i.e. “block,” level. This intermediate level may be dispensed with, based on specific studies to be conducted once the regions to be part of this pilot program are configured.
- **Block Level:** Finally, and at a level roughly corresponding to the “blocks,” a rural electric cooperative could be created to perform all pertinent tasks, such as system master planning and implementation, technical and non-technical loss management, the adoption and execution of line extension policies, power and energy trading, customer services, the implementation of a user ownership mechanism and the responsibility for meeting ongoing benchmarking programs. These rural electric cooperative corporations would include representatives from lower level cooperatives and correspond to a minimum of 10,000 households. In the future, these higher-tier organizations representing village level cooperatives can assume legal ownership of the systems. Other types of cooperatives and village level organizations could conceivably also be used as starting points in other parts of the State. The goal is to put in place a system that is representative, flexible and financially viable at all levels. Financial viability applies not only to recurring costs but also to capital investment, since the long term objective is to provide for user ownership of the system.
- **Financial Sustainability:** The systems built under the BSEB/Powergrid program are essentially donated, but the State may want to recover a portion of the capital investment in order to leverage other programs and donors in the future. Any system improvement above and beyond the investments carried

out by the BSEB/Powergrid program, such as perhaps system protection and sectionalizing, might be also covered by REC grants or it will need to be financed and paid back under separate arrangements. User ownership does not mean a hand-out, but a sustainable program that facilitates rural electrification while enforcing an appropriate customer service and utility management discipline; the pilot program should be willing to do what it takes to put in place rural electric systems that provide the opportunity to achieve such an objective.

- Given reasonable assumptions for cost of funds and power on the expense side and consumer tariffs on the revenue side, the cooperatives should be able to repay a portion of the capital cost of investment and the full cost of wholesale power, as well as the full operating cost of the distribution system. In the last instance, the extent to which capital repayments are possible will depend on the financial analysis. As a demonstration project, grant funding to support initial technical assistance and institution-building at the state and local levels is also envisioned.

Developing an authentic sense of ownership is needed in order to ensure legitimate user participation. When conducting the pilot projects, mechanisms for allowing user ownership will be explored and implemented. This will be the culmination of a process that will begin with project identification and include the launching of rural cooperative corporations, their organizational development, the apportioning of tasks at different levels, the provision of resources to complete system improvement, the delivery of operations, maintenance, energy trading and management expertise, small utility planning and broader representation at the State and National levels, features that will be provided by the NRECA/CAS technical assistance program until such time as a fully operational Franchise System for India, such as that proposed to the Rural Electrification Corporation Limited, is implemented. In other words, while a National electrification franchise system is put in place, the NRECA/CAS team will fill in for all of the functions of such a system, including planning, developing the templates and benchmarks, arranging for the financing, supervising the procurement, assisting in project implementation and monitoring.

Figure 6: Possible Structure for a Rural Distribution Utility in Bihar



Note: the sub-cooperative level may just be an agency of the cooperative.

4. Scope of Work

The Bihar demonstration project will be implemented under a general agreement between the Partnership and the State, together with endorsements by REC and/or other participants on the government and the private sector side, such as Powergrid and COMFED, with the Partnership as the implementing agent responsible for doing the design work, recruiting private-sector players (engineering, system construction and operations, banking/fiscal agent, etc.). We envision the establishment of a formal project working group with representation of each of the major financial participants.

NRECA/CAS proposes to accomplish the proposed project as part of a four-phase work plan that will be conducted over a three-year period. The project team will consist of a team of NRECA /CAS U.S. and international electrification experts and specialists, and local consultants who will be employed to perform most of the field data collection and selected analyses. To the extent possible, some tasks will be performed in parallel, in an effort to conserve time and bring the project to fruition as soon as possible.

The project will evolve through four basic phases, each of which includes several sub-tasks. The four phases are as follows:

1. Project Preparation;
2. Detailed Due Diligence & Structuring;
3. Project Implementation; and,
4. Discos Stabilization & Technical Assistance.

These four phases are naturally inter-linked and co-dependent. For example, demographic data collected during initial field work, combined with initial field studies and load data will be the basis of the engineering design and analysis. Data collected in the initial phase of project implementation on potential consumers' willingness to pay for electricity will impact the potential tariff that will be developed for each service territory. Since one of the strengths of this pilot project is its capacity to "piggy-back" on the BSEB/Powergrid rural electrification program, additional subsidies are not anticipated. Tariff ceilings as determined by the willingness to pay analysis will yield revenue projections that will set boundaries on utility financial sustainability.

The Partnership believes that the proposed pilot project in the Vaishali and Muzaffarpur districts could serve as templates for subsequent projects in Bihar. Future projects will thus be able to leverage knowledge and materials developed during this initial project, improving the efficiency and timeliness of all phases of project development.

It is important to note that coordination with GoB, as well as senior management and field staff of the BSEB will be essential to the completion of Phases and individual tasks on a timely basis.

4.1 Phase I: Project Preparation

The first phase of any proposed pilot project will commence with preliminary site visits to ascertain the attitudes and readiness of local stakeholders to participate in the program. Upon completion of these exploratory discussions, IFC/NRECA will then undertake preliminary due diligence to determine if essential criteria are met for project development. For all proposed pilot projects, NRECA/CAS would complete the following:

1. Interview key stakeholders including representative community and business leaders regarding the present electricity service provider, improvement opportunities, and conditions, development priorities, etc. in the selected demonstration project service area, and follow up on requested information and documents.
2. Conduct preliminary assessments within each proposed project area of the following:(a) current consumer demographics and trends, (b) opportunities to increase electricity usage, (c) consumers' distributed and other energy alternatives, (d) willingness-to-pay, billing and collection mechanics, and (e) consumer attitudes on pricing and quality.
3. Hold preliminary stakeholder discussions both at the state (SEB, MoP, ERC, Genco, Transco, etc.) and community level in proposed blocks.

At the conclusion of this phase, a detailed proposal will be delivered to the GoB and a formal contract will be entered into between the Partnership and the GoB for execution of the subsequent three phases of project development.

4.2 Phase II: Detailed Due Diligence & Structuring

Phase Two of this Scope of Work will entail standard project due diligence on the part of the partnership, including: data collection and analysis of electricity demand, construction plans and capital expenditure requirements possibly including power investment, power supply options and issues, revenue requirements and pricing, etc. In view of the importance of local communities' "buy-in" to the success rural electrification, this standard due diligence process will be modified to include the following:

1. Extensive local stakeholder consultation; and
2. An assessment of the capacity of local institutions to take any formal role in the program either immediately or over time

The completion of Phase Two will be signaled by the issuance of a Due Diligence and Strategic Report, which will outline the proposed structure for the specific demonstration utility(ies) together with an identification and analysis of the decisions and options the various levels of government need to make.

The detailed due diligence conducted in Phase Two will be critical to the development of appropriate bid and transaction documents that will be developed and executed during Phase Three. Annex 2 provides greater detail on the specific tasks that will be accomplished as part of this Scope of Work.

4.2.1 Market Assessment: The Partnership will conduct a comprehensive market assessment that includes demographic surveys to determine existing consumption and expenditures on traditional energy sources, as well as households' stated desire to pay for electricity if it were made available to them. The resulting data will be analyzed to estimate project connection rates, revenues and operating costs, and the amount of subsidy, if any, that would be required to ensure the financial viability of the project.

4.2.2 Technical Assessment: The technical assessment is a critical path task that will encompass the mapping of the existing distribution system, topographical features using satellite imagery, population centers, and other relevant demographic data using a Geographical Information System (GIS). The engineering team will develop a set of distribution system standards that are designed to improve efficiency and system performance will be developed to replace the existing system standards. Finally, the engineering team will design an optimal system layout that will meet existing and project load in the Project Block.

4.2.3 **Legal Structure:** In Phase Two, the relationships between the proposed organization, other sector entities and state government agencies will be defined and discussions held with other stakeholders to refine the scope of the proposed agency. The development of the proposed structure for the Franchising Agency will proceed based on the role envisioned in Section 4.1 above. The proposed role of the Agency would be the coordination of technical assistance and financing to the consumer Franchises and the Agency's charter would be specific to promotion of rural electrification.

As with the apex organization, the structure envisioned for the new rural utilities will be a consumer-owned model referred to as a Franchise and meetings will be held with stakeholders to confirm and more fully define the model. A tentative set of guidelines for formation of a Franchise will be prepared.

The result of this task will be a set of documents that defines the organizational structure of the Agency and the Franchise and presents the requirements for staffing and their qualifications. Detailed preparation of documents specific to creation or registration of a particular organization will be left for the implementation phase.

4.2.4 **Business Plan:** The Partnership has developed many financial and economic models in recent years to perform analyses of identical scope and purposes. The methodology will be adjusted to suit the specific needs of the Bihar rural electrification project. The model will be tested using actual performance data that is readily available from an existing distribution system in Bangladesh, where results are likely to be similar to Bihar's experience. Comparing model results with known financial performance will allow the model to be calibrated. The team will further design a synthetic utility model that will be the basis for determining operating costs, based upon projected maintenance and operating staff requirements. The model will be developed once the engineering cost estimates and tariff analyses have been completed.

4.3 Phase III: Project Implementation

During Phase III, the consumer franchise will be formed, the BOT contractor will be recruited, and the financing agreements executed, among other tasks, using the documents and plans developed in the previous Phase. The formation of the consumer franchise, material and equipment procurement, and contract execution is expected to take approximately six months, depending upon material procurement and delivery. Given that most of the project materials can be procured in India, transportation and delivery are not anticipated to present difficulties.

4.3.1 **Establishment of Consumer Franchise** NRECA/CAS will identify and deploy a local team in the community to carry out the formal task of recruiting consumer-members to the Disco. This is a critical process and will entail

extensive education to explain the organizational setup, consumer responsibilities and benefits, etc. The organizational development and nurturing process for the community corporation is a long-term proposition and will be discussed in more detail in describing the final component, below. The Partnership will work very closely with the Disco to assure its compliance with its roles, smooth interaction with the BOT, management of shareholder meetings and board elections, etc.

4.3.2 *Financing and financial management agreements* : Formal loan and grant agreements based on understandings reached in the previous stages will be transacted. It is anticipated that a local private bank with a rural customer base will be recruited to handle the administration of funds and serve Disco operations according to the accounting system designed by the Partnership to facilitate accurate performance monitoring. In addition to the project Disco establishment, a modest revolving credit will be created to support house-wiring and productive use equipment expenditures by qualified Disco members.

4.3.3 *BOT contract* :The distribution system design that is developed as part of the Technical Assessment conducted in Phase Two will yield specifications and materials lists needed to begin the procurement process. Immediately upon completion of the design process, procurement will commence. For the sake of time efficiency and cost saving, we envision a simplified implementation process for recruitment and procurement. The tender documents prepared during the previous step will be very detailed in terms of the contractor's obligations, construction standards and basis for approval of completed works, operating plan including milestones and incentives, etc. NRECA/CAS proposes to recruit two or three qualified bidders to offer proposals, subject to written pre-qualification criteria and approval by the State government. The Partnership will be in charge of the bid selection and subsequent negotiations, again subject to the approval of the State government for key decisions.

