International Programs Division

Cooperative Development Program

Semi-Annual Progress Report
January 1, 2000 – June 30, 2000

USAID/BHR/PVC
Cooperative Agreement
No. FAO-A-00-97-000012-00

National Rural Electric Cooperative Association

1800 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Cooperative Development Program

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Submitted by:

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List of Acronyms

AES – AES Inc. of Arlington, Va.
BANRURAL - Banco de Desarollo Rural, S.A. (Guatemala)
CFC - National Rural Utilities Cooperative Finance Corporation
CDP - Cooperative Development Program
CER – Cooperative Electrica de Riberalta (Bolivia)
CRE - Cooperativa Rural de Electrificacion (Bolivia)
DCA – Development Credit Authority
DOE - U.S. Department of Energy
EC – Electric Cooperative (Philippines)
G-CAP – Guatemala/Central American Programs (USAID)
IDB - Inter-American Development Bank
IDFC – Infrastructure Development and Finance Corporation (India)
IFC - International Finance Corporation (World Bank Group)
MIF - Multilateral Investment Fund (IDB Group)
NRECA - National Rural Electric Cooperative Association
NEA - National Electrification Administration (Philippines)
PVC – Office of Private and Voluntary Cooperation (USAID)
REA – Rural Electrification Administration (U.S.)
REIH – Rehabilitation of Electric Infrastructure in Hurricane-Affected Areas (DR)
USDA - U.S. Department of Agriculture
WBREDC – West Bengal Rural Electric Development Corporation

EXECUTIVE SUMMARY

Progress toward achieving CDP goals in all of the focus countries was very good during the reporting period, with the following highlights:

Guatemala/Central America – An independent and financial self-sustainable rural electrification development program launched under a grant of 10,000 tons of USDA-provided wheat opened operations in January and is expected to double in capital before the end of the year. The fund's capital would double to nearly $2 million from the monetization of another tranche of 10,000 tons of wheat. A proposal for a $1.5 million USAID-funded project focused on hurricane rehabilitation was presented to USAID/G-CAP, and a new Central American region director, David Kittelson, was appointed and transferred to Guatemala City from NRECA's program office in Bolivia.

Philippines – Work proceeded with pre-investment activities regarding the proposed "Electric Cooperative Finance Corporation," under the NRECA sub-grant with the U.S. National Rural Utilities Cooperative Finance Corporation (CFC). The study projects a minimum capitalization of between $5 and $10 million in equity and quasi-equity, with an additional amount of $15 million in debt. Over forty of the 119 electric cooperatives are expected to contribute equity. The IFC of the World Bank group, which is co-funding the feasibility study, is planning to take an equity and debt position in the new CFC-like agency. NRECA/CFC are continuing to develop a plan to participate in the ECFC's management and operations, as discussed with PVC last year.

India – NRECA continued to work with the new West Bengal Rural Energy Development Corporation (WBREDC) to provide assistance in the design, planning and execution of a cooperative rural electrification model. A high-ranking delegation visited NRECA's rural electrification project in Bangladesh for a three-day tour of the Rural Electrification Board's offices and nearby electric cooperatives, and a Memorandum of Understanding between NRECA and WBREDC was signed. In addition, contacts were made with several other prospective Indian counterpart agencies.

Dominican Republic – With the recent privatization of the national electric distribution system, CDE, NRECA is working with one of the successful bidders, AES, Inc. of Arlington, Va. to develop a series of rural electrification improvement projects that could include a cooperative model, a first in DR. NRECA continued work on a $2.1 million USAID-funded project that is to rebuild hurricane-damaged rural electric assets. NRECA and AES are co-funding this work in several locations in the eastern region of the country. NRECA also continued to explore expanding this program to include a rural electrification program in Haiti.

Bolivia -- NRECA is continuing to provide technical assistance to two electric cooperatives under contracts financed by the electric co-ops, among other activities.

OVERVIEW

NRECA's third-year work plan continues to focus the CDP on developing independent funding capability to extend NRECA's long-term relationships with electric cooperatives overseas. Most of this program focus was centered on CDP-funded activities in Central America and Philippines. In the Philippines, the CFC initiative study was completed and negotiations got underway toward implementing a CFC-model finance corporation with some 40 electric cooperatives, as the majority owners, and with the International Finance Corporation as another strategic investor. The specific form and substance of NRECA's participation in the consortium should be worked out during the next CDP reporting period, although it is NRECA's intention to use CDP resources including part of the CFC sub-grant as in-kind contribution and part of NRECA's overall economic participation. Assuming an agreement can be successfully reached, NRECA will be able to look forward to a long-term and on-going role in the implementation and operation of this new corporation, with the technical support of CFC.

In Guatemala, as we have been reporting, NRECA is well into the process of setting up a revolving fund similar to the REA revolving fund, for the purpose of extending credit to rural communities to build electrification systems. The CDP was used to design this program in the first year (1997) and NRECA subsequently made a successful proposal to USDA in 1999 for a commodity monetization program that helped to establish the fund with permanent capital. Two tranches of U.S. surplus wheat have now been granted to NRECA by USDA for this program, and this year the fund began operations. NRECA is continuing to explore leveraging opportunities with international development agencies to increase the fund's capital and widen the program to other countries in Central America.

These schemes illustrate how NRECA is working toward greater financial self-sufficiency in its international programs. In the coming year we expect to duplicate both of these initiatives in other countries. Other opportunities are being evaluated, and as the CDP period winds down over the next two years, NRECA will re-direct resources as appropriate to pursue such opportunities.

COUNTRY UPDATES

Guatemala/Central America

NRECA's third-year work plan's key objective was to make operational, and expand, the "Electricity for Progress" project in Guatemala. This became operational in the first half of 2000 with the execution of its first loans under a guarantee arrangement with a local rural development bank, BANRURAL. The program involves the monetization of US surplus wheat provided by USDA to set up a capital fund for lending to communities for their electrification investments. The significance of this program is that it establishes a permanent capital facility under which NRECA will be able to sustain its rural electrification assistance work into the future. Funding for NRECA's

administration is also paid, in part, by the monetization, and NRECA technical assistance activities related to the project are included in the amount of the loan.

NRECA successfully proposed to USDA to augment the fund with a second tranche of 10,000 tons of wheat, which was awarded during the reporting period. The total amount of capital available capital should be on the order of $2 million by the end of 2001.

NRECA also made a proposal to USAID/G-CAP for a grant to expand the rural electrification fund in Guatemala and other countries in the region. USAID expects to award a grant of $1.5 million to NRECA under its Hurricane Mitch recovery funding which will focus on regions of Guatemala and potentially other countries that were impacted by Hurricane Mitch.

Finally, in February, NRECA sent a team to assess rural electrification needs in Central America and progress toward achieving CDP objectives, including several members of NRECA's Board of Directors, representing electric cooperatives in the U.S. The visit was exceptionally useful in conveying to NRECA's domestic members the importance of the international assistance program and the various types of assistance that U.S. electric cooperatives can provide. A summary of this visit is attached.

Philippines

NRECA's work plan for this year was to carry out a feasibility study of the proposed CFC-type agency and take steps toward its implementation. The NRECA/IFC feasibility study for NRECA lead CDP activity in Philippines was substantially completed by February. The study considered the viability and design of a private finance corporation modeled on the CFC, NRECA's affiliate and sub-grant partner. The study confirmed that the project would be feasible, although several key elements are not yet defined, including the amount of capital that the cooperatives and other parties will provide, and more technical questions such as the mortgage security arrangements, terms of lending from other institutions, and operational aspects. These issues will be finalized as the project moves into a pre-operational phase during the second half of the year. A summary of the draft final report is attached.

The "Electric Cooperative Finance Corporation" (ECFC) is expected to be capitalized at a level of at least $5 million from the electric cooperatives in its initial stage. Other equity or quasi-equity is expected to come from the IFC and other sources.

NRECA is preparing to participate directly in the capitalization and management of the ECFC, as noted in our previous meeting with PVC. By doing so, with CFC's help, it could improve the chances of the ECFC to attract other private capital financing – for example, IFC's participation. Participating will also establish a long-term program base for NRECA's continued support to the Filipino electric cooperatives. There are several options for raising NRECA's required participation the ECFC, which will be developed

as part of the upcoming 4th-year work plan. One of these is to obtain funding assistance for ECFC through NRECA, and in order to accomplish this, NRECA is making a proposal to USDA for approval of a monetization project to raise capital for ECFC. Other options include proposals to other agencies, which are being contemplated by NRECA, and "in-kind" contributions including NRECA-funded technical assistance under CDP and by other means.

