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FINAL REPORT

Technical Assistance to DOE for Enhancing Private Sector Participation in New and Renewable Energy Investments for Off-Grid Rural Electrification (TASK 1 – Refranchising Study)

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AN EVALUATION STUDY ON RE-FRANCHISING

I. INTRODUCTION

The operation of electric distribution utilities in the Philippines is governed by a Constitutional provision, which requires that, in order to operate, a person must first secure a franchise issued by Congress of the Philippines.

The government's desire to accelerate and achieve 100% electrification of all barangays by year 2004 has brought the franchising policy into focus. The entire country has been subdivided into electricity franchises (see Annex 1 – Electric Distribution Franchise Map). The achievement of the government's rural electrification target will therefore hinge on the ability of electric distribution franchisees to deliver the services they are obligated to do according to their franchise agreements. Most of the remaining unelectrified barangays are located in remote, thinly populated areas that are already difficult and more expensive to energize. For many of the remote areas, decentralized electrification using renewable energy may be the more cost-effective option.

From its inception up to the present, the rural electrification program has always been mainly dependent on government financing. However, given the scarcity of government funding, participation of the private sector in rural electrification is now considered essential. For this reason, DOE's Accelerated Barangay Electrification Program (ABEP), now known as "O Ilaw" Program has specified the need to *"encourage greater private sector participation in rural electrification activities".*

To attract private sector investments into rural electrification, it is necessary that they be allowed some playing space in the currently filled-up rural electrification arena.

Objective of the Study

The objective of this study is to:

1. Review and evaluate the Philippine electricity distribution franchising law in relation to the DOE's "market packaging" paradigm for off-grid electrification

2. Research, evaluate and analyze the economic and technical soundness of re-franchising, both in theory and practice; and

3. Formulate recommendations and draft DOE Policy directive regarding re-franchising in the Philippines

Scope and Limitation of the Study

This study basically focuses on the existing franchise areas of the ECs, considering that a) the ECs are the primary implementors of the rural electrification program; b) majority of the off-grid concerns are located within their franchise areas; and c) the market packages identified under Task #3 of the Technical Assistance to DOE for Enhancing Private Sector Participation in Renewable Energy Investments for Off-grid Electrification, are also within the EC franchises.

The study shall include a review of the franchising law and how this is being implemented. It shall identify and analyze issues and concerns relative to the effectiveness of franchisees in undertaking their rural electrification privileges and evaluate the economic and technical viability of continued grid connection in order to determine the validity of the re-franchising concept. From the results of the review and evaluation, recommendations an appropriate instrument (Department Circular) would be drafted for carrying out the recommended policy direction. (see Annex 7)

The scope of the study is essentially limited by the timeframe available to conduct the necessary research and evaluation of the conditions of the franchises of the ECs. In this regard, the study will be limited to the use of available data from the ECs as submitted to NEA. The study will focus on evaluating the capability of the ECs to further expand their services while maintaining overall operational viability. This will essentially show whether or not maintaining the current franchises would allow government to meet its desired rural electrification targets. Because of limited time, the study will not be able to do sufficient sampling of ECs but will instead use sample cases to illustrate the viability of expansion projects by current

franchisees as basis for determining whether or not re-franchising is a better option.

II. REVIEW OF RELEVANT LAWS AND FRANCHISING PRACTICES IN THE ELECTRICITY DISTRIBUTION SECTOR

A. Constitutional Basis

The authority to issue franchises to public utilities is vested in Congress by the Constitution of the Republic of the Philippines. Article XII Section 11 of the Constitution on the "National Economy and Patrimony" states:

> "Sec. 11. No franchise, certificate of any other form of authorization for the operation of a public utility shall be granted except to citizens of the Philippines or to corporations or associations organized under the laws of the Philippines at least sixty per centum of whose capital is owned by such citizens, nor shall such franchise, certificate, or authorization be exclusive in character or for a longer period than fifty years. Neither shall any such franchise or right be granted except under the condition that it shall be subject to amendment, alteration, or repeal by the Congress when the common good so requires. The State shall encourage equity participation in public utilities by the general public. The participation of foreign investors in the governing body of any public utility enterprise shall be limited to their proportionate share in its capital and all the executive and managing officers of such corporation or association must be citizens of the Philippines."