4.3.4 *Power purchase agreement*: NRECA/CAS will negotiate a power purchase agreement (PPA) with the SEB or State grid-co on behalf of the Disco and will also seek a long-term solution for power delivery in the region. The power supply issue is vitally important both in terms of electricity pricing and also service quality.

4.3.5 *Utility concession and tariff approvals* The Disco's operating authority will be granted under a sub-concession but perhaps that may not provide for limited service rights in Basanti block. This licensing could be granted under the existing concession authority of the BSEB. A tariff proposal will be developed and submitted to the regulator following a consultative process with all stakeholders.

4.4 Phase IV: System Operation and Sustainability

Once the various tasks associated with the project due diligence and implementation are concluded, the Partnership will be engaged in the management and oversight of project

construction and the development of the institutional capacity of the new utility franchise. The development of the former is critical because the physical infrastructure is the basis of the new utility, but the development of the latter is equally important because without sound management and commercial operating procedures, the new utility will not be an effective and viable ongoing economic enterprise.

The complexities of assisting a newly established institution to reach financial sustainability over a relatively short period of time should not be underestimated. Beyond hiring and training staff, the new entity has to be incorporated as a particular kind of business institution that will serve the specific needs and purpose for which it has been established.

NRECA/CAS will provide guidance on the following:

4.4.1 Construction Monitoring and Oversight. We will closely supervise and monitor the construction phase including inspections on procured materials, constructed works, and incremental approval of funds disbursements. During the operational stage, we will also closely monitor the progress of the contractor to assure compliance with schedules including consumer connection rates, billing and collection rates, service quality performance (outages etc.), and disco financial performance. Annual audits will be performed by an independent accounting agency. We will be responsible for presenting quarterly progress reports to the project working team.

4.4.2 Board formation and training. The method of selecting board members is critical to assuring that the new utility will be governed with transparency, integrity, and wisdom. The means by which board members are selected, of course, will depend on whether the institution will be a cooperative, a municipal corporation, or a user association, for example. User associations and cooperatives have elected boards, while board members for private and public corporations are named on the basis of ownership of shares or on the basis of standing in the community (for public corporations). Whatever institutional format is followed, board members will require training to understand the role of the board in setting policy and the need to allow management to administer the day-to-day affairs of the utility.

4.4.3 User/member orientation and information campaign. Future consumers/owners will need to understand the purpose of the new electric utility, the basis on which it is being formed, and will moreover need to understand the basis for establishing electricity tariffs. These functions are normally addressed by focus group meetings, by doing house-to-house interviews, and by printing information briefings and distributing them to community leaders and members

4.4.4 Developing by-laws, policies, and procedures. To assure that management and staff understand their relative duties and responsibilities, and to provide the necessary guidelines to better manage administrative, commercial,

and technical service requirements, the NRECA team will develop and document the new utility's by-laws, as well as policies and procedures to provide guidance for operational purposes. Policies and procedures combined with training and technical assistance will set the stage for competence in all necessary skill areas to manage utility operations.

4.4.5 Board elections/board selection. In the event a user association or a cooperative is formed, a process to nominate and elect the initial set of board members will need to be organized and managed. This process will require a period of in-depth discussions with community leaders to advise them of the responsibilities and duties of board members, and what sort of minimal life experience in business and leadership is necessary for effective leadership. Only those members in good standing will of course be allowed to participate in board elections, but all members will need to understand how the process will be managed, as well as their rights and responsibilities in the election process.

4.4.6 Master plan for future utility expansion. To assure that the utility continues to meet the growing needs of the community, a master expansion plan will be developed by NRECA technical staff to evaluate expected system expansion and the financial demands that result as a function of the expansion,

5. Project Schedule

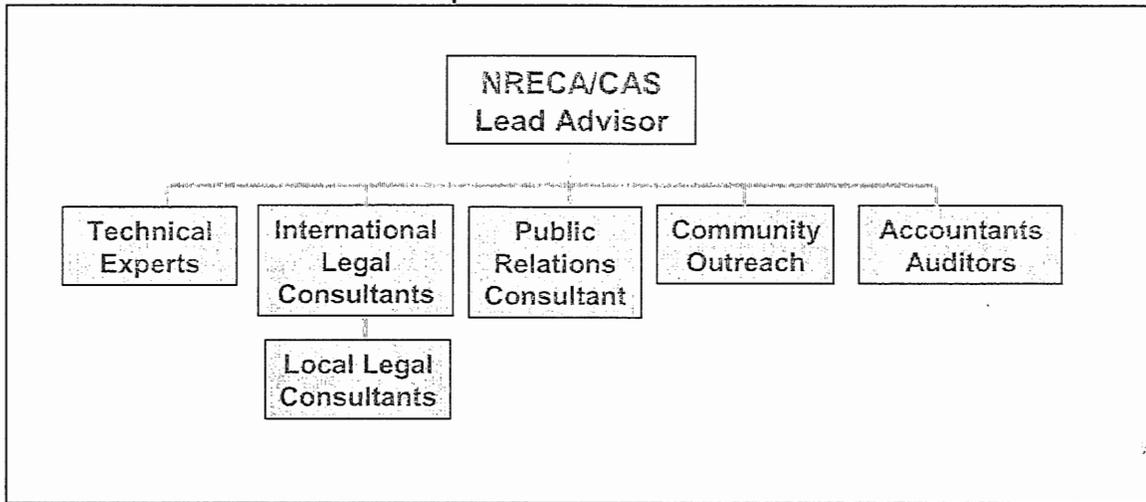
As mentioned earlier, the start-up utility should be established in 18 months subject to reasonably quick government decision-making after receipt of the due diligence and strategic report. Once these decisions are made it will take about 5 months to draft the documentation and bid out the management contract. The advisory mandate then provides for an additional 18 months of technical and managerial support to the start-up utility. A detailed Gantt chart is available in Annex 1 and is summarized below.

Phase	Months
Phase 1 Project preparation	1-3
Phase 2 Due Diligence and Business Plan	3-12
Phase 3 Contracting	13-18
Phase 4 Start up assistance	18-36

6. Project Team

The project team will consist of IFC and NRECA staff as well as consultants. The consultants will include lawyers, an NGO. We will arrange on a best efforts basis donor financing for the consultants. The diagram below shows the general project team structure.

Proposed Team Structure



Annex 2 – Franchise Structure & Application to India

Key Elements of a “Franchise System” for Rural Electrification in India

I. Community-based Electrification Corporations as Franchises

Lessons learned from electrification programs worldwide point to several basic ingredients common to many of the more successful cases, among these being: (i) establishment of a conducive “enabling environment” usually embodied in a strong, independent and singularly-motivated rural electrification agency; (ii) the rigorous application of standards in the design, construction and operation of systems; and (iii) the active participation of the local beneficiary communities, both to assure consumer compliance as well as to create far-reaching linkages between electricity service and community social and economic goods.

One of the most successful experiences was the U.S. rural electrification program under the auspices of the Rural Electrification Administration (RFEA), which created a highly patterned approach resulting in the establishment of some 1,000 almost identical electric distribution intermediaries nationwide that today provide electricity to the people living in 75% of the U.S. land area. These distributors all use the same engineering design, the same construction and equipment specifications, operate under similar legal and licensing authority, use the same system of tariff development, inventory management, accounting and reporting. Just as important, the corporate structures of the vast majority of REA’s borrowers, State-authorized cooperatives (defined as “electric membership corporations” and known by other names in different parts of the country) were also virtually identical. The REA made most of these provisions mandatory as a condition for receiving its financing support and through its standardized reporting and benchmarking format, was able to conduct continuous monitoring. Given the absolute requirement of long-term, low-cost financing to render rural electrification a viable proposition and the virtually unique capacity of the U.S. Federal Government to make this financing available, the effect of the Rural Electrification Act which established this program was to put into place a form of electrification franchising that has since been adapted to other countries with remarkable success.

The most obvious benefit of this approach was that it induced communities throughout the country to voluntarily adopt a rigorous, disciplined pattern of rural electrification design and operation where the government could play a largely facilitative and supervisory role as financier, but not owner-operator. Other benefits became apparent as the program got underway and expanded. These included: the ease of replication; a high degree of operational success due to the standardized operational reporting system that allowed managers and boards to recognize problems and correct them; economies of scale in equipment supply, procurement, inventorying; the ability to train thousands of employees efficiently in a comprehensive range of functions; the relatively easy transfer of financing responsibility from the government to the private sector over time, and other aspects, all under a disciplined private corporate format that today measures as well or better than other privately owned utilities.

In implementing the proposed advisory assistance to the Indian States, NRECA/IFC will draw on this and other global experience in helping the States, in consultation with REC, to devise similar systems of local community corporate development under a rigorously patterned, private-sector approach.

II. Background, Purpose and Philosophy

The aim of the proposed franchise system is to adapt the successful US rural electrification experience to present-day India. The US program was guided by two principles: a) facilitate the creation of rural electric cooperatives and give them every possible incentive and support; and, at the same time, b) enforce a strict discipline of construction, operational, service and financial performance. Specifically, the program consisted of:

- The involvement of rural populations in the development, ownership and management of rural electric service corporations under a standardized grassroots business model
- The provision of adequate technical assistance and financing for these corporations, with terms as long as 40 years and interest rates as low as 2%
- The enforcement of system construction, operations, quality of service and financial performance standards and benchmarks
- The accompaniment of agricultural and rural development programs to promote the creation and enhance the economic performance of rural business operations

In this model, the inhabitant of rural areas is not seen simply as a potential customer but as an active participant in the operation of the systems at the appropriate levels, and as the prime motor of rural development and welfare as well. The proposed rural electrification franchise system is driven by the direct and fundamental “buy-in” and ownership of the user communities, not merely as beneficiaries but, over the long run, as the core of the business itself. Worldwide experience has shown that communities of electricity consumers, organized to participate under a locally appropriate and disciplined corporate system, may develop the hallmarks of successful utilities:

- Attention to service quality,
- Compliance with good commercial practices and bill-paying,
- Consistent ability to meet financial and other contractual obligations (including power supply contracts) and
- A growth pattern whereby, in time, all members of the community can avail themselves of the opportunities that electrification offers.

The following is a two-part exposé illustrating how these principles can be implemented as a practical, experience-based strategy. The first part deals with an over-all rural electrification approach; the second part discusses in more detail the steps that are envisioned for mobilizing local initiatives and harnessing their resources and potential in order to allow for their participation in the provision of electricity service in their communities and to extend the benefits of electricity use beyond the household applications and into the areas of community service and economic development.