NRECA continued shipping materials and equipment to Filipino electric cooperatives and hosted a large delegation of Filipinos at NRECA's annual meeting March.

India

NRECA continued to work on the development of a rural electrification program in the State of West Bengal. Visits were taken by NRECA staff based in neighboring Bangladesh and from the home office to develop more specific plans and funding strategies for helping the WBREDC carry out its rural electrification mandate. A proposal was jointly presented for funding to USAID/Delhi to provide organizational strengthening support to WBREDC and to prepare a project in one or more of the districts under WBREDC's responsibility. The proposal, for approximately $220,000 is under consideration by the USAID Mission.

NRECA also developed new contacts in India for pursuing related CDP activities, as follows:

- NRECA was invited before the West Bengal Chamber of Commerce and Industry to make a presentation on the electric cooperative model to rural electrification development, and to discuss its plans with WBREDC.[1]

- A presentation was made to the Infrastructure Development and Finance Corporation (IDFC) on NRECA's perspective of India's rural electrification sub-sector and methods of remedying its problems. Several high-level Indian policy makers were in attendance. NRECA and IDFC are considering a joint effort to demonstrate a new approach to rural electrification in one or more Indian States. A copy of this presentation is attached.

- A visit was made to a small renewable energy power facility in Haryana to explore the concept of setting up an electric cooperative. The plant owner is seeking funding to contract with NRECA to prepare a project study. As part of this visit, NRECA met with India's Minister of Power Kummaramangalam and several high officials of the Central Government to discuss the potential role of electric cooperatives in India's power sector reform program.

[1] See attached trip report

- Contacts were also made with an electric cooperative located in Maharasthra, and two private companies in West Bengal who are interested in working with NRECA on rural electrification projects around the country.

Finally, NRECA began work on proposals to participate in the South Asia Regional Initiative (SARI) program, which will be headquartered in Delhi.

Dominican Republic

NRECA's third-year CDP objective was to establish an effective working relationship with one of the two new utility concession owners in the DR. Toward that end, NRECA continued work on the REIH project under USAID/DR funding, aimed at rebuilding distribution systems damaged by Hurricane Georges. As noted in the work plan, NRECA is working with one of the successful bidders of the national electric distribution system, AES, to carry out the first project east of the capital city, Santo Domingo. AES and NRECA are co-funding the first project with a buy-in of over $200,000 from AES. Other activities during this period:

- NRECA has proposed additional funding from USAID to prepare a national rural electrification plan.

- A proposal is under discussion with USAID to utilize USAID's Development Credit Authority (DCA). This concept could be pursued as part of a climate change program that is currently under development.

- NRECA also continued to purse a possible new project in Haiti that will involve the personnel and experience of the NRECA's DR team.

- Proposals are being prepared for USDA commodity monetization for both DR and Haiti.

Bolivia

NRECA continued to provide support to electric cooperatives in Bolivia, including CRE, in Santa Cruz and CER in Riberalta. For CRE, NRECA executed a string of short-term technical assistance and training activities under direct contract to CRE. In Riberalta, NRECA executed a long-term management agreement to operate and maintain a biomass power generating facility that NRECA had previously installed under a USAID-funded project grant.

NRECA is continuing work on the development of an expanded electric cooperative support initiative in Bolivia aimed at reinvigorating a number of small municipal electric utility systems under a cooperative-style management format, with direct NRECA participation. This will involve support of CFC.

Finally, NRECA made an unsolicited proposal for a $5 million project grant from USAID as part of the FY2000 supplemental for counter-drug programs in the Andean countries.

Bangladesh

There was no significant CDP activity in Bangladesh during the reporting period. Discussions continued with REB personnel on the possibility of establishing a CFC-type of agency in the future. As noted, NRECA staff in Bangladesh assisted in promoting the electric cooperative model in neighboring India.

ATTACHMENTS

1. **Summary of Visit to Central America by NRECA Directors**
2. **ECFC Feasibility Study Summary (Philippines)**
3. **India Trip Report, April 2000**
4. **IDFC Presentation on Non-Urban Electrification Policy (India)**

NRECA Board of Director's Trip to Central America
February 26th to March 4th, 2000

Several board members of the NRECA International Committee and two board officers made a short visit to Central America to get a first-hand look at what International Programs does in helping the rural poor around the world get access to electricity. All concerned felt this was essential for them to gain a fuller understanding of our operations so as to be able to provide advice and counsel in our strategic planning process.

International Programs' future in rural electrification around the world will be guided by two recent developments. First, the massive move to privatize government utilities around the world makes promoting the "cooperative model" for rural electrification more difficult. Cooperatives are not seen by the private sector as fitting into the conventional privatization mold and are generally not considered as an option. Second, global warming and "climate change" issues must be considered in any rural electrification project – without considering green energy options, we may encounter more resistance from some parties to adding electricity capacity to feed the new rural connections. NRECA's International Programs must consider these two issues in its strategic planning process to be successful in the future.

In Guatemala, we visited two projects funded by the new USDA Electricity for Progress program. One was an upgrade to an existing grid extension to power a larger water pump for a community drinking water system. The community currently has water for only two hours every two days. With the new, heavier line extension, the community will get water everyday. The second project was similar, except that it was still in the planning stage and was to bring electrical power to a cooperative farm for irrigation. Both projects have already been approved and the signing ceremony for the drinking water project was held with the NRECA board members.

In Nicaragua, we visited a new rural electric cooperative just established in February 2000. This cooperative was funded by a cash grant from the Japanese and supported by NRECA International Foundation's Surplus Materials and Equipment Program. Around 200 connections were energized the day before our visit and most were coffee farmers. Several other connections were waiting funding. The cooperative office was functioning and a computerized billing system was in place. The board of directors had been elected and their first meeting was held this month. The board closely associated this coop with those in the U.S.

Prior to dinner on the evening of March 3rd, NRECA International Committee chairman, Michael Treadwell, asked the group to come together to discuss/exchange thoughts on the experiences gained from the trip.

Mike Treadwell (Oklahoma) - Mike opened the debriefing by saying that the trip had really been an "eye opener for him." He said that as International Programs gears up to begin a strategic planning process, the experiences and information gained from the trip

would be valuable to the committee members as they make input to this process. He was hoping that the committee members, officers, and International Programs staff together would be able to provide meaningful input in deciding the future direction of the International Programs. This trip made him much more aware of what International Programs actually does and will be of benefit to him as he participates in this process. He then opened the floor for comments from others about what they had gained from the trip.

Joe Webb (Indiana) - Joe said that he now recognized the cooperative model for rural electrification might not be possible in all countries. NRECA's has built itself from the cooperative model and we have promoted coops through the projects of our International Programs. However, in Guatemala, with the countrywide privatization program, establishing coops may be difficult, if not impossible. In countries like Guatemala, we may have to take another look or take a different approach to helping bring electricity to the rural areas.

Perry Rubart (Kansas) - Following Joe's discussion, Perry said we will most likely have to do whatever works in each country. If we have to work with IOUs in countries like Guatemala, then let's work with the IOUs. Our first priority is to promote the cooperative approach to rural electrification and we should do this wherever possible. If RE coops are not possible, then we must look at the alternatives.

Jim Andrew (Georgia) - Jim said he continued to support a focus on the coop model. He said that this is how our International Program began and feels that this is where the interest of our membership lies. He said he discussed this issue with some of the officials attending the project signing ceremonies yesterday. He understood from his discussions with a gentleman from INDE that there were seven areas in Northern Guatemala close to Mexico where coops could be formed. He felt that if we couldn't do any coop-related project elsewhere in the country, we should look at these seven areas and help them get electricity using the cooperative model. He said he was not convinced that International Programs should go too far beyond the coop model at this time. He said that any other work by International Programs might be hard to sell back home.

Joe Webb added that the coops in the U.S. had in the past done work with some of the municipal utilities.

Mike Treadwell asked, what is the purpose? If it is to form a coop, then do it. If it is not, then do what the project calls for. Peter Wojciechowski said that if it the coop approach, fine. If not, let the IOU's handle it and move on to the next coop type project. On the other hand, John Bowman felt that our goal should be to simply get the job done and get electricity to the rural areas.

Martin Lowery (CEO's office) - Martin said that he had been involved in the work of International Programs in the past, citing the work done in the Philippines and CRE in Bolivia. He said this trip reminded him of the importance of electrification and of the amount of work that remained to be done around the world. He did not participate in the Guatemala portion of the trip, but his visit to Nicaragua reminded him of the deep desire

that these people have for electricity and the appreciation they express to those that help them get electricity. Martin said that he felt our underlying mission was rural electrification and that this should be accomplished through the coop model wherever possible. He said USAID helped us start the International Programs office back in the 1960s by promoting the cooperative model. However, he understood the cooperative model might not be the answer in all instances.