The above quoted section of the 1987 Constitution is a reproduction, almost verbatim, of the provisions of Section 5, Article XIV of the 1973 Constitution, with an additional proviso imposed upon the participation of foreign investors in the governing body of any public utility enterprise, that is, "all executive and managing officers of such corporation or association must be citizens of the Philippines."

B. Franchise Powers Delegated to NEA

In 1973, the franchising authority of Congress was delegated to the National Electrification Administration (NEA) by virtue of Presidential Decree (P.D.) 269. Such delegation of authority granted to NEA all the powers to grant, repeal, alter or amend franchises, whether new or

existing. This effectively amended and also transferred to NEA the franchising authority formerly enjoyed by Local Government Units (LGUs).

The term "franchise" is defined to mean "the privilege extended to a person to operate an electric system for service to the public at retail within a described geographical area, whether such privilege had been granted by the Congress, by the municipal, city or provincial government or, herein provided, by the NEA".[1]

Section 43 of P.D. 269 reads:

> " Section 43. Franchising Powers Delegated to the NEA. The power hereafter to grant and thereafter to repeal, alter or amend new franchises, to repeal, alter or amend all franchises heretofore granted by the Congress (or by the President, or by the National Assembly after it comes into existence), and to repeal, alter or amend all franchises heretofore granted by any municipal, city or provincial government, is hereby delegated to the NEA, whose Board of Administrators shall, acting as a Commission, administer the provisions of this Chapter. Provisions of Republic Act 2677 to the contrary notwithstanding, no municipality shall hereafter initiate the operation or after December 31, 1973, continue any operation heretofore initiated, of any service for sale at retail unless it shall first obtain a franchise from the NEA in accordance with the provisions of this Chapter. In exercising the powers herein delegated, the NEA shall at all times seek to serve the National objective of the most rapid total electrification of the Philippines on an area coverage basis. Without limiting the generality of the foregoing sentence, the NEA is hereby authorized, empowered and directed: (underscoring supplied)
>
> a) Within one hundred eighty days after the effective date of this Chapter (and periodically thereafter, at least once annually) to notify and require every person holding a franchise to report to it, within not less than ninety days after such notice, an accurate description of the geographical area encompassed in such franchise, the number of households therein receiving services which is not adequate and dependable, the number and type of other retail customers therein receiving adequate and

[1] P.D. 269 Section 3. Definitions

dependable service or service which is not adequate and dependable, the approximate total numbers of households therein the date such franchise was granted and such other information and date as the NEA for the purpose of implementing this section may require and, on the basis of such reports and otherwise, including complaints:

(1) to review such franchises to determine whether the holders thereof are furnishing services on an area coverage basis or are engaged in effective measures to furnish such service within a reasonable time;

(2) to repeal and cancel any franchise if the NEA finds that the holder thereof is not then furnishing, and is unable or unwilling within a reasonable time to furnish, adequate and dependable service on an area coverage basis within such area; and

(3) to alter and condition such or other existing franchises and to issue new franchises to the end of assuring area coverage service throughout the Nation as in this Decree contemplated; Provided, that no franchise shall be altered, conditioned, repealed or cancelled, and no franchise shall be granted, without first affording the holder thereof, or the contending applicants therefor, if such be the case, and any other interested parties opportunity for hearing; and

(b) Upon determining, after affording opportunity for hearing to all interested parties, that such is necessary or appropriate to assure of expedite the furnishing of service on an area coverage basis; to require any public service entity to interconnect its generation transmission or distribution facilities with and through such interconnection to exchange, sell or purchase power and energy with, to or from or to transmit power and energy on behalf of, any other public service entity or, if it so requires or consents, the NPC; and, if such public service entities (and, if such be the case, the NPC) are unable between or among themselves to agree upon such, to establish the manner and degree to fix and apportion

> the financial responsibility and sharing of costs, and to determine the other terms and conditions of such interconnection, exchange, sale, purchase or transmission; Provided, however, that the provisions of Section 45 to the contrary notwithstanding, the provisions of this paragraph shall apply to industrial plants, factories, mills, mines, and similar or generating entities in which case they shall quality as public entities for purposes of Section 4 (f).