III. Proposed Strategy

At the apex, the Rural Electrification Corporation is seen as the promoter and facilitator for the franchise system. Its role is to establish the guidelines for creating and operating the franchise agencies at the state level, as well as to channel Government of India and other resources – including expert advisory support – to facilitate commercially viable consumer-based rural electrification development and expansion.

The franchising/supervisory agencies at the state level will be independent companies endowed with electric distribution sub-concession privileges and other attributes. These agencies will have as their goal developing, implementing and supervising community-based rural electrification companies following a prescribed pattern that may vary in various aspects from state to state but will all be governed by a common set of principles and operational roles. The rural electrification entities themselves will be consumer-owned corporations, although initially the state franchising agencies will own the majority of their shares. As each project comes into operation, the users will pay for a share in the consumer-owned corporation, similar in amount to the prevailing SEB connection fee. Over time, the users collectively will continue to build equity in the company as operating margins are reinvested and debt is paid down, until they obtain a majority position in the consumer-owned corporations. These corporations will, in turn, progressively buy shares in the state-level franchise corporations until the whole system becomes essentially consumer-owned.

The rural electrification consumer-owned corporations at the block level will be designed by the state agencies on the basis of long-term financial viability. They will be based on a democratic business model, where community ownership goals are established at the start and effective participation, ownership and authority over distribution systems is gradually transferred. There will be permanent organizational and financial ties between the REC, the state-level franchise agencies and the consumer-owned rural electric corporations, the nature of which will be designed as a function of the advisory functions and consultations of the NRECA/IFC team. As a basic starting point, however, rural populations will be educated to understand that they are working for themselves and in their own self interest and this belief must be backed by effective and reliable institutional arrangements.

The business philosophy will be cemented in formal franchising agreements between the state agency and the petitioning community/block, on the following principles:

- Orientation to serve the interests of local consumer communities.
- Full recovery of distribution system capital through tariff structures, even if an up-front subsidy is originally granted.
- Attainment of operational economies of scale.
- Emphasis on meeting investment and service needs at lowest cost (finance and technology) including adapting design and operation to national and local community conditions, abilities and resources.
- Standardizing organization and technical design to facilitate replication and economies of scale.
- Supervision of state franchises and block-level rural electric corporations based on established policies and procedures, professional management and adherence to acceptable operational and financial benchmarks for rural electric services

This approach will:

- Demonstrate REC's commitment to a new and innovative approach for improving access to electricity service in rural communities.
- Give the states a sound rural electrification strategy, helping them solve the problems of operating rural systems.
- Create economically and operationally more efficient rural electric service concession operators allowing for better cost and tariff control.
- Improve access and quality of electricity service for rural populations,
- Facilitate replication and economies of scale across the board

IV. A Multi-tiered Structure

Each block-level rural electric corporation project can be thought of as having two types of network connections: downwards, a village-level consumer cluster or sub franchise and upwards, a state-level franchise agency corporation and on to the REC itself, in a tiered structure. Under its advisory mandate, the NRECA/IFC team will be responsible for creating the franchise agencies and, critically, for developing their modus operandi in terms of business philosophy. This will be done in consultation with State authorities and REC. The team will carry out its mandate in full compliance with associated REC guidelines including rural electric system construction standards, rural electric corporation management and operation benchmarks as a function of financing terms, power supply agreements and trading strategies, representation before the regulatory agencies relating to tariff approvals, etc. The team will also arrange for the structure and sources of financing for system construction and start-up expenses, and for training state level franchise corporation managers and operating staff.

At the community end of the franchise system, there may be two tiers. The franchise agency at the state level will facilitate establishment of consumer-owned rural electric corporations, provide them with an ownership structure that allows for direct customer participation, arrange for the development of their rural electrification projects, provide them with both technical support and strict service and operational guidelines, assist them operationally as needed and coordinate with other programs for the provision of rural development assistance. The rural electric corporation itself will be a small, financially viable utility empowered to buy and sell electricity within the parameters established by the franchise's guidelines and by the institutional framework pertaining to the electricity sector in the country and the state. The legal authority for the corporation will be established in the franchise agreement between the state-level corporation and the community/block corporation complete with a comprehensive range of defining responsibilities and operating requirements. Below this level could be village-level cluster or sub franchise will be responsible for consumer-side mobilization including signing up user-members, performing commercial and some simple distribution activities and for demand and productive use development at the local level.

As for the transfer of ownership, membership fees that are collected by the rural electric corporations will be used to buy shares in the franchise agencies. In this manner, the franchise system will gradually become subject to the collective voting power of the members, either directly or through village level, corporation and agency

representatives. This will assure that the franchise agencies remain dedicated to the interest of the consumer-members and over time will shift their business focus from developing electrification projects to enhancing the standing of the franchise corporations:

- As providers of an expanding agenda for local economic development,
- As user representatives before the GoI, and
- As on-going pursuit of financial and other support for rural development in their communities.

V. Franchise Elements

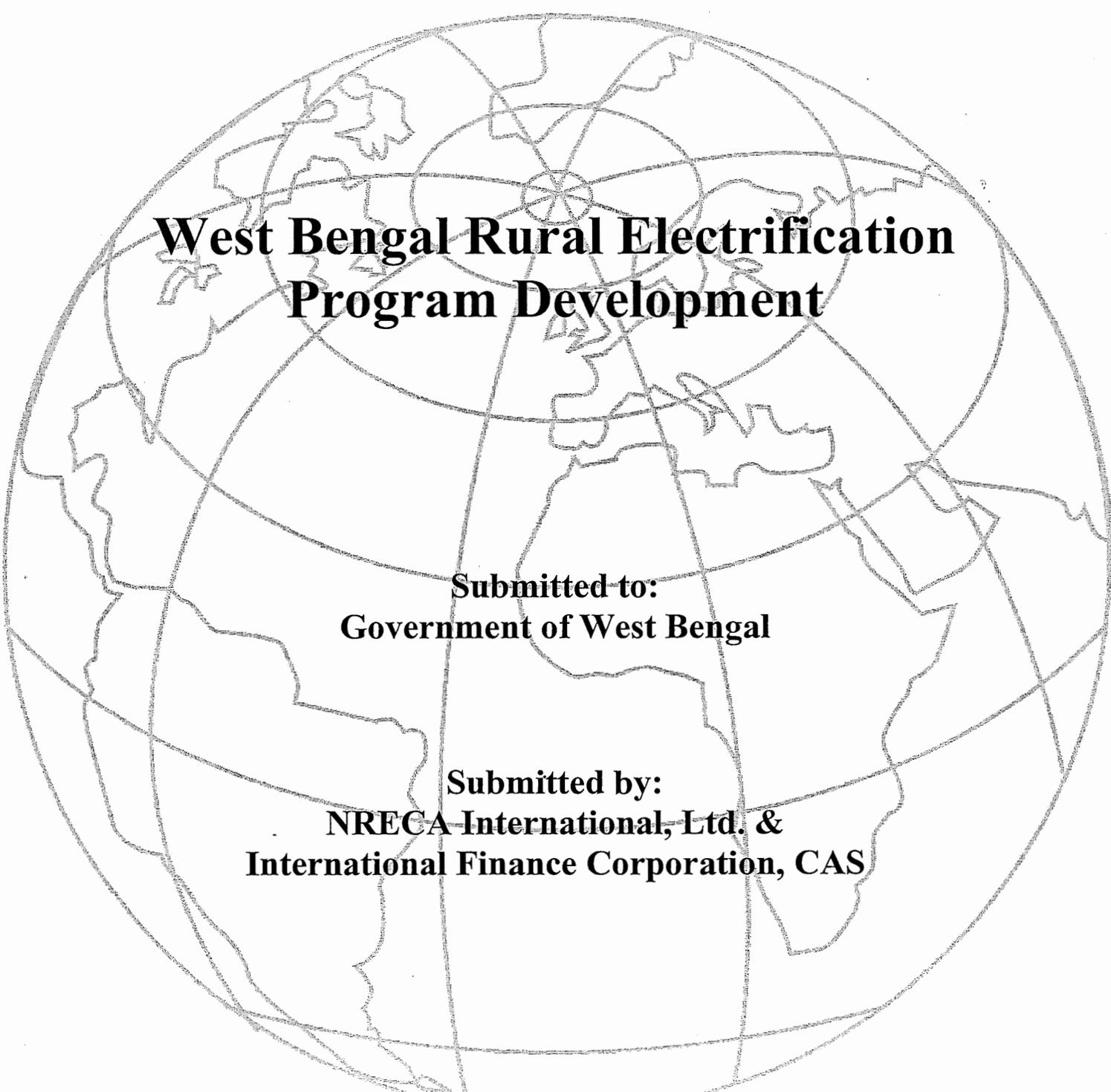
As it is understood by NRECA/IFC, States will be encouraged (or required) to adopt a franchising system in order to execute the operational phase of the Accelerated Rural Electrification Program and as a condition for obtaining funding support from REC to build the distribution systems. It is assumed that latitude will be provided to the States in developing and adopting such systems, however it is recommended that REC delineate a number of general standards for the franchises, including, for illustration, the following:

1. Legal Corporate Charter and Standing (determine basis in state law and/or enact new enabling legislation, as needed)
2. Universal Service (eligibility for government aid requires service be provided to all on equitable and non-discriminatory basis, subject to financial participation requirements)
3. Feasibility Study & Construction Plans (evidence of adequate planning)
4. Compliance with Distribution Design Standards (evidence of quality and efficiency assurance in design, materials and construction prior to financing)
5. Licensing and Concessions (transfer to provide for unambiguous authority to serve – from SEB, etc.)
6. Contracting Transaction Rules and Procedures (compliance with transparency and other standards for procurement of goods and services including BOT service providers)
7. Power Supply Standards (reliable service at an affordable price consistent with state norms)
8. Tariffs (assurance of cost recovery plus, as required by financing terms)
9. Operational and Financial Reporting/Benchmarking (application of REA “Form 7” equivalent)
10. Professional Standards of Management and Governance (establish outsourcing and/or adequate training provisions for staff and directors)



NRECA International Ltd.

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A large, faint world map with a grid of latitude and longitude lines serves as the background for the central text.

West Bengal Rural Electrification Program Development

**Submitted to:
Government of West Bengal**

**Submitted by:
NRECA International, Ltd. &
International Finance Corporation, CAS**

March 2005

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1. Introduction & Overview

The International Finance Corporation (IFC) and NRECA International, Ltd., a subsidiary of the National Rural Electric Cooperative Association, (NRECA), are pleased to present to the Government of West Bengal (GoWB) this proposal for development of a statewide rural electrification program.

The Advisory Services Department (CAS) of IFC and NRECA offer a fully equipped and experienced as well as very motivated team to work with the GoWB to develop sustainable rural electrification projects that are fundamental to meeting the challenges of GoWB's rural electrification goals. This program is to be offered to the GoWB as a joint initiative that integrates NRECA's extensive cooperative-based experience in rural electrification with CAS's global experience in structuring and implementing successful private/public partnerships transactions in the power sector. Our unique partnership enables us to present a coherent and comprehensive picture of how to render rural electrification sustainable.