Perry Rubart said that automatically assuming that coops should be implemented around the world because they have worked well in the U.S. might be a mistake. It might not be what is in the best interest of the country. Dave Cowan said that he understood the cooperative model was working well in those countries where theft was high. Because of a sense of joint ownership in a coop, a person stealing electricity understands that he is essentially stealing from his neighbor.

Bill Griswold (Illinois) – Bill felt that we should not forget the people, what they want or need, and that we should not get hung up on the coop model. Different approaches work under different circumstances. NRECA should find out what the people want and then adopt the best approach, whether or not it eventually involves coops.

Don Torgersen (Utah) – Don said that the work of International Programs is extremely valuable. People want electricity and the benefits that come with electricity. He had read about Scottish Power using the coop approach to rural electrification and they had some type of an O&M contract or coop distribution system under contract.

John Bowman (Virginia) - John favored promoting the coop model and principles in these countries. If Virginia Power is working with coops in this country, why can't INDE?

Mike Treadwell asked what was the Government of Guatemala's position on coops? He continued by saying that we need to get the exact status of, and barriers to, the coop approach to rural electrification in each country. Maybe we should get out of the countries that restrict the coop approach or help them set up a legal framework to permit coops. Mike said there is value in the coop approach and that this is our mission.

Dave Cowan (Pennsylvania) – Dave said he was a strong supporter of International Programs and understood the many challenges that NRECA has to address in each of the environments in which it is working. Dave said that he understood that in some countries you couldn't buy electricity (get a concession) under the coop system. Under these circumstances, he felt that maybe the Program should look into distributed generation and wondered whether it was economically sustainable? If it is, he felt we should look for those areas where distributed generation should work and implement a stand-alone coop there.

Group Comments -

How have existing cooperatives worked? Are they successful? Who handles generation expansion? Why is IPD important to NRECA? Can IPD be used on the Hill? What is important beyond the humanitarian benefit? Will whatever IPD does be acceptable to NRECA membership? We need to establish profiles about the actual and potential role of rural electric cooperatives for each country in which IPD could get involved.

Summary – Without questions, everyone participating in the trip felt the trip was a tremendous success. As stated by NRECA President Andrew, "there is definitely a role for International Programs in NRECA's future. I now understand what the board needs to do." President elect Cowan said, "International Programs and Climate Change will be my thrust when I am president". The other board members were "taking the message back" on stronger support for the surplus materials and equipment program and the sister cooperative program. By taking this trip, NRECA officers and board members felt they now had a fuller understanding of IPD operations. All felt they could better contribute to IPD's strategic planning process and would take the word back to other board members on what role NRECA should take in rural electrification programs around the world.

NATIONAL RURAL UTILITIES COOPERATIVE FINANCE CORPORATION
Powerful Financial Solutions

Draft : February 16, 2000

ELECTRIC COOPERATIVE FINANCE CORPORATION

FEASIBILITY STUDY

February 2000

EXECUTIVE SUMMARY

This summarizes the following Sections 2 through 5 of a study of the feasibility of establishing a self-help financing organization for Philippine rural electric cooperatives, "Electric Cooperative Finance Corporation". Exhibit 1A, "Summary of Feasibility Findings and ECFC Critical Success Factors" outlines key ECFC-related findings set forth in detailed reports contained as exhibits and identifies four factors critical to the success of ECFC. "ECFC Study Team", Exhibit 1B, provides contact information for contributors.

Acknowledgements
Special recognition is due to the following contributors for their guidance and support:

- Roslino Culalic, President, and Wendell Balesteros, General Manager of Philippine Rural Electric Association;
- Gil B. Medina, In-Country Representative of National Rural Electric Cooperative Association (NRECA) in the Philippines;
- Roberto F. de Ocampo, President of the Asian Institute of Management, formerly associated with SyCip Gorres Velayo & Co. ("SGV") and Former Secretary of Finance of the Republic of the Philippines;
- Vipul C. Prakash, Vipul Bhagat and Saud Siddique, of the International Finance Corporation ("IFC"), and;
- Conrado M. Estrella III, Administrator, and Manuel Luis S. Sanchez, Deputy Administrator of Finance, Loans and Accounts Management of the National Electrification Administration of the Republic of the Philippines ("NEA") and their staff, including Edgardo N. Bangit, Jocelyn O. Capule and Thomas L. Villaflor.

ECFC Feasibility
The findings of this study indicate that, subject to effective management of the four critical success factors discussed below, a financial organization owned by and dedicated to Philippine electric cooperatives is likely to succeed. The demand for ECFC's service is evident; the financing requirements of electric cooperatives ("EC's), the fastest growing part of the nation's power sector, are likely to exceed the capabilities of NEA or other accessible financing sources. There is widespread support for ECFC's establishment among the EC's, NEA, NRECA and international development organizations and recognition of necessities to attract non-government capital to Philippine rural electrification. A solid core of EC's have demonstrated themselves to

ELECTRIC COOPERATIVE FINANCE CORPORATION

Summary of Feasibility Findings and ECFC Critical Success Factors

09/18/2000 14:29

STUDY COMPONENT	FINDINGS	ECFC CRITICAL SUCCESS FACTORS
*** Preliminary Credit Assessment of Potential ECFC Borrowers - Section 2**		
A - The Phillippine Power Sector	* Cooperatives are fastest growing part of sector. * NEA privatization creates co-op financing needs.	
B - Electric Cooperative Operations	* EC's have established 63% of potential connections. * Energy losses and margins respond to investment.	
C - The National Electrification Administration	* EC's prepaid P382 million on NEA debt in 1998. * Improving NEA ratings reflect EC strength.	
D - Electric Cooperative Power Supply	* Restructuring to provide more power at lower cost. * Power supply to be adequate for EC's and others.	
E - Credit Overview of "Representative Cooperatives"	* National rating caps EC's below investment grade. * At least 24 EC's qualify for P817 million from ECFC.	**Continuing credit improvement of EC's.**
*** Electric Cooperative Financing Needs and Alternative Sources - Section 3**		
A - Financing Needs of "Representative Cooperatives"	* ECFC members need 250% of NEA budget. * "Expansion" accounts for about 42% of EC need.	**Continuing NEA co-lending to ECFC members.**
B - Financing Alternatives for Electric Cooperatives	* Capital markets and banks inadequate for EC needs. * DBP interest in EC's is encouraging but insufficient.	**ECFC access to DBP or other concessionary debt.**
C - Proposed ECFC-NEA Joint Financing	* ECFC must offer very strong collateral to attract debt. * NEA generally supportive of ECFC establishment.	**NEA-ECFC proportionately-shared EC collateral.**

ELECTRIC COOPERATIVE FINANCE CORPORATION

Summary of Feasibility Findings and ECFC Critical Success Factors

09/18/2000 14:29

STUDY COMPONENT	FINDINGS	ECFC CRITICAL SUCCESS FACTORS
*** ECFC Regulatory Considerations - Section 4**		
A - Philippine Taxation and Regulation	* Corporations subject to income and other taxes. * As co-op, ECFC subject to CDA.	
B - Alternative Forms of ECFC Incorporation	* ECFC operable as either cooperative or corporation.	
*** ECFC Organization and Financial Structure - Section 5**		
A - Cooperatives' Commitment to the ECFC Concept	* 58 of 120 EC's present at ECFC regional conferences. * 98% of participants willing to invest in ECFC equity.	
B - ECFC Financing Instruments	* Standard document forms available for ECFC.	
C - Proforma Operating and Financial Projections	* Corporation taxes add 2.10% to 2.35% to ECFC rates. * Non-EC equity adds to cost as well as funding ability.	
D - Preliminary ECFC Business Start-Up Plan	* ECFC start-up practicable with further details.	

be financially strong enough to meet credit requirements of National Rural Utilities Cooperative Finance Corporation ("CFC"), ECFC's counterpart in the United States. Further, a larger EC group has indicated willingness to invest significantly in ECFC's equity capital. All of these conditions, and other findings of this study (summarized in Exhibit 1A) , point to ECFC's feasibility.

ECFC Critical Success Factors

The study has identified four sets of challenges which require careful, intense management in order for ECFC to fulfil its responsibilities to complement NEA's missionary electrification role, to help improve the performance of its member EC's and to meet its own financial obligations.