Further, Section 45 provides:

> Section 45. Furnishing Service Without a Franchise Prohibited. – No person shall furnish or extend service to the public within an area for which person has not been granted a franchise or after such franchise has been repealed and cancelled or so conditioned or altered as to prohibit service therein; Provided , that such service may be continued and extended herein, and the NEA after affording opportunity for hearing to any interested party, may by order require that it be so continued and extended, until service to the customers of such person is made available by a public service entity lawfully authorized to service therein.

C. Franchising as Practiced

By the authority delegated upon it through P.D. 269, the NEA has been issuing and amending franchises of both electric cooperatives and private utilities since 1973. As practiced, temporary franchises are first given to ECs upon its organization, or to a would-be private operator, upon filing of his application for a franchise. The NEA later, upon conduct of public hearings, converts these into permanent franchises. The NEA Board, acting as a Commission, per P.D. 269 conducts the hearings (through their hearing officers) and issues the Certificate of Franchise. The franchises are granted for a period of 50 years, renewable. (see annex 2 for a sample of Certificate of Franchise)

Area Coverage Concept

In implementing the franchising law, the NEA pursues the area coverage concept, as provided for in P.D. 269. According to the definition, “Area Coverage” shall mean dependable and adequate service that, on the basis of reasonable and standard extension and service policies, rates,

charges and other terms and conditions, will be or is being made available to all persons within the affected area as above defined (meaning, geographic areas franchised) or of their proximity to existing and proposed service facilities: Provided that the financial feasibility of the public service entity's operation is not thereby impaired.[2] (quotation marks, parenthesis and underscoring supplied) Under the area coverage paradigm, the electric utilities are therefore expected to service "more thinly settled areas and therefore more costly to electrify" using their earnings from densely populated or urban core. "*Accordingly, every public utility should thereafter cooperate in a national program of electrification on an area coverage basis, or else surrender its franchise in favor of those public service entities which will."* [3] *(*italics supplied*)*

Performance of Franchises vs. Area Coverage Obligation

The entire country is cut up into 138 electric distribution franchises. These franchises are held by 119 Electric Cooperatives (ECs), 16 Private Investor Owned Utilities (PIOUs) and 3 municipal systems. The Rural Electrification Program is implemented through the ECs, which are given priority over other systems under P.D. 269. In the early years, the EC franchises were carved out based on: a) territorial coverage, b) customer base, c) the level of economic activity, and d) population density. However, it has been observed that as government tried to pursue in earnest the area coverage concept in rural electrification, the general criteria was set aside, as pressures from socio-political interests set in. When rural electrification extended to small islands, new ECs were established even if economic conditions and size were not ideal for sustainable operations. [4]

Thirty years hence, the attainment of 100% rural electrification remains to be as challenging as ever. Although all the municipalities are already energized, a significant number of franchise holders are not able to serve all the barangays in their area coverage. And even in areas where all barangays are reportedly served, a number of smaller populations clusters or sitios are left unserved.[5] This condition exists not only in the EC

[2] P.D. 269, Section 3. Definitions

[3] P.D. 269, Section 2. Declaration of Policy

[4] For example, Cagayan de Sulu Electric Cooperative (ASELCO), which has been in operation for 6 years, has connected only 713 consumers, as of 2000 or 20% of potential. It was given a loan of P 5.4 million by NEA and has since accummulated arrears of 32 quarters or loan amortization due of P32.07 Million. CASELCO is a category E cooperative and its average system rate is P5.94/kwh.