The NRECA/CAS partnership (the "Partnership") is capable of developing and implementing a model rural electrification pilot project in West Bengal that can be easily replicated throughout the State. This model pilot project will be community-based in its orientation and ownership, with public and private sector participation in financing, construction, operations, and management. In the case of West Bengal, NRECA/CAS proposes a specialized, private, rural electrification franchising enterprise. This enterprise will combine elements of a local consumer-owned electricity distributor-retailer, together with professional electric distribution utility construction and management service providers.

2. Project Background and Purpose

Rural electrification continues to be a priority of the State Government of West Bengal. Whereas electrical systems reach widely throughout the State, the majority of rural people still have no electricity service. To assist the State in identifying new avenues for achieving a breakthrough, NRECA evaluated the prospect of carrying out a local community initiative in Basanti Block southeast of Kolkata, where on the order of 1% of the population receive electricity from the utility. A report was prepared for the Power Ministry

in collaboration with WBSEB and WBREDC based on a broad but preliminary analysis of the technical, financial, and organizational feasibility of the project.

The report found that an electrification investment developed under an innovative consumer-owned format could be successful and was worth developing as a demonstration of how public and private-sector resources and interests can be combined in a standardized and replicable investment program. Public sector involvement in this business model spans national, State, and local agency roles, consisting primarily of financing support and oversight. Private-sector roles and resources involve first and foremost the local community, organized in a common corporate being, together with the support of private providers of construction and operational expertise, non-government voluntary assistance and financing.

The impetus for this initiative derives from NRECA's long experience in adapting a local initiative electrification pattern from the U.S. experience as modified in many years of experience overseas. The fundamental lessons learned from this experience are reflected in this proposed approach. In that light, the intended project's success will rely on the following four principles:

1. The willingness and capability of the community to associate effectively and responsibly as a private, common undertaking and without undue political influence;
2. The rigorous application of a set of design and operating standards to assure compliance with the key attributes of well-built and well-run rural electric utilities;
3. The consistent delivery of good quality and reliable electric service; and, over the longer-run; and
4. The success of the project sponsors to stimulate productive uses of electricity in the Basanti community.

3. Project Approach

Our philosophy regarding non-urban electrification, borne out from practical experience from around the world over many years, is that the local communities cherish development – new employment and income, greater productivity, better schools, health, water, and other social services, less hours in the day spent by women in demeaning and mind-numbing drudgery, etc. – far more than they demand “free power.” Ask an Indian farmer who today irrigates with a diesel pump-set costing many times the energy cost of a more efficient electric pump whether he wants free power or whether he wants more reliable electricity service. We believe that India's farmers are willing to pay value in exchange for getting value and, that they will not steal electricity from their neighbors, an inherent strength of consumer-based approach. The key to this is in creating a rural electrification market where rural Indian communities can

truly obtain value from their electric service providers, starting with reliable service, and take pride in their contributions toward solving their own needs.

The Partnership recommends the formation of new, independent rural electric utilities that would foster consumer participation in management and ownership through formation of rural electric franchises. These franchises would be supervised, supported, and financed by a Franchising Agency, an apex organization set up specifically for the purpose of promoting rural electrification. The model for the franchises and Franchising Agency is based on the United States experience in rural electrification, which began in the 1930's, and NRECA's experience in global rural electrification since the 1960's.

This collective experience has demonstrated that:

- Consumer ownership offers organizational, operational, and political advantages.
- Government must provide support and oversight but not be enmeshed in operation or ownership of rural utilities.
- Private-sector experience and discipline creates efficiencies that will lead to sustainable rural utilities.
- Electricity is a valuable input for economic development, but it must be supplied in reliable and high quality form in order to fulfill its promise.
- Rural consumers recognize the value of electric service and are willing to pay a rational price for it when service is reliable and of high quality.

NRECA/CAS will begin with the design, procurement, and construction of the electricity distribution system, and will thereafter focus on establishing the institutional framework to assure longer-term institutional sustainability. NRECA/CAS will provide substantial training to personnel of the newly formed, local service provider to ensure that system operations and management will be efficient and reliable.

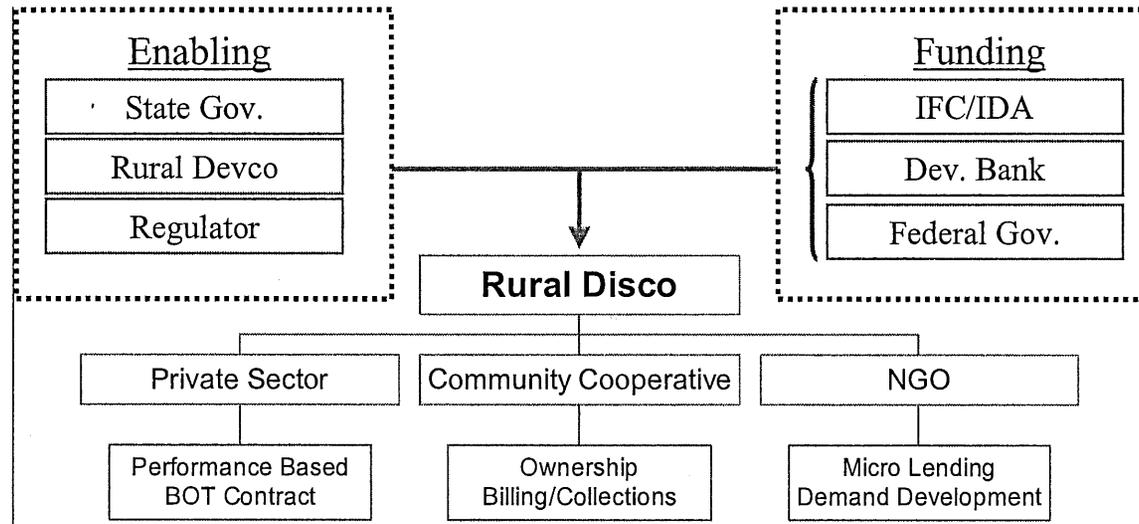
The particular approach we advocate is to incorporate the natural advantages of cooperatives and similar consumer-based associations within a flexible investment management model that also takes advantage of and captures both public and private-sector objectives and resources. Where cooperatives are selected as the consensus corporate format, we also advocate adopting changes in the way cooperatives are legally established to assure a more independent and "private" scheme. Alternatively, consideration should be given to adapted formats of local consumer corporations that may be more suitable to Indian experience and culture. India itself can point to successful, albeit isolated, cases. For example, electric cooperatives established in India for distribution of power have enjoyed some

success relative to the loss rates experienced by the SEBs' rural electrification investments. This experience clearly needs improvement and adaptations as part of a broader rural electric reform scheme

One potential configuration of the rural distribution services company is provided as an example below (

Figure 1). Functions would be divided between private sector, community cooperative(s), non-governmental organizations (NGOs), and the public sector, depending upon the characteristics of the local community.

Figure 1: Rural Distribution Services Company



3.1 Electrification Enterprise Structure & Financing

The “prime mover” would be a Franchising Agency (“Agency”) that will foster the development of individual electric franchises throughout the State. The State government, possibly through the WBREDC would be a key participant, bringing both electrification licensing authority as well as access to public-sector funds and policy influence. One or more other key partners would be included, such as the Rural Electrification Corporation (REC), which is charged with implementing the Government’s accelerated rural electrification development fund. One or more private Indian companies with expertise in electrification will be recruited to participate in an appropriate format (further illustrated below), including at least one utility services provider.

The role of the Agency will include, inter alia, the following responsibilities:

1. **Identify Potential Block-Scaled Franchises:** The Agency will work with WBSEB and/or its successor distribution companies on identifying suitable locales for a block system or otherwise on an individual scale that assures economic feasibility. The Agency will offer the communities the opportunity to create a distribution-retail franchise in the designated area based on a comprehensive package encompassing standardized technical design, organizational templates, operating and accounting standards, and financing.
2. **Recruit Private Constructor and Operator:** The Agency will recruit private utility construction and operations service provider(s) to take multi-year, build operate & transfer (BOT)-type contracts for the construction and initial management of the distribution system. The contracts will include most but not all of the operational responsibilities, leaving bill collection and commercial operations to be carried out by the consumer-owned franchisee. The management contract will terminate at the time that the franchise is transferred; however, the contract may be renewed by the newly independent franchisee, or alternatively it may retain its own manager, a determination to be made jointly with the Agency at the time of transfer.
3. **Provide Operational Support:** The Agency will provide direct support and oversight to the local franchisee through all stages of its development including consumer education, etc., as a specific provision of its enabling charter. The Agency's motivation to perform its duties would be tied to milestones in its enabling charter with the State Government, backed by financial incentives. These milestones would in turn be imposed on contracted service providers as well as the local franchisee (consumer-owned electrification corporation). It would involve strict conformance with established technical and operating standards, backed by inspections to assure compliance of service providers and vendors; close monitoring of the franchisee's formation and initial operation which may include commercial functions (collection of billings and service cut-offs, etc.) and so on. The U.S. Rural Electrification Administration deployed a similar model that resulted in the formation of some 1,000 electric cooperatives during the period 1935-65.
4. **Arrange Funding:** The Agency's business approach will be to obtain capital funds from communities, which agree to participate by establishing a franchise under the Agency's rules and sponsorship. The Agency will leverage these funds with sources provided by or through the Agency's sponsors, and take temporary oversight responsibility for managing contractors on system construction, management and operations in newly established concessions. In this sense, the prospective community franchisees will be required to obtain a financial stake in the Agency as a condition for electrification.
5. **Transition to Common Service Provider:** In time, the Agency will be majority owned by the company's independent franchisees, which will arise from their gradually accruing a collective equity stake. The Agency will gradually transition from

franchise construction and development to providing a common range of services to franchisees, including: management and technical training, bulk procurement, common financing services, wholesale power supply contracting, strategic planning for franchise services diversification, access to new technologies and best practices, government representation, etc. all as a private sector business system, again very similar to the model that evolved in the U.S. During this transition, the Government's direct stake in the Agency will be disinvested.

Figures 2 and 3 below illustrate the approach to the establishment and implementation of the envisioned model.