Following is a brief discussion of four factors critical to ECFC's success:

- **Continuing credit improvement of EC's**
  As further discussed at Exhibit 2E-3 twenty-four (24) of the Philippines' one hundred and twenty (120) electric cooperatives were estimated to be eligible under CFC-like credit standards applied to their financial performance of 1996, 1997 and 1998. In order to assure ECFC continuing loan demand from qualified borrowers the Philippine electric cooperative sector must accelerate its progress with in-depth assistance from independent rural electrification experts.

- **Continuing NEA co-lending to ECFC members**
  Approximately 42% of ECFC members' estimated financing needs are for expansion, NEA's traditional missionary electrification role (Exhibit 3A). In view of NEA's responsibilities (subject to its own budget constraints) and ECFC's challenges in accessing capital (Exhibit 3B), ECFC borrowers will need continuing access to NEA financing to fulfill their service responsibilities and to meet non-government market financial performance requirements.

- **ECFC access to DBP or other low-cost debt**
  In order to shield its borrowers from abrupt increases in financing costs, ECFC needs a substantial base of low-cost debt (Exhibit 5C-1). ECFC must intensively explore borrowing from Development Bank of the Philippines and similar sources to allow time for Philippine capital markets to develop and for ECFC to demonstrate its reliability as a credit intermediary.

- **NEA-ECFC proportionately-shared EC collateral**
  In order to access capital at competitive costs, ECFC must be able to offer its lenders and investors the strongest possible assets as collateral. CFC's experience in the United States is that shared mortgage security in EC borrowers meeting objective credit criteria provides such assurance to capital sources (Exhibit 3C).

Feasibility Study Team

The following team members, listed on Exhibit 1B, were primarily responsible for conduct of the feasibility study and preparation of report components:

- Paul J. Clark, Vice President of NRECA International Ltd., coordinated the work of study participants and explored ECFC financing sources;

- Gen. Pedro Dumol (ret.), President of Comprehensive Rural Development Foundation, Inc. and his colleagues, Mariano T. Cuenco and Teresita Diamante, prepared study components regarding the Philippine power sector, including electric cooperatives, and conducted regional consultative conferences to assess electric cooperatives' commitment to establishing ECFC;

- Fides A. Balili, Anthony Q. Chua and Maria Rachel V. Riego de Dios, all of SGV, prepared those study components covering taxation, regulation and the Philippine financial services sector, with supervision from Mildred R. Ramos and Eduardo H. Suarez.

- Alakardri Bose, Principal of A. Bose International, Incorporated, provided liaison with IFC and advice regarding financing sources;

- Jose Hofilena, Partner, and Carina C. Laforteza, both of SyCip Salazar Hernandez & Gatmaitan, attorneys at law, researched and authored study components relating to ECFC's corporate form and its basic financing documents, and;

- Martin R. Crowson, Vice President – Strategic Development of CFC, developed ECFC operating and financial projections, prepared study components regarding credit assessment of ECFC's potential borrowers and organized the study report.

ELECTRIC COOPERATIVE FINANCE CORPORATION

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Trip to India, April 15 – 29, 2000

Paul Clark, May 2000

The purpose of my trip was to continue to develop a wider India strategy, including following up on some new contacts that could develop into useful relationships. We are moving in some pretty high circles in the power sector in India and we really have a good position to get a number of things started. If we want to make the cooperative case somewhere abroad, this is it. There are nearly 1 billion people in India, including some 500 million without electricity.

Our long-term interest in India is to develop economically efficient and financially sustainable rural electrification. I believe that the right way to do that in India is by tackling distribution efficiency problems in existing rural electric systems, as opposed to new ('greenfield') rural electrification as we have being doing in many countries. This was the objective in our core-grant plan what I envisioned doing in West Bengal when Alak opened that door for us (he has directly or indirectly opened many doors in India for us). I hoped to use the trip to see how this could play out with different projects, partnerships, and funding situations. A separate memo deals with the business strategic issues in more depth.

As a general comment, there is a lot of consternation about the exorbitant rates of return and guarantee provisions that private investors (IPPs) are demanding. The big ENRON project in Maharasthra is under a PPA, I believe, at around $0.08/kWh. Compare that with the mandated subsidy price of $0.02/kWh for agriculture and you can see what is happening. The high return rates are because the SEBs are not good financial risks – they can't collect at the retail level. And so investors are asking for the moon – not just guarantees, but escrow accounts. These questionable deals will compound the problem by accelerating the rate of increase in consumer prices, over the medium term. If what happened in the Philippines is any example, once the system is working better top to bottom, these PPAs are either going to have to be renegotiated or there will be one heck of a stranded investment problem.

Meanwhile, there is only one State (Orissa) that has actually privatized distribution, and it is not going well. The time is ripe to introduce a new approach.

Bombay - April 16-18; April 28

IDFC. Mak Dehejia is a highly respected power policy consultant in India who had a career in the World Bank/IFC. Mak co-authored a new vision paper for a huge public-private investment company that was formed a couple of years ago, the Infrastructure Development Finance Corporation, and invited me to give a presentation on rural electrification. Mak and I had a couple of meetings in DC over the past several months. His position paper had a few "holes" including what to do about rural distribution reform.

Our conversations have centered on how NRECA's experience might help IDFC settle on a realistic option. He chairs the IDFC's power policy committee and led the session.

The presentation went quite well. I met a couple of key contacts, including the CEO of what is said to be the premier private power utility in India, the Bombay Suburban Electric Service, who also serves on the policy committee. At the end of my segment of the meeting he asked if we would like to help BSES in Orissa. It's one of the projects we may end up doing (see below).

I had several discussions with IDFC mgmt. about working together. Since IDFC are 40% owned by the central government of India, they have policy access. IFC is one of their investors. I reviewed some ideas with the management team for a potential working relationship, and had follow-up meetings with them on Thursday in Delhi and again Friday Feb. 28 when I returned to Bombay on the way out of India.

R. V. Shahi, CEO Bombay Suburban Electric Supply. On the 28th I met with Shahi and IDFC CEO Nasser Munjee at Shahi's offices in Bombay. Shahi is a mover and shaker, but could have a big headache in Orissa. BSES bid and won three of the four distribution systems in Orissa. I didn't get the figures, but he is now stuck with higher distribution losses than was thought to exist and is under pressure to get them down under the new regulatory scheme. He has similar problems in both urban and rural systems, but especially needs help in the rural sector. There are 900,000 customers in his service territories, of which some 700,000 are in rural areas. He has recruited a local management institute to begin the process of increasing collections in the rural areas, starting with 100 villages. He is using a similar model to what I had in mind, but there is no co-op scheme included. He said he knows that it won't get the job done, and is concerned about the capacity of the local NGO. He sees NRECA as filling a missing element. He is also concerned about the capacity of the local NGO. We went over a general business approach, possibly involving our teaming with the NGO (Xavier Management Institute) at some point in the process. I think BSES are ready to do a deal as soon as we are ready to go. Unlike others project opportunities in India, this is all private and can join directly with us, which is the approach I think will work best. I had lunch with Munjee after the meeting at BSES, and left it that we would send a concept to them in writing and work together on getting the funding for a planning study and a pilot phase.

N.D. Khurody, Voltas Ltd. He came to a lunch arranged for me by Munjee on Tuesday the 18th. The CFO of the Tata-owned electric power company that serves part of Bombay was also there. I sat next to Khurody, and after learning that he had helped to set up the National Dairy Development Board in Gujarat several years back, told him about our attempt to get an electric co-op set up in Gujarat (Kheda District) a few years back. I also described the pilot project I was exploring in Haryana along similar lines only smaller scale. He liked the idea, and suggested a similar situation that could be done in Gujarat with Tata. I told him when I returned to U.S. I would send him a concept by email, which he requested; he would then pass it on to the Tata folks in Gujarat. Tata is a huge player in heavy industry and several other sectors, including power.

Sanjeev S. Ahluwalia, Secretary , Central Electricity Regulatory Commission. This fellow is a member of the national regulatory agency and a member of Mak's policy committee at IDFC. The commission controls the regulatory policy for the country, although has limited influence over the State PUCs, where the main action will be. He flew in from Delhi for the meeting and we sat next to each other. Since my paper covered our traditional RE co-op model as well as the "no-wires" approach, he got a good picture of co-ops as an electric distribution management model in a traditional system and in a more open market system, which is where he wants India to go.

The government's problem is that few investors will come in where absorbing subsidies is part and parcel of handling the distribution networks, yet the gov't is desperate to get something done in distribution. We discussed the merits of separating distribution from retailing. He wants to pursue this, and also learn more about co-ops in general. He has access to funding from USEA and wanted to see if we could bring over a team to discuss the cooperative model. He will make the request.