[5] By NEA definition, a barangay with at least 10 household connections is considered energized.

franchises but also in areas covered by PIOUs.[6] As of end 2000, some 8,127 barangays[7] are still in the dark, so to speak, due to the inability of electricity franchise holders to service their coverage areas. The people in these areas either rely on the use of kerosene for lighting or are served by local entrepreneurs who invest in small diesel power generating sets and operate for only 4 hours per day. For these communities, the price of low quality energy is very high.[8]

The continuing challenge of rural electrification indicates that franchises are not able to keep up with the requirements of "total electrification on an area coverage basis". While NEA has been regularly monitoring the status of energization in each franchise, the strict adherence to the conditionality of area coverage within the franchise was never observed. To date, there is no record of any franchisee penalized nor any franchise ever been withdrawn, except by voluntary transfer to another by the franchise holder himself or in one instance where the EC dissolved itself and its franchise was transferred to an entity organized and created in its stead. This may be attributed to the dual role that NEA plays in the sector, i.e, as financier and regulator of the ECs at the same time. Since government has not been able to fully provide funds for the sector, NEA is not in a position to require strict adherence from the ECs to expand. Supposedly, under NEC Policy No. 501, the target for total electrification by each of the franchise has been set for 1990. (see Annex 3) This policy obviously was not carried out. The current status of electrification per EC would show the extent by which the franchises are logging behind in their area coverage electrification mandate. Of the 119 ECs, only 15 or 12.6% have reported 100% electrification of barangays and none has reported 100% connection of potential consumers. There are still 75 ECs or 63% of total that are below 90% in their barangay electrification level. (see Table 1 and Annex 4). With this current status, it is most unlikely that the government would be able to attain its ambitious 100% target by 2004, unless the ECs can drastically improve on their performance between now and year 2004 or some new strategies are developed to accelerate the rural electrification process.

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[6] Based on private discussions with some PIOUs; PEI has received requests from PIOUs to assist them in developing decentralized energy systems for their unserved areas.

[7] NEA Statistical Report

[8] As per Market Assessment Report prepared by Madecor Environmental Management Systems, Inc., households pay an average P147.50 (a high of P242.28) for energy consumption alone, or about 6.5% of the total household expenditure in a month. Compared with the grid where monthly expenditure for electricity is P136.19, it is obvious that the *people in the unserved areas pay a much higher price for their energy compared to those on the grid.*

Table 1
Performance by EC Franchises
2000

Level of Barangay Electrification	No. of ECs	% of ECs
100%	15	12.6
90-99%	29	24.4
80-89%	32	26.8
70-79%	14	11.8
60-69%	10	8.4
50-59%	9	7.6
Below 50%	10	8.4
TOTAL	119	100%

NEA Power to Review and Amend Franchises

By virtue of its delegated powers under P.D. 269, the NEA after review and due evaluation, may "repeal and cancel any franchise", "alter and condition such or other existing franchise and to issue new franchises to the end of assuring area coverage throughout the nation…". In this respect, it is therefore clear that with valid reason, NEA has within its powers the authority to revise or modify current franchises if such is found necessary to accelerate countryside electrification.

The passage of RA 9136 otherwise known as, the Electric Power Industry Reform Act of 2001 (EPIRA), the environment changes somewhat. There are three relevant sections in the law that affect the franchises. These are Sections 23, 27 and 59. Under Section 27, the powers to issue franchises will revert back to the Philippine Congress. However, all existing franchises shall be allowed to their full term. In the case of the ECs, renewals and cancellations shall remain with NEA for 5 more years after the enactment of the bill into law. There will be a need to clarify this provision in the IRR to include also *revision or modification of EC franchises* by NEA during the 5-year moratorium period. Nevertheless, Section 23 of the EPIRA also provides that "areas which a franchised distribution utility cannot or does not find viable may be transferred to another distribution utility, if any is available, who will provide the service, subject to approval of ERC. In cases where franchise holders fail and/or refuse to service any areas within their franchise territory and allowed another utility to service the same then the status quo remains".