Figure 2: West Bengal Model: Development Stage

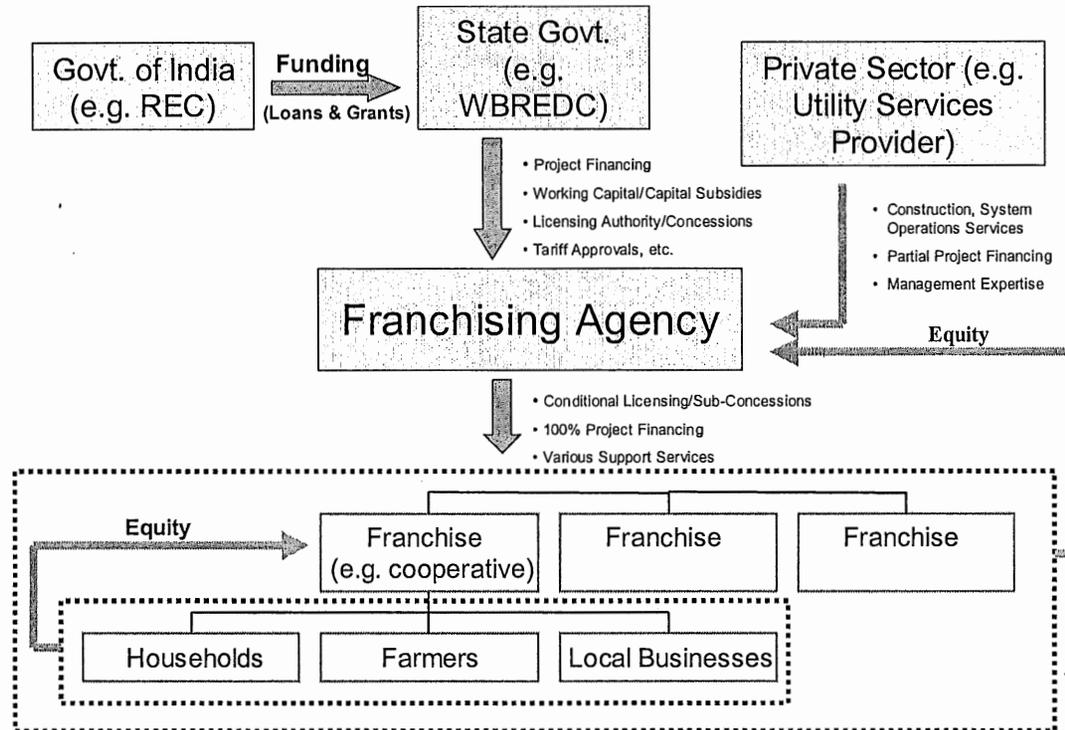
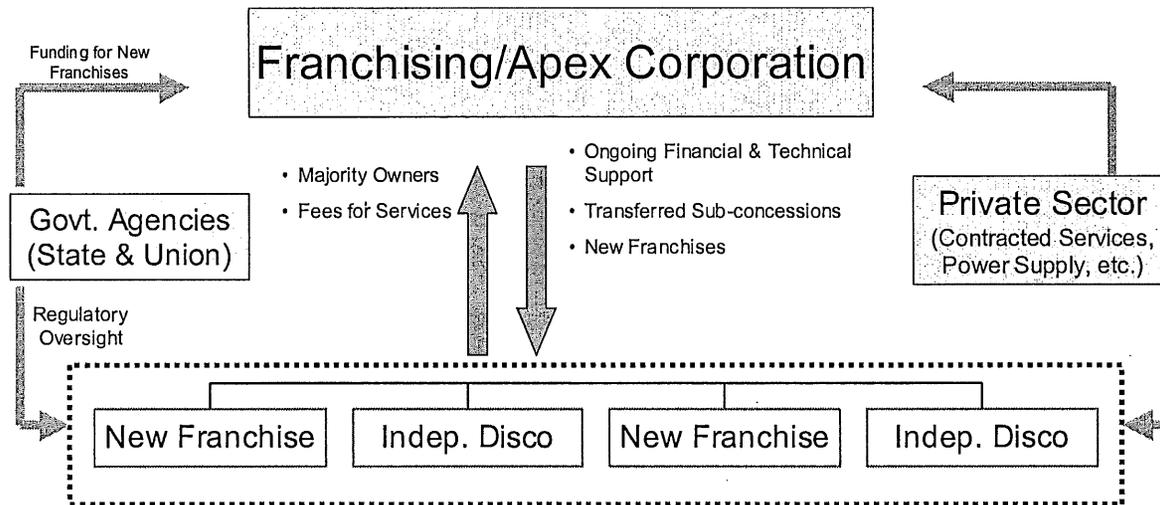


Figure 3: West Bengal Model: Maturity Stage



3.2 Franchise Development and Organization

In West Bengal, it is envisaged that the local franchise will be made up exclusively of local consumers – each consumer must pay-in a modest sum to the capital of the franchisee in order to obtain a service hook-up. Any consumer may also elect to contribute additional capital in non-voting stock. As noted, the funds raised in the community will be used by the prospective franchisee to purchase a stake in the Agency, who will then be responsible for obtaining the concession and arranging 100% of the financing for system construction, secured by the concession rights and the franchisees fixed and financial assets.

Each franchise will be set up to achieve independent financial sustainability within a period of 1-5 years. The success rate will be primarily a function of the Agency's due diligence on the service territory, the design and adoption of an economically viable tariff regime, a financial package for initial system construction, and its ability to provide capacity-building support, board and manager training and certification, supervision of outsourcing agents, general oversight and trouble-shooting, among other responsibilities. Capital financing will be raised by the Agency from the various sources including government, international development assistance

agencies, the community, and private financing sources, with the respective proportions determined by the economic and financial parameters of the individual project.

As it is currently envisioned, the corporate form of the franchisee may be either a cooperative or a consumer-owned stock company. The franchises and financial obligations will legally be held by the franchisee – the local community – but with strictures assigning certain responsibilities, including oversight and withholding powers, to the Agency. The full legal franchise authority would transfer to the local community franchisee when it has reached a pre-determined set of operational milestones, such as service penetration rate, service quality, and certain operational financial measures such as collection rates, DSC, etc., detailed in the Agency’s franchise “package.” The permanent franchise rights are provided to the local community to foster the sense of local ownership and accountability, among other unique benefits of the community-owned electric cooperative model.

4. Project Objectives & Scope of Work

The primary goal of the proposed advisory services is to establish in West Bengal two or more functioning, self-directed rural electric enterprise developers, capable of systematically expanding rural electricity service throughout the state in a private-sector business model.

The developer(s) will be equipped with a standardized demand-based organizational approach and will be capable of delivering a variety of services including energy services, financial services, agricultural/rural development extension services relating to electricity use, as well as a full range of capacity-building and organizational support services for local community-owned electrification distributors/retailers. The businesses that emerge will be suited to negotiate for “greenfield” or “brownfield” rural electric service territories or combinations of both.

NRECA/CAS propose to accomplish the proposed project as part of a four-phase work plan that will be conducted over a three-year period. The Partnership proposes to implement this scope of work on a specific pilot project in West Bengal that would be developed contemporaneously with the Basanti project south of Kolkata. This second pilot project would ideally be in a dense peri-urban zone, but the exact location will be discussed and agreed upon between the GoWB and the Partnership.

The project team will consist of a team of NRECA /CAS U.S. and Bangladesh-based electrification experts and specialists, and local consultants who will be employed to perform most of the field data collection and selected analyses. To the extent possible, some tasks will be performed in parallel in an effort to conserve time and bring projects to fruition as soon as possible.

Each project will evolve through four basic phases, each of which includes several sub-tasks. The four phases are as follows:

1. Project Preparation;
2. Detailed Due Diligence & Structuring;
3. Contracting; and,
4. System Construction, Monitoring, Stabilization, & Technical Assistance.

These four phases are naturally inter-linked and co-dependent. For example, demographic data collected during initial field work, combined with initial field studies of geographic and load data will be the basis of the engineering design and analysis. Data collected in the initial phase of project implementation on potential consumers' willingness to pay for electricity will impact the potential tariff that will be developed for each service territory. Subsidies will be determined by evaluating revenue requirements to ensure utility sustainability versus the cost of infrastructure development and the tariff ceilings as determined by the willingness to pay analysis.

The Partnership believes that the proposed pilot project in Basanti block will serve as a template for all subsequent pilot projects in West Bengal. Future pilot projects will thus be able to leverage knowledge and materials developed during this initial project, improving the efficiency and timeliness of all phases of project development.

It is important to note that coordination with GoWB, as well as senior management and field staff of the WBSEB and the West Bengal Rural Energy Development Corporation (WBREDC) will be key to completion of Phases and individual tasks on a timely basis.

4.1 Phase I: Project Preparation

The first phase of any proposed pilot project will commence with preliminary site visits to ascertain the attitudes and readiness of local stakeholders to participate in the program. Upon completion of these exploratory discussions, IFC/NRECA will then undertake preliminary due diligence to determine if essential criteria are met for project development.

For all proposed pilot projects, NRECA/CAS would complete the following:

1. Interview key stakeholders including representative community and business leaders regarding the present electricity service provider, improvement opportunities, and conditions, development priorities, etc. in the selected demonstration project service area, and follow up on requested information and documents.
2. Conduct preliminary assessments within each proposed project area of the following:
 - (a) current consumer demographics and trends,
 - (b) opportunities to increase electricity usage,
 - (c) consumers' distributed and other energy alternatives,
 - (d) willingness-to-pay, billing and collection mechanics, and
 - (e) consumer attitudes on pricing and quality.
3. Hold preliminary stakeholder discussions both at the state (SEB, MoP, ERC, Genco, Transco, etc.) and community level in proposed blocks.

The Partnership has already made substantial progress on all of the tasks under Phase I for the Basanti project and would require approximately one month to complete this Phase of the Project. For any new project blocks, the Partnership will undertake the full scope of Phase I. At the conclusion of this phase, a detailed proposal will be delivered to the GoWB and a formal contract will be entered into between the Partnership and the GoWB for execution of the subsequent three phases of project development.

4.2 Phase II: Detailed Due Diligence & Structuring

Phase Two of this Scope of Work will entail standard project due diligence on the part of the partnership, including: data collection and analysis of electricity demand, construction plans and capital expenditure requirements possibly including power investment, power supply options and issues, revenue requirements and pricing, etc. In view of the importance of local communities' "buy-in" to the success rural electrification, this standard due diligence process will be modified to include the following:

1. Extensive local stakeholder consultation; and
2. An assessment of the capacity of local institutions to take any formal role in the program either immediately or over time

The completion of Phase Two will be signaled by the issuance of a Due Diligence and Strategic Report, which will outline the proposed structure for the specific demonstration utility(ies) together with an identification and analysis of the decisions and options the various levels of government need to make.

The detailed due diligence conducted in Phase Two will be critical to the development of appropriate bid and transaction documents that will be developed and executed during Phase Three.

Annex 2 provides greater detail on the specific tasks that will be accomplished as part of this Scope of Work.

4.2.1 Market Assessment

The Partnership will conduct a comprehensive market assessment that includes demographic surveys to determine existing consumption and expenditures on traditional energy sources, as well as households' stated desire to pay for electricity if it were made available to them. The resulting data will be analyzed to estimate project connection rates, revenues and operating costs, and the amount of subsidy, if any, that would be required to ensure the financial viability of the project.