Calcutta – April 19-23

West Bengal Government contacts. I had several meetings with key people, first with R. Bandyopadhyay, Secretary of the Power Dept. and the top civil servant in the state electric utility sector. He was in the delegation that went to Dhaka. We had a good two-hour meeting. Several staff were there, including the MD-elect for REDC. We followed up with a lunch on Sunday before I left for Delhi. Bandyopadhyay told me point-blank that, whereas the REB model was a good example, they would not attempt to duplicate it. He said that they have several approaches open to them and want our help in finding one that fits. He noted that they are being approached by others besides NRECA, including the UK aid agency.

At the lunch meeting on Sunday we went over some specific issues that related to the draft vision paper:

- I reviewed the financing situation with him. If there are 40 million people to electrify, plus a lot of distribution re-hab and upgrade to do, they are probably going to need funding in the USD billions. I suggested that we consider alternative ways to use the small amounts that are being given to SEB/REDC by the State gov't now, both to leverage, and also to set a pattern that could be used to interest some lenders who might otherwise not be interested.
- I told him that we would recommend that the rural systems have access to higher voltage than the 220/440V in the REDC documentation, and that over time this could be adjustable upwards (from 11kV to 33kV, e.g.). I knew that Kent had already raised this. I told him that in Philippines, co-ops are now taking over the 69kV lines in their service territories.
- I told him it was important to insulate the co-ops, especially operational aspects, from the control of local politicians who in turn are controlled in time by one party or

another. I mentioned problems we'd seen in other countries, i.e. Philippines, Nicaragua. I pointed out that in the U.S. the co-ops have always been careful to pursue only "one-issue" politics and make sure that they keep support from both major political parties. The system, as Kent says, will ultimately need to employ the Panchayat councils like it or not, but it can't be operationally controlled by them. He isn't worried about this, but I think this is all the more reason to change the formula so that we distance the Panchayats from the operations, and especially from the money.

We agreed that NRECA would give him a memo/report identifying (1) our key concerns and key recommendations and (2) a general blueprint for what NRECA envisions doing in its sphere of the REDC program, including timetable. He knows that funding is a driving issue for us on all of this. I told him that we were using the resources we had to lobby for USAID funding, but that we were looking elsewhere, also. The latter could require WBREDC joining us directly in making a proposal, which he gladly agreed. He would like to schedule a trip to US to get into the details of our plans, talk with donors, maybe see a co-op, etc. He has the budget, but needs the invitation. I can handle that, but I want to review some of this with the IFC, World Bank, and GEF people I've met on India, first. The best timing for him would be mid-summer but it would probably be better for us and the program to do this sooner.

We also met with the Minister of Rural Development, who was clearly interested in our approach and specifically said that he favored the idea of cooperatives. He could be important, if for nothing else sees WBREDC chairman Chakroborty as his political protégé. We also met Somnath Chatterjee, head of the West Bengal Industrial Development Corporation. He's a lawyer with a very keen intelligence and has been mentioned as a long-shot candidate for Chief Minister (State Governor equivalent) for the ruling party in the next election. He asked some very good questions and made an effort to get to the key aspects of our ideas and experience. He was very positive by the end of the meeting. Again, his approval could be important, and has influence with the current Chief Minister, who is reportedly going to retire from politics as the CM in West Bengal over the past 23 years.

<u>B.D. Bose and Bengal Chamber of Commerce and Industry.</u> B.D. is Alak Bose' brother, and current president of the BCCI, a respected organization in West Bengal and in India in general. It was established under British rule some 85 years ago, and is the oldest and largest CoC "east of Suez." At the time of the initial visit in Nov 98, Alak and I had discussed the idea of my addressing the BCCI on the U.S. co-op model. For one thing, in several other places where we've tried the consumer privatization model, the businesses were key, and I suggested we get to know them. For another, industry is influential and we need to get a better perception of co-ops, in general. The presentation went reasonably well. B.D. was happy, and WBREDC got some exposure. We made some new contacts. There were a couple of TV interviews which aired later, and some press reports.

Dishergarh Power Supply Co., Ltd. While in Calcutta, I stayed at the modest guest house of what I was told was one of the two private electric utilities in WB. Jim joined me there after his first night in. The host in Calcutta, Arabina Dasgupta, is Chair of the BCCI Energy Committee and is CEO of the Dishegarh Power. They are working with AES in the fourth distribution sector in Orissa. His service territory is partly rural and he has an attitude that should fit well with ours. At the end of our first meeting, I brought up the idea of our looking at partnering in the work with the WBREDC. We both see the need for NRECA to work through a local "face" and he has good hands-on experience with rural villages. In fact Dishergarh Power would bring much more than local know-how. He attended the BCCI workshop, and suggested another session on the approach to dealing with the cultural changes that will be needed in the electric distribution. We're long in that suit, also, so it is a natural for us to work together.

Jim and I took the 3-hour train trip up to their operation in Dishergarh on Friday the 21st. They have a top team that puts a premium on modern information technology and management. They say that they have the cheapest power in the country and that their distribution system (150k meters) has 6% losses. Their power is cheap because they are get financing and coal at a bargain from one of their parent company's main businesses, the coal mining industry in the state of WB. But they are definitely good. The whole family of businesses grew out of a government take-over of a Scots mining business, so they are government-owned, in that sense, but they behave like a private company. The power company, and their consulting subsidiary, DESCON, have a highly skilled staff and a well-integrated set of computer-based operating systems (billing, accounting, GIS, etc.) that we may be able to piggy-back on in our co-op development work with WBREDC. I think Jim and I both felt that this was unique group and could save us a lot of build-up time and training if we could package them into the work as a direct partner. I wouldn't be surprised if we were to find that they would be a good partner for other work, not just West Bengal, and perhaps not just in India.

The main event of our trip was to inspect a rural extension plan that they are negotiating with the WBSEB. I think it might be an opportunity to do the rural power concept with WBREDC that I had originally pictured. I agreed to send Das Gupta a concept paper. We happened to be on the same plane to Delhi on the 23rd and we went into this in more detail. He is positive on the idea, but it will need to be planned carefully.

SREI International, Ltd. I met one of the managers of this firm through IFC/Alak. It started out as an equipment leasing/financing firm and is now getting into infrastructure specifically roads and power. They have a plan to get heavily into solar pv for rural electric service and have a deal with Tata-BP Solar. The problem is that they don't know who is going to make sure that the business will work, operationally. In their first project (an island in the delta), they are interested in working through local youth clubs and also in setting up a co-op scheme to assure (1) payment and (2) system up-keep. They have an NGO (Rama Krishna) to help with this but they aren't willing to bank on them. Will they be able to collect from consumers if the units start to fail? That's certainly the right question to have, as lenders. They're sharp businessmen and the kind of folks we need to partner with. I was going to go out to this site, but the Dishegarh trip looked more

important. The want to know how we can help them. The problem would be the small scale and also how to fund our work. The financing for this is coming from IFC's soft-window renewables program so my plan is to check with IFC and see what is possible. Anyway, I told SREI that, at a minimum, we could share some information on the local user association and other formats we have used in Latin America for the institutional aspect of SHS development.

I would feel more confident if we worked with them on a larger-scale scheme to start. There may be one, a situation at Port Blair in the Andaman Islands. They are financing a 20 MW IPP that will sell to the government utility operation there, which by all accounts is weak. In our DC meeting several months back, we reviewed the co-op option for this, including our experience with a consumer stock company model in Latin America. They are going to pursue this with the local authorities first. We will then go to the top in Delhi. The advantage here is that there is no SEB. We can do the deal directly with the Central Gov;t. After meeting with the central gov't authorities in Delhi, I feel all the more sure this could be a project, esp. set up in the stock company format. I met with SREI's management team and we agreed to plan to work together on this project, even though they are most interested in knowing how we could help them with the SHS business they are trying to start. They have financial structuring expertise, plus money, plus good contacts.