Hence in the context of the "market packaging" paradigm for off-grid electrification, there is therefore no legal hindrance to the possibility of re-franchising in order to open otherwise monopolized areas to entry of new service providers, particularly in the identified "market packages". Such

refranchising can be done by the powers of NEA within the next 5 years (if clarified in IRR to include modification) or under Section 23 of the EPIRA. In the case of Section 23, however, the franchise will remain with the EC and it will only "allow" another utility to service its franchise. In which case, the temporary waiver of franchise will have to be exercised. It must be pointed out also, that by virtue of Section 23, transfer of franchise is limited among and between *utilities only*. If it is not possible to expand this to include "other service providers" in the IRR, the entry of other players as desired under Section 59 of the same law will be constrained by the need to obtain franchise from Congress.

III. EVALUATION OF RE-FRANCHISING

A. Why consider Re-franchising ?

The idea of re-franchising or modifying the existing franchises evolved from the general observation that current franchises have been unsuccessful in abiding with their obligation to deliver electricity services to all areas within their franchise. As rural electrification focus shifts to the off-grid areas, the concern is that the remaining areas are geographically distant, with dispersed population and low energy consumption patterns. These market characteristics do not give the franchise holder the right mix to economically or financially justify the extension of the grid, especially considering that cost of line extension has increased tremendously over the years. [9] Hence, outside of government subsidized efforts, expansion of services by electric utilities have slowed down.

For social and economic consideration, it is imperative that electricity services must be delivered to these areas despite government's financial difficulties. To fill the gap, re-franchising, is considered a step towards allowing more players to move into the rural electrification sector. By so doing, additional investments, innovative delivery mechanisms and new approaches may be put in place.

B. Is Modification of Franchises Justified?

The apparent difficulty in achieving the desired results of the area coverage policy of rural electrification stems from many factors and underlying issues facing the electric distribution franchises. The confluence of policy issues, prevailing market conditions as well as social and political considerations, are contributory to the present state and performance of these franchises.

[9] Average cost per kilometer of line is P468, 000.

These interrelated/interlocking issues are discussed in the following key observations that justify the need to modify the Utility Franchises:

- ***The territorial delineations of franchises are no longer optimal for grid extension to unserved areas.***

Over the last thirty years, there have been significant differences in the growth and pace of development, among the municipalities within the coverage areas. These developments have affected the economics underlying the distribution networks. In some instances, geographical conditions, largely brought about by the road network access, make it more economical to extend distribution lines to target areas from the neighboring franchise rather than from the grid of the franchise holder. This is evidenced by the number of cross-border arrangements being implemented among ECs just so they can accommodate requests for services, particularly those coming from politicians.

An example of such arrangement is that of Surigao del Sur I Electric Cooperative (SURSECO I) and Surigao II Electric Cooperative (SURSECO II) wherein San Agustin town, under the area coverage of SURSECO II is being energized and served with power coming from SURSECO I by internal arrangement. Such internal arrangement proved to be detrimental to both parties. SURSECO II was unable to pay its obligation to SURSECO I "due to high system losses and other technical problems on the lines", such that, SURSECO I ended up subsidizing the operation at San Agustin. Because of this circumstance, SURSECO II was forced to temporarily waive its franchise over San Agustin to SURSECO I. However, such waiver is also creating complications because according to their agreement, SURSECO I shall cover all administrative expenditures on the lines but all other costs incurred, other than purely administrative in nature, would still be for the account of SURSECO II. Moreover, any capital expenditure introduced by SURSECO I shall be for the account of SURSECO II.[10] This case is just one example of the many similar cases existing and monitored by the NEC. Other similar cases include that of a waiver by a PIOU of some of its area coverage to an EC because of proximity to the area to be energized (as in the case of Dagupan Electric Corporation and La Union Electric Cooperative) and waiver of franchise for 25 years by Bukidnon II Electric Cooperative (BUSECO) in favor of Misamis Oriental I Electric Cooperative (MORESCO) to energize the municipality of Talakag and 17 of its barangays due to the inability of BUSECO to service this part of its

[10] Contract on Temporary Waiver of Franchise signed by and between SURSECO I and SURSECO II signed in 1987.

franchise.[11] All these cases obviously point to the fact that the territorial delineations of the franchise areas are no longer optimal.