4.2.2 Technical Assessment

The technical assessment is a critical path task that will encompass the mapping of the existing distribution system, topographical features using satellite imagery, population centers, and other relevant demographic data using a Geographical Information System (GIS). The engineering team will develop a set of distribution system standards that are designed to improve efficiency and system performance will be developed to replace the existing system standards. Finally, the engineering team will design an optimal system layout that will meet existing and project load in the Project Block.

4.2.3 Legal Structure

In Phase Two, the relationships between the proposed organization, other sector entities and state government agencies will be defined and discussions held with other stakeholders to refine the scope of the proposed agency. The development of the proposed structure for the Franchising Agency will proceed based on the role envisioned in Section 4.1 above. The proposed role of the Agency would be the coordination of technical assistance and financing to the consumer Franchises and the Agency's charter would be specific to promotion of rural electrification.

As with the apex organization, the structure envisioned for the new rural utilities will be a consumer-owned model referred to as a Franchise and meetings will be held with stakeholders to confirm and more fully define the model. A tentative set of guidelines for formation of a Franchise will be prepared.

The result of this task will be a set of documents that defines the organizational structure of the Agency and the Franchise and presents the requirements for staffing and their qualifications. Detailed preparation of documents specific to creation or registration of a particular organization will be left for the implementation phase.

4.2.4 Business Plan

The Partnership has developed many financial and economic models in recent years to perform analyses of identical scope and purposes. The methodology will be adjusted to suit the specific needs of the West Bengal rural electrification project. The model will be tested using actual performance data that is readily available from an existing distribution system in Bangladesh, where results are likely to be similar to West Bengal's experience. Comparing model results with known financial performance will allow the model to be calibrated. The team will further design a synthetic utility model that will be the basis for determining operating costs, based upon projected maintenance and operating staff requirements. The model will be developed once the engineering cost estimates and tariff analyses have been completed.

4.3 Phase III: Project Implementation

During Phase III, the consumer franchise will be formed, the BOT contractor will be recruited, and the financing agreements executed, among other tasks, using the documents and plans developed in the previous Phase.

The formation of the consumer franchise, material and equipment procurement, and contract execution is expected to take approximately twelve to eighteen months, depending upon material procurement and delivery. Given that most of the project materials can be procured in India, transportation and delivery are not anticipated to present difficulties.

4.3.1 Establishment of Consumer Franchise

NRECA/CAS will identify and deploy a local team in the community to carry out the formal task of recruiting consumer-members to the Disco. This is a critical process and will entail extensive education to explain the organizational setup, consumer responsibilities and benefits, etc. The organizational development and nurturing process for the community corporation is a long-term proposition and will be discussed in more detail in describing the final component, below. The Partnership will work very closely with the Disco to assure its compliance with its roles, smooth interaction with the BOT, management of shareholder meetings and board elections, etc.

4.3.2 Financing and financial management agreements

Formal loan and grant agreements based on understandings reached in the previous stages will be transacted. It is anticipated that a local private bank with a rural customer base will be recruited to handle the administration of funds and serve Disco operations according to the accounting system designed by the Partnership to facilitate accurate performance monitoring. In addition to the project Disco establishment, a modest revolving credit will be created to support house-wiring and productive use equipment expenditures by qualified Disco members.

4.3.3 BOT contract

The distribution system design that is developed as part of the Technical Assessment conducted in Phase Two will yield specifications and materials lists needed to begin the procurement process. Immediately upon completion of the design process, procurement will commence. For the sake of time efficiency and cost saving, we envision a simplified implementation process for recruitment and procurement. The tender documents prepared during the previous step will be very detailed in terms of the contractor's obligations, construction standards and basis for approval of completed works, operating plan including milestones and incentives, etc.

NRECA/CAS proposes to recruit two or three qualified bidders to offer proposals, subject to written pre-qualification criteria and approval by the State government. The Partnership will be in charge of the bid selection and subsequent negotiations, again subject to the approval of the State government for key decisions.

4.3.4 Power purchase agreement

NRECA/CAS will negotiate a power purchase agreement (PPA) with the SEB or State grid-co on behalf of the Disco and will also seek a long-term solution for power delivery in the region. The power supply issue is vitally important both in terms of electricity pricing and also service quality. One outstanding area of concern related to the Basanti project, is the wholesale power supply. It is strongly advised that, within a relatively short period of time, a high-voltage transmission line be built to assure that system expansion will not be constrained by overloading on WBSEB's planned 11kV-to-33kV line upgrade.

4.3.5 Utility concession and tariff approvals

The Disco's operating authority will be granted under a sub-concession but perhaps that may not provide for limited service rights in Basanti block. This licensing could be granted under the existing concession authority of the WBSEB or the WBREDC. A tariff proposal will be developed and submitted to the regulator following a consultative process with all stakeholders.

4.4 Phase IV: System Operation and Sustainability

Once the various tasks associated with the project due diligence and implementation are concluded, the Partnership will be engaged in the management and oversight of project construction and the development of the institutional capacity of the new utility franchise. The development of the former is critical because the physical infrastructure is the basis of the new utility, but the development of the

latter is equally important because without sound management and commercial operating procedures, the new utility will not be an effective and viable ongoing economic enterprise.

The complexities of assisting a newly established institution to reach financial sustainability over a relatively short period of time should not be underestimated. Beyond hiring and training staff, the new entity has to be incorporated as a particular kind of business institution that will serve the specific needs and purpose for which it has been established.

NRECA/CAS will provide guidance on the following:

1. Construction Monitoring and Oversight. We will closely supervise and monitor the construction phase including inspections on procured materials, constructed works, and incremental approval of funds disbursements. During the operational stage, we will also closely monitor the progress of the contractor to assure compliance with schedules including consumer connection rates, billing and collection rates, service quality performance (outages etc.), and disco financial performance. Annual audits will be performed by an independent accounting agency. We will be responsible for presenting quarterly progress reports to the project working team.
2. Board formation and training. The method of selecting board members is critical to assuring that the new utility will be governed with transparency, integrity, and wisdom. The means by which board members are selected, of course, will depend on whether the institution will be a cooperative, a municipal corporation, or a user association, for example. User associations and cooperatives have elected boards, while board members for private and public corporations are named on the basis of ownership of shares or on the basis of standing in the community (for public corporations). Whatever institutional format is followed, board members will require training to understand the role of the board in setting policy and the need to allow management to administer the day-to-day affairs of the utility.
3. User/member orientation and information campaign. Future consumers/owners will need to understand the purpose of the new electric utility, the basis on which it is being formed, and will moreover need to understand the basis for establishing electricity tariffs. These functions are normally addressed by focus group meetings, by doing house-to-house interviews, and by printing information briefings and distributing them to community leaders and members.

4. Developing by-laws, policies, and procedures. To assure that management and staff understand their relative duties and responsibilities, and to provide the necessary guidelines to better manage administrative, commercial, and technical service requirements, the NRECA team will develop and document the new utility's by-laws, as well as policies and procedures to provide guidance for operational purposes. Policies and procedures combined with training and technical assistance will set the stage for competence in all necessary skill areas to manage utility operations.
5. Board elections/board selection. In the event a user association or a cooperative is formed, a process to nominate and elect the initial set of board members will need to be organized and managed. This process will require a period of in-depth discussions with community leaders to advise them of the responsibilities and duties of board members, and what sort of minimal life experience in business and leadership is necessary for effective leadership. Only those members in good standing will of course be allowed to participate in board elections, but all members will need to understand how the process will be managed, as well as their rights and responsibilities in the election process.
6. Master plan for future utility expansion. To assure that the utility continues to meet the growing needs of the community, a master expansion plan will be developed by NRECA technical staff to evaluate expected system expansion and the financial demands that result as a function of the expansion.

5. Project Schedule

As mentioned earlier, the entire project period is expected to require approximately 24-36 months without any undue delays in fieldwork due diligence. Annex 1 provides a Gantt Chart of each step of the project implementation process.

A new project will begin with Phase I project preparation that will include preliminary analysis of available data to determine if the project is worthy of the detailed due diligence that is the focus of Phase Two. This process is expected to take no more than four to six weeks.

If the pilot project is approved for development, the NRECA/CAS team will immediately commence with Phase Two activities. NRECA/CAS will commence with the field work related to the market and technical assessments. The demographic and GIS-related field work will require approximately eight weeks to complete and can be performed in parallel if several project areas are under review. The engineering design activities will require approximately twelve weeks to complete and can be initiated upon completion

of the field surveys by the demographic team. The economic and financial analysis of the project, coupled with the evaluation and consultation of the institutional structures and models will require approximately three to four months of project time. Total estimated time to complete Phase II activities is approximately two to four months.

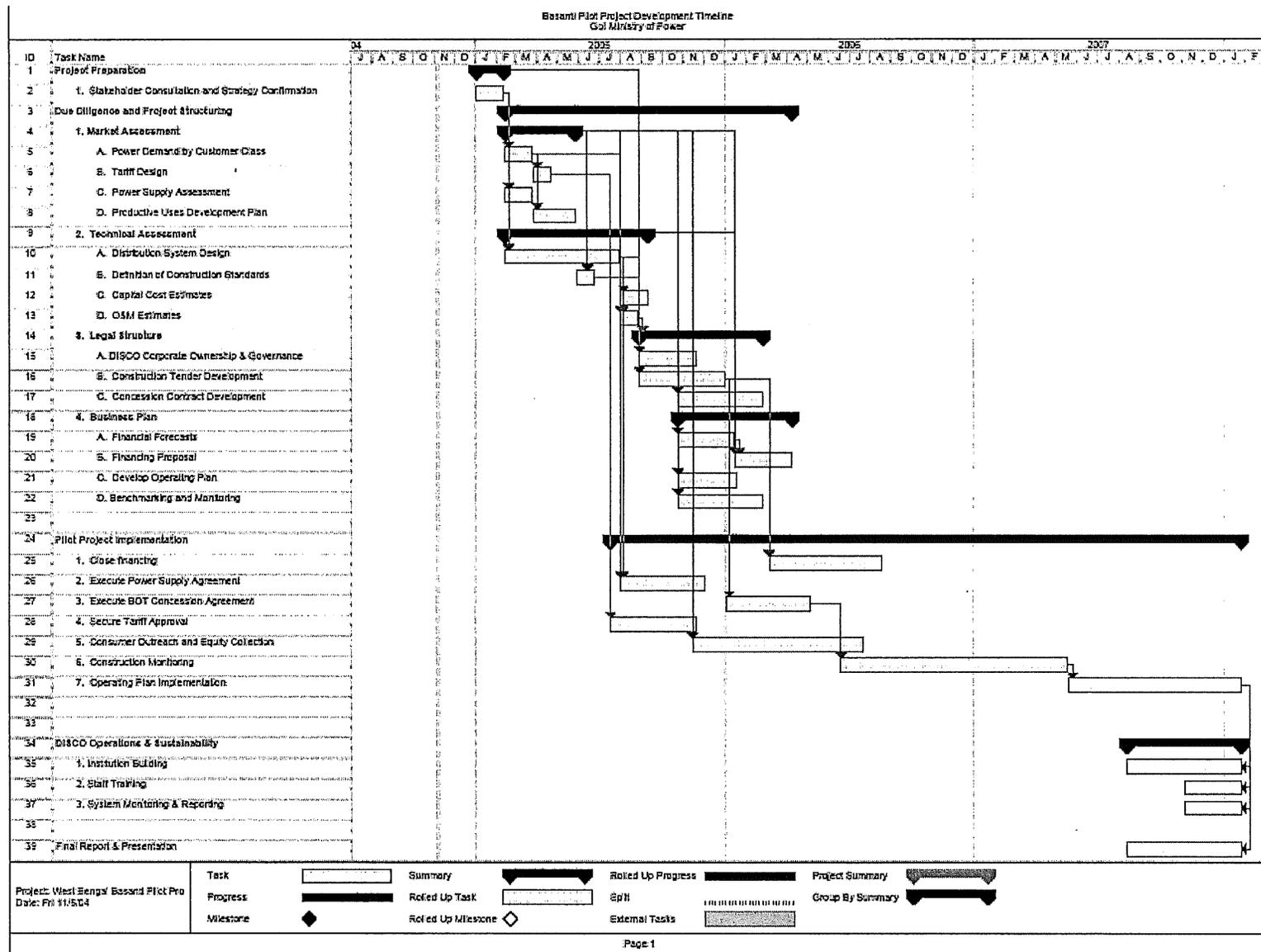
The contract structuring, materials procurement and cooperative formation that forms the bulk of Phase III will require an estimated 8-12 months. Project construction, operations, and monitoring is expected to commence as soon as the BOT contract is finalized and should be concluded within 12-18 months, depending on the local conditions, material sourcing, etc.. During this period, NRECA will also be providing technical assistance to the fledgling utility franchise and the apex organization to ensure that there is sufficient institutional capacity to manage operations and provide the support required by the existing franchise and others that may be developed in West Bengal.