WBREDC. We had several meetings with WBREDC, including Chmn. Chakroborty and several of the top staff. The meetings were all good. As noted by Kent, we need to be concerned about their plans to use the local community councils (Panchayats) in lieu of elected co-op boards. This could spell trouble, although we aren't going to remove the panchayats from the scheme. Private sector players are leery of working with them, especially where they have a controlling role in an operational sense. WBREDC must use them, since they are mainly members of the CPI-M (communist party) which has been the ruling party in WB for 23 years. Their political base is rural. WBREDC must be considered as an extension of the CPM machine, and Chakroborty is clearly political. The behind-the-scenes view is that RE has become one of CPM's main focus areas leading up to the spring elections next year. WBREDC has gotten $22M to spread around, and will be given another $50M that they have been told to move between now and March 2001. According to a few who know what goes on in WB, the problem is that CPM isn't merely wanting to get credit for RE, but want to get tangible benefits into the hands of people who will deliver the rural vote, i.e the local political leaders. The land reform program that CPM administered over the past two decades is completed, and with a lot of favoritism involved, I was told. They keep their panchayet base this way, I learned. This is only one more reason to try a different approach here. If everything is top-down from REDC, we will end up working under the CPM, as long as they are in power. When/if they lose power, where will we be then?

My thing with WBREDC all along was to suggest that we help them develop an outsourcing approach to implement rural distribution improvements/ electrification with built-in financing for the services (our services), so we can establish a funding base to stay engaged over the long haul. It is also important so that the implementation isn't

hostage to political decision-making. Our access to grant money is most likely going to be limited. We need to use what there is available to establish our business position in a way where we can stay involved beyond the planning stage, in short.

We didn't end up spending much meaningful time with Chakroborty for some reason. Of those we met, I felt that the most helpful person was Vivek Kumar, the Executive Director. He seemed very comfortable with giving NRECA leeway to come up with its own approach. He also noted that WBREDC could use NRECA's assistance in the master planning activity that Kent has been focused on and the technical assistance/institutional support of the kind that NRECA has been providing REB. He suggested -- for purposes of seeking funding -- separating these WBREDC institutional support functions, as one type of NRECA involvement, and the pilot project (s) as another. That sounded right to me, where we try to get USAID support for the initial aspect as more of a model-building undertaking. The second aspect is more of a business model, as I see it, and probably not that conducive to SARI but USAID may also be interested in helping us with that.

Delhi/Haryana

Nuchem, Ltd. This is a private fiberboard manufacturer about 3 hours from Chandigarh/Panchkula near the Punjab border. Nuchem employs hundreds of people in several enterprises in Haryana state, with headquarters in Faridabad outside Delhi. They plan to expand the plant they have now, and add another in a new location. Nuchem is run by a well-respected patriarch, Romesh Barar, and his sons and nephews. The younger set is very bright and pro-active, and the old man is more of a visionary. Alak introduced me to them several months ago. I felt that this might be an opportunity to break into the rural electrification policy situation in Haryana under our own steam. Nuchem are requesting a TDA grant to help with their study. The proposal has been submitted and is being evaluated by one of TDA's outside consultants. We agreed to use part of it, plus a volunteer, to get a first-cut analysis done on the distribution system and a couple of related questions. That would then lead to a larger study, possibly funded by TDA as well. I had outlined a scope of work for this and will modify it somewhat and send it to them.

At Tohana, they operate a 4-MW biomass plant that meets their internal requirement with about 1 MW of surplus. Originally they sold this to SEB, but they had big problems with payments. Now, since it is a renewable energy plant, they can take advantage of special provisions to wheel and "bank" energy with the SEB (HVPN). And so they are wheeling the energy to Faridabad. Through Alak, I had asked them whether they had thought of selling the power locally, and they immediately jumped on this in a series of contacts through Alak beginning last fall. In our first face-to-face meeting, I found out why. R.C. Barar had tried to set something similar up some 15 years ago with a cooperatively-owned 100 MW plant for industrial use only in Faridabad. He got the whole thing ready to go, with the support right up to the Prime Minister, including a 0.75% long-term loan from KFW and it fell through at the last moment due to personality conflict among two of

the heavier hitters in the group of local industries in Faridabad. He still wants to do this. By coincidence the day we were in Delhi a news report came out that a similar project for a large "cooperative" power plant was being developed in Andra Pradesh.

Back to Tohana: the basic question was whether, in the planned project expansion or in a duplicate pressboard/cogeneration investment they are planning in another locale in Haryana, the idea of setting up a co-op as part of the scheme would work. My finding is that Nuchem is as interested in getting something like this to work from the standpoint of fixing what ails the SEB as much as doing something to improve the financial viability of their power generation. They are pretty flexible on the pricing, which is one reason I feel this. They are also interested in expanding directly into the electricity business, and they think that the local co-op/captive power approach is just what will work. I see it as an intermediate improvement on what there is now in Harayana (the distributed power idea), but the more important issue for us is seeing how to set up a co-op structure and whether it will work.

The Barars set up a major schedule for me, with the help of an ex-politician R.K. Sharma who is Nuchem's PR consultant. After arriving Delhi Sunday night, they picked me up Monday morning and we drove up to Tohana, about 4 hrs to the NW of Delhi. We stopped in a town halfway and were interviewed by a couple of newspapers. As in every interview I had like this during my trip, I pushed the idea that co-ops are private-sector and that they function well in the U.S. and other countries. Once at the plant, there was a meeting with the Deputy Commissioner (read: assist. county executive), the head of HVPN's new southern distribution company (we later met the head of the northern DISTCO), and a large entourage of mainly HVPN staff. I explained our background and what we might be able to do. I asked some specific questions on the attitude that the people in the area might have toward a co-op. The commissioner was intrigued, but not convinced. He said he would do whatever he could to help and is a very bright person. The HVPN CEO was ready to discuss turning over whatever part of the Tohana area we wanted, and I could understand why. Over half of consumption is in subsidized agriculture. But his cooperative attitude was one of the more encouraging signs I found. Both of these guys are national civil service people ("IAS"), and more professional than political.

We toured the town and visited the 33kV/11kV substation located 1 km away from the plant. I got some data on the system there, maps, etc. We discussed what might make a good "co-op," based on taking over several feeders including the two going in to the town. We checked out the fiberboard plant and the co-gen facility. In the morning I was given some information on the plant that I had requested, and guess who did an analysis on the proposed expansion? Bob Chronowski, under a World Bank contract in 1997. I got part of his write-up. Barar said that Bob told him if it hadn't been for a conflict of interest as WB consultant, he would have been interested in participating in the project. As darkness fell, we visited a 1-2 MW potential irrigation drop hydro site, and called it a day.

HVPN and the Gov't of Haryana, Chandigarh. The next day we started early and drove another 3 hrs to Chandigarh with meetings with the top brass including the SEB/HVPN chief, his top staff, and the ranking power sector person in the State. During the day, we had a series of meetings with State-level cabinet-rank people and others, including the state equivalent of IREDA (India Renewable Energy Development Agency, which we're working with under an ADB contract). HREDA, as it is known, is planning to facilitate Nuchem's new biomass co-gen investment. There are a bunch of new incentives for renewable fuel plants. Everyone was positive on the idea of setting up a pilot co-op in Tohana, with possibly the exception of the top person, a really arrogant female. She pooh-poohed the idea of getting people to join a co-op. She said, in effect, that people in Haryana are a bunch of hillbillys (*"jot"* is the word), they don't like to cooperate, and in fact cooperatives (non-electric) generally have a poor track record there. (In many parts of India this is the perception). I was told that some *jot* families breed boys just to go and knock off some rival in town, even knowing that it means the son's fate is sealed. There must be some pretty hairy Hatfield-McCoy dramas going on in Haryana. Anyway, the illustrious Secretary for Power in Haryana is skeptical about getting people to get on board with a more commercial electric service, but she was willing to let us give it a try.

The contrast with other senior people couldn't have been more different. A couple of first-secretary types (industrial development, e.g.) told us, when they heard the plan: 'this will work.' Anyway, we generated a lot of excitement. I was probably the least excited of anyone. I think it is going to be plenty tough, but if anyone can do it, RC Barar can. He is really well connected and I found him to be a go-getter who stops at nothing. He isn't entirely sure how to do it, but he had some interesting ideas. For example, I asked him if he would be willing, if we set up some type of energy co-op, to let the members share in the equity investment for the plant expansion. He smiled and said that he had already thought of having farmers bring in their ag waste (high cellulose cotton and other non-fibrous materials) and get either equity or electricity in exchange. In fact, I don't think the focus should be on the distributed powerplant idea, now that I've seen what we might do. We might work it in to some extent, but the size is too small for what we really need to do. Barar agreed.

Interestingly, the Secretary said that HVPN were trying to get housing co-ops in the State's cities organized into electric co-ops, without much success. I also heard this from the national Minister of Power (see below). I think that might lead to something. Basically, she said that we had better plan on settling for doing something in the urban areas, most likely in energy conservation/DSM, or not even get started. Actually, that sounded pretty interesting and I said something to that effect. On that point, incidentally, the World Bank APL project is supposedly back on track in Haryana, as of this month (April). Their next tranche will be a $25 million chunk to develop an energy conservation/DSM project. We might try to package that into our plan.

We headed back to Delhi starting at 5 p.m. We did some 650 km that day, plus a full schedule of meetings. The last one was in the office of the Chief Editor of the *Chandigarh Tribune*, which is read by the Sikh community worldwide, according to Barar (Punjab is the home base for this sect). He had a staff reporter taking notes and

there was an article in the paper the next day (I was misquoted in some minor ways, in a couple of instances). Upon seeing us to our car at the door, he shook my hand and said, "it's refreshing to find an American in India talking about cooperatives instead of profits."

Ministry of Power, Delhi. I had sent a letter to P.R. Kumaramangalam, the Minister of Power, before leaving DC which was to be routed through SREI. Independently, Barar also told me he would plan on setting something up. In Bombay I heard that the Minister had been hospitalized so I wouldn't be meeting him. In fact we ended up having three meetings, including one with him. On the 26th we met with the State Minister for power, Jayawantibeh Mehta, who is effectively Deputy Minister. She stopped the meeting halfway through and put in a direct call to Kumaramangalam. A meeting was set up on the spot with the Minister for the next day. Some other heavies in the national gov't's electric power sector team were at the second meeting, including the Joint Secretary for Power, the Secretary, Mrs. Mehta, and REC Chairman Divakar Dev, plus several other staff. Barar and his team were there, also. The meeting went very well.

Kumaramangalam pledged whatever support we needed, noting that he had only limited power over the States in this area. He thinks we should focus in Gujarat and Maharasthra (where ag co-ops, at least, have had some success), but he said he would like to see several models tried, including a consumer stock company along the lines we had tried in Latin America. He raised this idea, not me. It is very clear that the government would like to see a co-op model work, but they don't think that the traditional method has in fact worked. The REC chairman/CEO (Dev), in particular, was not very positive in his comments. I stressed a demand-driven, bottom-up approach. The Minister ended the meeting by repeating that he would help us. I believe an opportunity might be in getting approval to set something up in his own jurisdiction (Andamans).

Rural Electrification Corporation. I hadn't scheduled a visit with REC, so we had a meeting immediately after the Kumaramangalam meeting. They may or may not be a useful part of our plan and in any case, I think we should get our basic plan for India settled before we go to them. One thing I was sure of was that we did not want to get cornered into an exclusive partnership with them from the get-go. REC made a profit of 50 million rps. last year and I wanted to know how. Mainly it was done by lending to SEBs, which cross-subsidize rural electrification and in many cases, also get a bail-out from the State treasuries. So SEBs do repay, unlike many of the co-ops, evidently, but this is obviously not going to last long, as the SEBs are hard up for cash and increasingly they will go by the wayside. Reform and privatization are now taking place in most of the big States in the South, and Maharasthra announced it was starting the process, as well. I then asked him about the co-ops and he said that, as a group they are failing, and don't pay their debts. No wonder, since they don't have scale economies nor state budget handouts that the SEBs do. The fact is that some of the fundamentals are probably better in the co-ops, e.g. billing and collection rates. I briefed him generally on what we plan to do, and said that, in effect, we were going to try to develop some new types of REC borrowers in the future. The meeting ended on a positive note. We will need to keep REC in the loop and get back with them at the appropriate point, i.e. when we need to

discuss financing, which I frankly doubt we will do, based on their existing lending terms. Their interest rates (rps.) are currently in the range of 13-15%. That contrasts with 16% and upwards from private lenders. Affordable financing is going to be one of the bigger issues for rural electrification investment.

USAID. The meeting was with Dick Williams, Sandeep Tandon, and Ashok Sarkar, who is managing the Mission's Energy Conservation and Commercialization unit. I briefed them on my trip and discussed our orientation toward a wider India strategy.
We discussed the regional funding initiative, but perhaps our better opportunity is what USAID/Delhi can do with us, perhaps with the Energy Conservation program. Their program is aimed at supporting an ESCO industry in India, and it includes a $10 million credit line. I went over the basic dilemma in the distribution sector, and they realize that, in order to do any work with distribution efficiency, they will need models that assure ability to pay, and in fact many ESCOs have this problem in cases I've encountered. Sarkar agreed, and felt we might have something that could address a gap for them. More important, the cooperative model I have in mind could fit well with an ESCO effort. We agreed to send them a separate proposal. After the meetings with IDFC, I called Sarkar again. He was very encouraging. They would be particularly interested in seeing this done through a relationship with IDFC. Energy conservation, including addressing irrigation pump motor efficiency, should be part of our plan.

Other business. With all the last-minute meetings in Delhi, I did not get over to IREDA. I hadn't scheduled specific appointment, with the plans up in the air for the Delhi segment, but I thought that I might drop in on them. The ball is in ADB's court anyway. Also, while in Bombay, I got a letter from the electric co-op about 8 hours east of the city by car, Mula Prevara, inviting me to visit. I had sent a letter inquiring about visiting them, but it wasn't as convenient as I hoped. I spoke with the MD over the phone and they are keen to get our help.

There are a number of follow-up activities from the trip. This is long enough, so I will cover this in a separate memo.

Presentation on Rural Electrification Issues to the IDFC Power Sector Policy Advisory Board

April 17, 2000

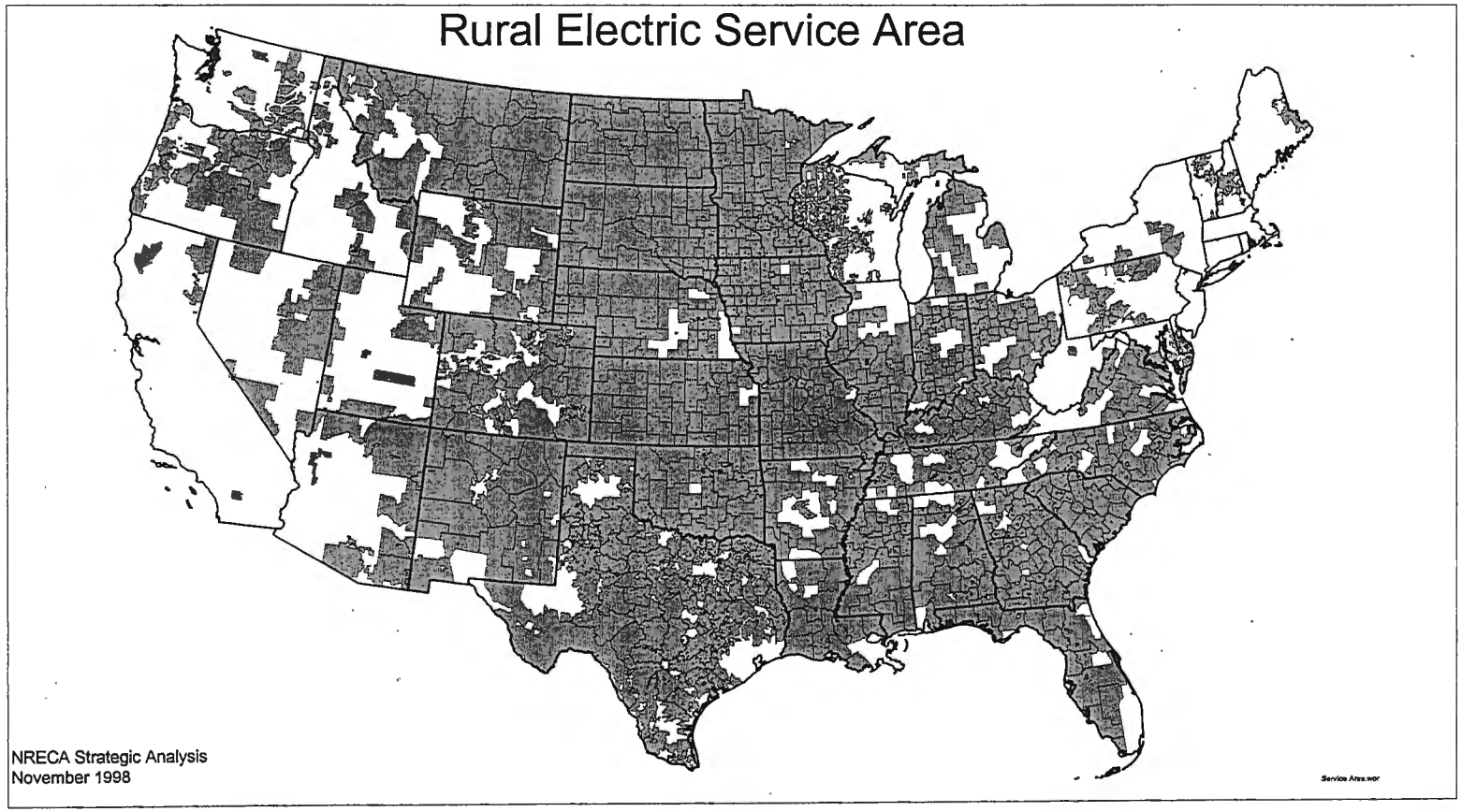
Paul J. Clark, Vice President
NRECA International Ltd.