6. Project Team

NRECA/CAS intend to manage this project with a combination of senior technical and managerial staff, local professionals, and local engineering and technical consultants for specific tasks under the proposed Scope of Work. Two senior project leaders will be appointed, one from NRECA and CAS, supported by highly skilled specialists in engineering, financial analysis and planning, rural electrification institutional specialists, etc. NRECA personnel will be focused on tasks pertaining to the development and establishment of the model agencies, technical and operations planning, and local capacity-building, while CAS personnel will focus on the financial and business plans, private sector leveraging, procurement and related negotiations.

Given the importance of this project's role in model-building and demonstration effect, NRECA and CAS will dedicate their best and most experienced people to this project. The appointment of key personnel will be accomplished in full consultation with the designated project liaison appointed by the State Power Ministry.

Annex 1 – Project Schedule



Annex 2 – Detailed Scope of Work

Phase II

Market Assessment

The demographic data collection and analysis will be one of the more time-consuming activities in the process of verifying the feasibility of the pilot projects. Collecting, analyzing, and evaluating demographic data is crucial to understanding the viability of any rural infrastructure project. Demographic analysis provides data on the energy expenditures of households and small businesses in both electrified and non-electrified areas, as well information on the willingness to pay for improved quality of energy services should such service become available. This data permits the project team to conduct a thorough comparative cost analysis of traditional versus modern energy sources to determine the potential economic benefit that would accrue to the consumer if they were to be provided with electric service. This economic benefit analysis is the basis for understanding the extent to which projects might be subsidized in order to ensure that tariffs do not exceed potential consumers' willingness to pay for electric service. Moreover, developing a willingness to pay density function provides a roadmap of the percentage of market penetration that can be expected given the price charged for service.

A survey tool will be developed prior to deploying the demographic teams in the field. The demographic team leader will design and test the survey tool with a local demographic field team leader who will be a subcontractor to the Project team for the duration of the field data collection effort. The field team leader will also assist in evaluating and hiring three groups of demographers, which will conduct surveys in the proposed project area.

Demographic data collection will begin as soon as the base map development has been completed. Base maps will be required to guide the part of the demographic team that will perform house counts within specified geographic boundaries such that housing density can be accurately measured for several areas within each project region. In addition to collecting energy usage data for residential consumers, designated demographic team members will perform productive use surveys, while others will be assigned to assist with population density surveys. The demographic surveys will require approximately eight weeks to complete.

At each proposed project site, approximately 200-300 surveys will be performed, together with a survey to understand the potential for increasing energy use through promotion of productive uses of electricity. Larger commercial and industrial users will

be identified and surveyed in a parallel activity by a specialist in this area. Surveys will be conducted in both electrified and non-electrified areas to better understand existing energy consumption in these respective areas. Survey data will be transcribed from the survey forms into a database that will later be statistically analyzed by a local statistician, with the resulting data being provided to the demographic team leader.

The field surveys will allow the GIS team to input population density estimates for various regions of the service territory of each of the three project sites. The population density figures can then be used to estimate demand required to run engineering analysis.

Technical Assessment

One of the deficiencies in data and information that will need to be overcome early in the feasibility studies is the lack of accurate scale maps of the service areas. Developing a GIS land base will facilitate identification of communities that are currently electrified, those that have yet to be electrified, and to model the existing and future system load versus distribution system characteristics. The base map will also support mapping of key demographic data such as population density and patterns.

The GIS base map will be developed employing satellite imagery purchased from the Indian Remote Sensing Institute. The satellite imagery will be digitized in Dhaka where we have established a GIS center of excellence. The base maps will contain primary, secondary, and tertiary roads; rivers and other bodies of water; railways; as well as towns, villages, and smaller population clusters. The GIS mapping team will then geo-reference the location of existing substations and the primary distribution systems. The geo-referencing activity will be performed on site by a group of local contractors managed by a Dhaka-based GIS specialist. The base maps will be the basis upon which preliminary engineering design will be performed. Moreover, the base maps will be used to guide the process of demographic data collection. Base map development will begin as soon as satellite imagery has been purchased.

Engineering design will allow the Project team to determine optimal system layout with respect to providing service to an existing and later, expanded consumer base by modeling load and the cost of replacing the primary and secondary distribution systems. The first step in this process will be to develop a modified engineering design standard that will be used to replace the existing distribution systems. It is the objective of this task to devise means for using as much of the existing infrastructure as possible while moving the system design to a set of standards that are more capable of meeting the needs of rural consumers and are more secure.

The modified standards will employ longer primary distribution lines using both single- and three-phase service; smaller and more numerous transformers to reduce the length of secondary lines, resulting in lower voltage drops and higher quality of service; and, insulated secondary lines connected directly to the service entrance of each consumer.

Moreover, all households will be metered and the standards evaluation will commence immediately upon project initiation.

Once the GIS base maps have been completed, the land base will be imported into the engineering design software and a preliminary design of the system will be developed. The goals of the system design will be to model the current power load, and design a primary distribution system that will be able to meet present loads and be easily expandable to serve twice the current load. This will allow for a load growth period of 15-20 years at conservative growth rates. It is important that the system not be designed initially to serve an excessively high load level in the interests of construction economy and expansion flexibility. By the same token, the system design should be flexible enough that it can be easily and economically expanded to meet future needs, both those that can be anticipated at the present time and those that could develop in unexpected ways. The analysis will also be used to determine where load intensification efforts should be focused in early years, as well as where and how the distribution systems should be expanded to provide service coverage to villages not yet electrified.

Lastly, the engineering analysis will be used to determine the cost of reconstruction for existing systems, and the cost of future service expansion. The results will be used to model financial and economic performance of the distribution system and to make critical decisions regarding tariffs and subsidies.

Organizational Structure

The structure of the proposed organization will be examined in detail with stakeholders to identify and resolve specific conflicts between the scopes of different agencies. Once the scope and charter of the proposed organization is defined and confirmed, it will be possible to proceed to a consideration of exactly how it will carry out its duties. This will involve the definition of the mechanisms and sources for obtaining loan funds, as well as definition of the processes by which the loans will be made and the conditions and covenants that will be imposed on borrowers. One possibility is that the new organization may act as a state government guarantor for funds borrowed from Indian government agencies such as the Power Finance Corporation and the Rural Electrification Corporation. If so, discussions will have to be carried out with these agencies and draft memoranda of understanding prepared specifying the terms of the financing and guarantees. The conditions identified in these discussions will be reflected in draft loan covenants that would be incorporated into the financial evaluations of the pilot projects.

While it would be premature to develop a complete package of supervision and monitoring guidelines to be applied to the borrowers at this point, it will be necessary to specify the areas in which supervision would be applied and the levels of approvals that would likely be required of the borrowers. It will also be necessary to develop a proposed monitoring plan that will specify those areas of performance that need to be monitored and the mechanisms by which such monitoring will be carried out.

The structure and development of the Franchise will be subject to guidelines and requirements that would include:

1. The prohibition against any director of the utility simultaneously holding political office within the service territory,
2. The prohibition against directors entering, either personally or through personally controlled organizations, into business relationships with the utility,
3. Licensing requirements and provisions
4. A standard organizational chart of the utility, and the level of staffing recommended in each function, most likely on the basis of the number of consumers served by the utility.
5. Staff technical skill level requirements will be specified and the training needed to achieve these levels identified.

Business Plan

The field data and demographic analysis conducted in prior stages of the Project will be used to develop and populate a rigorous financial model that will determine the Project's commercial viability. The financial model will determine commercial performance based on estimated capital costs for equipment and construction, operating costs for system maintenance and performance, load forecasts, system reconstruction and expansion cost estimates, and tariff and subsidy levels.