The National Rural Electric Cooperative Association

- An association of over 1,000 electric cooperatives and affiliates in the U.S. established in 1942 as a direct outgrowth of the Roosevelt rural electrification program.
- $65 billion in total utility assets with over 2 million miles distribution lines and 30,000 MW of generating capacity and associated transmission.
- Emphasis on the consumers:
  - direct involvement of beneficiaries in ownership
  - sense of obligation for community economic development
  - accountability to meet service standards.

Electric Cooperatives in the U.S.

Serving 11 million meters covering 75% of landmass



The National Rural Electric Cooperative Association

- Funded by member dues and fee programs and cost-reimbursed programs; annual revenue of $100+M.
- NRECA services to members:
  - Strategic planning and market research
  - Consulting services
  - Conferences and employee training programs
  - Employee insurance and retirement programs
  - Lobbying, publications, and public information
  - Technology R&D and other cost-reimbursable programs.

The National Rural Electric Cooperative Association

- With current deregulation, NRECA moving its members toward:
  - Competitiveness strategies
  - Consolidation of resources
  - National branding/advertising
  - Entering urban and other energy markets
  - Diversification into other services and sectors.

The Rural Electrification Administration (REA): A Consumer-Driven Model

- U.S. experience built around a single-purpose revolving fund established with government appropriations in 1935.
- The "REA" invited rural communities to borrow for their own electrification projects -- electric cooperatives emerged as the typical borrower.
- Technical and operational criteria established by the REA with oversight and loan portfolio management.
- Construction and other services contracted to private sector.

Rural Electrification Parameters

- Economic -- closely related to the rural development sector as a critical building block for raising productivity and employment creation.
- Social -- concept of "area coverage" important in REA model.
- Financial -- Cost recovery through tariffs, with transparent subsidy on a needs-driven basis.
- Technical -- standardized designs and any technology choice that adequately serves the demand at least cost.
- Institutional -- engage beneficiary communities directly in implementation, governance, and management.

Basic Characteristics of Rural Electric Cooperatives

- Financial commitment required in order to join.
- Democratically-elected Board of Directors - appoints and oversees management.
- Emphasis on employee training and motivation.
- Year-end margins allocated to members in proportion to energy use.
- Standardized engineering and accounting systems.
- REA established the pattern, but impetus came from the communities.

Electric Cooperative Basics (Continued)

- Operates like other public utilities with similar management and operational practices.
- Some key differences:
  - Less government regulation required, due to democratic control.
  - "Profits" accrue to users as the owners.
  - Emphasis on customer service and community improvement.
  - Electric co-ops work in greater collaboration; formed second-level cooperatives and joint ventures.

The "Cooperative Finance Corporation" Cooperatives' Access to Wall Street

- Organized in 1969 by U.S. electric and telephone cooperatives to develop an alternative to government financing.
- Sold term certificates to co-ops who joined as the basis of arranging long-term and medium-term debt issues.
- Participating co-ops entitled to borrow from CFC and to receive share of net margins.
- Currently with $3 billion in paid-in equity and some $30 billion in total financial commitments.

New York's "1st Rochdale Cooperative" and the Emergence of Urban-based Electric Cooperatives under Open Access

- Organized by New York City housing cooperatives in the mid-1990s in response to deregulation of electric utilities and advent of "consumer choice."
- Aggregates demand for energy and telecommunications services in order to obtain greater range of services at better prices.
- Currently provides satellite TV, residential fuels, and energy conservation services.
- Negotiating to buy power at wholesale prices and/or construct captive power generation plant nearby.

Standards for Sustainable Rural Electrification Programs

- Clear, and pro-active public policy, with comprehensive set of criteria for technical design, appropriate technology selection, economic and financial eligibility.
- Dedicated financing with nurturing oversight mechanisms for program implementation.
- Lead with a competent technical/financial entity to assure solid design, implementation, and operational efficiency.

NRECA International, Ltd.

- Private non-profit firm with 38 years of overseas experience.
- Implemented projects worldwide with connections today serving some 50 million people.
- Comprehensive "toolbox" of rural electrification development and support skills.
- Backed by U.S. electric co-op base of 60,000 personnel, extensive R&D network, large material support.

NRECA's Approach to Rural Electrification Overseas

- Focus is on the long-term welfare of consumer constituency:
  - Assure appropriate electric service to meet the users' long-term development needs.
  - Sustainability through direct consumer-participation in decision making and post-construction management.
  - Stress on reliability, end-use efficiency, and customer service.
  - Initial focus on agricultural and economic development.

Rural Electric Supply Options

- Traditional rural electrification supply model -- grid extension from central-station plants using low-cost adaptations from REA standard design.
- Alternative approaches -
  - Solar home systems (SHS);
  - Distributed power off-grid;
  - Distributed power on-grid/wheeling.
- Flexible planning approach, integrating all options to achieve needs-driven optimization.

Exporting the REA Pattern: The Bangladeshi Example

- Program started in 1976 with much speculation on the chances for success.
- Today, over 50 electric cooperatives serving 2.6 million meters.
- 1,000 connections being added each day.
- 95%+ collection rate on billings.
- Government transferring bankrupt peri-urban systems to contiguous co-ops to improve performance.
- Current need: devastating power shortages; bidding out 11 MW distributed power projects to IPPs.

Exporting the REA Pattern: The Costa Rican Example

- Four electric cooperatives started in the 1960s built on the U.S. model, today serving some 100,000 customers.
- Full recovery of capital investment, have gone from 20% equity in 1970s to 85% in 2000.
- Created a separate consortium cooperative to arrange joint ventures and common services, starting with power investments.
- Beginning to diversify into other public services.
- Current needs: A common financing facility to access capital markets; stronger in-house professional skills.

CFC-Style Intermediaries

- Provide second-generation impetus for expanding electrification efforts already underway by aggregating the borrowing demand of small, rural-based utilities.
- Build on existing institutional strength of existing electric cooperatives (and other RE agencies).
- Utilize unique CFC technique for creating equity through term certificates.
- Complement lending and financial management role of gov't RE finance agencies.

Power Sector Restructuring and the Rural Electrification "Market"

- Restructuring creates fresh opportunity for rural electrification, in a new partnership between government, distribution utilities, and non-traditional players.
- The markets:
  - Expand existing utility systems into rural areas with cooperatives who buy power at wholesale.
  - New off-grid cooperatives with distributed power operating in parallel with central-grid distribution utilities.
  - Individual household systems with user associations.
- Not commercially feasible without some grant-in-aid-of-construction and/or some other form(s) of subsidy.

Toward an Electric Cooperative/ Rural Expansion Model: Step One

- Establish rural distribution zones that provide a critical mass in terms of scale economy.
- Form a cooperative structure in stages, with adequate institutional/technical support.
- Undertake investment to reduce losses and improve service quality.
- Deliver electricity to cooperatives at affordable cost.
- Establish permanent support and oversight capacity; consider non-traditional private mechanisms, e.g. NRECA models.

Rural Electrification Expansion: Step Two

- Undertake rural expansion in a transparent method of subsidy transfers.
- Raise modest initial capital from beneficiary groups (rural communities).
- Administrative system needed to administer donor funds (e.g. capital subsidy).
- A "virtual REA" - long-term revolving fund mechanism to assure capital replenishment.

Touchstone Principles for Rural Electric Service

- Solution needed for the non-urban distribution sector: electricity distribution/retailing drives the electric power utility economy and must be healthy.
- Sector reforms: Develop rural strategies as integral, parallel part of restructuring and privatization.
- Implementation: Rural communities and other consumer groupings can be organized to act in their own interest to obtain reliable electricity at a fair price.

Key Issues and Challenges

- Employ "bottom-up" approach in lieu of top-down.
- Change the business culture on the demand side:
  - Foster attitude of "giving value for receiving value."
  - Accelerate the economic impact of electricity usage.
- Arrange for reliable and affordable power supply.
- Establish transparency and sustainability in subsidy support.
- Engage adequate institutional and technical support on a sustainable long-term basis.