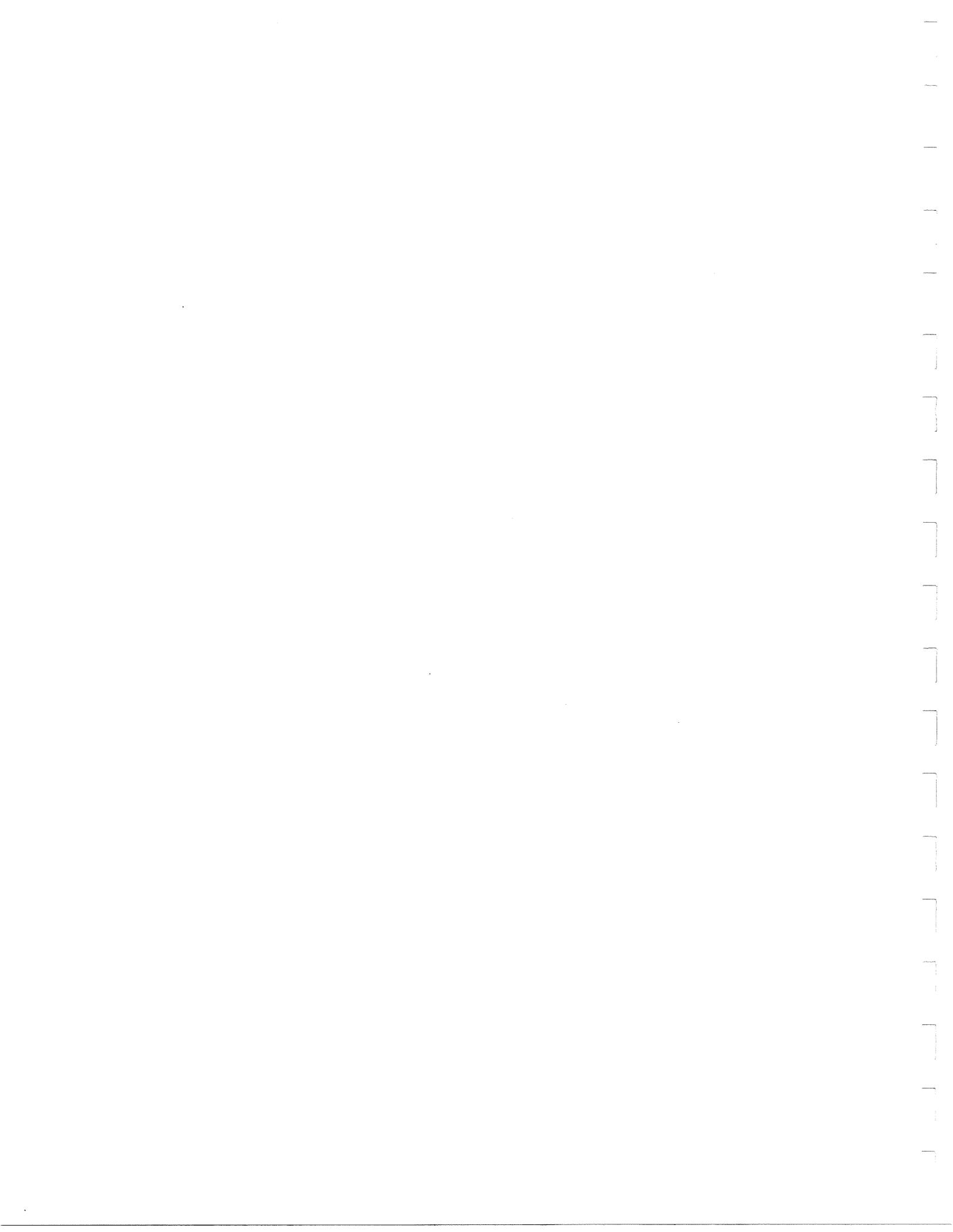
A separate economic model will be developed to estimate consumer surplus for various energy end uses. Consumer surplus is the means by which economic benefits are most often estimated for rural electrification projects. The economic benefits of using electricity for productive uses will also be estimated, should sufficient data prove available for this purpose. Financial and economic modeling will facilitate an analysis of the risk factors that could lead to program failure. These will be evaluated by performing various sensitivity analyses on the risk variables that could lead to Project financial instability.

The economic analysis will project the net present value of the economic benefits over the life of the project. This figure is the key to projecting the ceiling for the project subsidy. A subsidy that is higher than the net economic value of a public asset results in negative net economic returns to the Project.

Subsidies need not reach the discounted value of project net economic benefits, however. The financial model will be used to calculate the tariff levels necessary to reach financial sustainability for each distribution system, taking into consideration the consumption levels of all consumer classes, the cost of construction, operating costs derived from the derived synthetic utility costs, and the subsidy applied to the cost of reconstruction and system expansion. The subsidy level will be limited to the value of the tariff at which the operating costs are covered while not exceeding the willingness to pay. Since willingness

to pay is a non-singular value, a balance will need to be reached between the target penetration rate and the level of subsidies that can be applied to each project under study.

ATTACHMENT 2



ATTACHMENT 3

SCOPE-OF-WORK AND DELIVERABLES FOR CONTRACTOR

General nature of the Work:

1. Research and review existing cases of successful and unsuccessful efforts to create new or reform existing cooperative law; draw from CDO experience and materials on processes for instituting change in laws or regulations; develop concrete principles for good co-op law; draft paper(s) on case studies, lessons learned and best practices;
2. Indicate when and for what sectors is specific sectoral law recommended and why; suggest what elements are need to be present to make sectoral law adequate for cooperative businesses; recommend ways to avoid redundancy and conflicting mandates where both co-op law and sectoral law exist.

SCOPE-OF-WORK	Date Due
FIRST QUARTER	
<i>Overview: Undertake basic research on co-op law and best practices for making positive changes in the enabling environment. Review of existing co-op laws and regulations in a series of target countries to be named by the participating CDOs as identified below, presumably all of the strategic or key countries in which each CDO would propose to work on Cooperative Law or the enabling environment; draw from CDO existing information on co-op laws/regulations. Collect and assess analytical tools that can be/have been used to assess the enabling environments. The specific deliverables for each quarter are identified for illustrative purposes, subject to revision at the mutual agreement of the contractor and steering committee in order to meet the overall purposes of the contract.</i>	
Initial meeting – Technical Committee and all CDOs interested – mutual understanding and agreement on roles/responsibilities, procedures, outcomes, products; initial assessment of existing materials; recommendations of sources for additional materials (CCA and ICA have agreed to assist and recommended expertise that may be useful).	First week hired.
First quarter deliverables	
<ol style="list-style-type: none"> 1) As soon as is practicable after the signing of this Purchase Order, the Contractor will present to the technical Committee a proposed schedule of activities for the 12 months of the project with particular emphasis on the dates and times for CDO interviews, quarterly Technical Committee/Contractor meetings and workshops. 2) Work with CDOs to create target list of study-countries (i.e., Nicaragua, Dominican Republic, Colombia, South Africa, Tanzania, Uganda, Mozambique, Angola, Albania, Ethiopia, Nigeria, Ukraine, Afghanistan, Ecuador, Kenya, Mongolia, Bosnia and Philippines (CDP enabling environment matrix)) 3) Schedule CDO interviews; begin gathering existing 	Month 1

SCOPE-OF-WORK	Date Due
<p>Tanzania, Uganda, Mozambique, Angola, Albania, Ethiopia, Nigeria, Ukraine, Afghanistan, Ecuador, Kenya, Mongolia, Bosnia and Philippines (CDP enabling environment matrix))</p> <p>3) Schedule CDO interviews; begin gathering existing information on co-op laws and regulations from CDOs; include polling CDOs for (a) each CDO's expectations on the final product and (b) suggestions on issues that may require additional research, (i) on cooperative law in general and (ii) on sector/industry specific regulation.</p> <p>4) Begin gathering existing analytical tools used by CDOs to assess enabling environments;</p> <p>5) Begin cataloging existing sources of information at CDO and Spiegel & McDiarmid libraries.</p> <p>6) Work with CCA and ICA to identify expertise.</p> <p>7) Post information, laws, contacts, materials, etc. discovered and/or developed as a part of this Purchase order on an OCDC web site.</p>	
<p>1) Locate additional laws and regulations for target countries, i.e. those not provided by CDOs.</p> <p>2) Continue CDO interviews.</p> <p>3) Contact experts recommended by CDOs.</p> <p>4) Gather additional literature on assessments of enabling environments.</p> <p>5) Continue working with CDOs to identify sources and experiences.</p>	Month 2
<p>1) Continue gathering information.</p> <p>2) Analyze materials gathered; provide commentary on materials and analysis for use by CDOs.</p> <p>3) Create an annotated bibliography of sources attained; draft short memorandum on lessons learned and further research needed.</p> <p>4) Technical Committee meeting: review progress – set targets for second quarter.</p>	Month 3
SECOND QUARTER	
<p><i>Overview: research phase on co-op law/regulation continues, begin formulating responses to issues related to sector/industry-specific regulatory needs, begin case study research. First workshop to develop set of principles.</i></p>	
Second quarter deliverables	
<p>1) Identify cross-cutting issues related to sector/industry-specific regulatory needs and begin developing responses</p> <p>2) Continue CDO and expert interviews and information gathering on laws and regulations.</p>	Month 4
<p>1) Prepare for first workshop.</p> <p>2) Prepare first rough draft of <i>Principles of Co-op Law</i> for use at workshop.</p> <p>3) First workshop: with CDOs, begin to mutually develop and agree upon a set of principles based on research and experiences of CDOs; initial discussions regarding the needs for sector-/industry-specific law/regulation.</p>	Month 5 One day workshop in conjunction with OCDC board meeting – probable date towards end of 5 th month.

SCOPE-OF-WORK	Date Due
<ol style="list-style-type: none"> 1) Post refinement of research phase and draft principles based on feedback from CDOs during workshop. 2) Research and conduct interviews on various successful and unsuccessful case studies on processes for instituting change in laws and regulations begins. 3) Meeting with steering committee to review progress – set targets for third quarter. 	Month 6
THIRD QUARTER	
<i>Overview: research phase on co-op law/regulation and sector/industry-specific regulation continues, first draft of principles of good cooperative law and sector/industry-specific considerations, and share with outside organizations for feedback.</i>	
Third quarter deliverables	
<ol style="list-style-type: none"> 1) First draft of principles of good cooperative law and sector/industry-specific considerations are circulated to CDOs; feedback by CDOs within one week. 2) Revised principles and sector-specific strategies circulated; 3) Revised principles and sector-specific strategies shared with other organizations outside CDO community for feedback; 	Month 7
<ol style="list-style-type: none"> 1) <u>Second workshop</u>: all CDOs, invited interested/invested organizations – testing of principles and sector-specific strategies against general experiences; how do the principles and sector-specific strategies hold up under practical scrutiny; 2) Begin research and post best practices/lessons on processes for influencing/changing co-op laws/regulations 	Month 8
<ol style="list-style-type: none"> 1) Revisions to principles and sector-specific strategies based on workshop feedback; 2) Research and posting on various successful and unsuccessful processes continues; 3) Continue researching and posting best practices/lessons. 4) Meeting with steering committee to review progress – set targets for fourth quarter. 	Month 9
FOURTH QUARTER	
<i>Overview: finalize principles and sector-specific strategies, and develop and circulate best practices on processes for influencing/changing co-op laws/regulations.</i>	
Fourth quarter deliverables	
<ol style="list-style-type: none"> 1) Finalize principles and sector-specific strategies. 2) Develop and circulate best practices/lessons on processes for influencing/changing co-op laws/regulations. 	Month 10
<ol style="list-style-type: none"> 1) Revisions to best practices based on CDO feedback. 2) <u>Third workshop</u> – all CDOs, invited interested/invested organizations – testing of best practices/lessons against general experiences; how do best practices hold up under practical scrutiny. 	Month 11
<ol style="list-style-type: none"> 1) Revision to best practices, based on feedback from workshop; 2) Final meeting with steering committee – discuss follow-up. 	Month 12