- ***A number of EC franchises are no longer capable of taking on the burden of "missionary electrification".***

By virtue of the area coverage approach, ECs are expected to engage in "missionary electrification" meaning, to energize all areas within their franchise including those that are not viable or considered "missionary electrification areas". The two-pronged but inherently divergent objectives of operational viability and missionary electrification have resulted in chronic inefficiency and instability in the operations of a number of ECs. There are many other factors, which have contributed to this condition. Foremost of these are: a) limited capitalization, b) depressed tariff levels, c) franchise handicaps, d) over-extended systems, e) politicized decision-making, and d) poor management, among others.

A number of the above factors are interrelated and their impact on the ECs are described below:

From day one, the ECs have been dependent on the government for financing. The ECs were originally organized by NEA and registered as ECs under the NEA charter. Upon organization, the ECs were provided loans to build their distribution systems. They are allowed to charge fees but these tariffs are regulated using a "cashflow" formula that did not allow for profit margins to be accumulated so that the ECs can self-finance the expansion or rehabilitation of their systems. The original tariff formula adopted in the '70s did not include margins because of the general notion that since ECs are non-profit organizations, then they should not be allowed to generate surplus from operations. This concept however confuses margins (retained earnings for self-financing) with the notion of non-retained profits (dividends). It was only in 1990 when the formula was revised to include 5% of total revenue as allowance for re-investment. But even with this change, the 5% allowance proved to be sufficient for large, urbanized ECs but inadequate for rural ECs with low mWh sales. Consequently, the ECs have remained totally dependent on NEA for financing both their expansion and rehabilitation programs.

The market within which the ECs operate are handicapped compared to its more urban PIOU counterpart. Even while ECs service 90% of municipalities, 85% of barangays and 52% of house connections, EC sales comprise only 20% of total power sales in the country. Ninety (90%) percent of EC connections are residential, averaging only 65 kWh per month in energy consumption. Moreover the density of population in EC

[11] MOA between BUSECO and MORESCO, signed Feb. 13, 2001

coverage area averages only 39 connections per kilometer of line. [12] Given these market characteristics compounded by the rising cost of line expansion, most EC franchises find themselves in no position to cross-subsidize their "missionary" areas with earnings from their urban core as conceived under the "area coverage" concept. Since 1990, some P3.577 Billion in government subsidies for expansion of lines to unviable areas have been allocated to the ECs. However, beyond these capital subsidies, the ECs are left to deal with the increasing expenses for operations, maintenance and replacement of system due to line deterioration or even destruction due to calamity. Because capital expenditures using subsidies are not included for recovery under the "cashflow" tariff formula, the ECs' finances suffer in the long run. It is not uncommon therefore to hear of some ECs refusing to accept subsidies from NEA in order to preserve the financial integrity of their operations.

Nevertheless, due to the socio-political nature of their program, ECs are often bound to sway to the pressure of political leaders in their franchise. Often, they are forced to implement projects beyond their carrying capacity to the detriment of the entire operation. This causes the over-extension of their lines beyond the technical capacity of the network resulting in high system losses and low voltages at the end of the line. Promises of rate reduction are also often heard of many political leaders and the ECs are forced to comply[13]. Such politicized decision-making contributes to the technical inefficiencies and financial non-viability of the ECs. This poor financial condition is reflected, in recent years, in the collection efficiency performance of NEA, which has declined from 94% in 1997 to only 84% in 2000.

The broad-based ownership of the ECs is looked upon as the vehicle for member-control of the ECs. It is not unusual to see in many of the ECs the declaration "owned by the members it serves". However, because of the minimal contribution required (P 5.00) to gain membership in the EC, there is very minimal interest among members to participate in the actual management of the organization. Moreover, members often view themselves more as consumers rather than owners of the ECs. This perception results in an apparent lack of member interest and therefore low consumer awareness of the affairs of the ECs, which consequently renders the organization open to manipulations. Officials and management are thus exposed to temptations to abuse their prerogatives as may be manifested in the hiring of unnecessary or unqualified employees, non-collection of accounts of select consumers or purchases

[12] Statistical Data from NEA - MIS Division, Planning Department

[13] In 1988, then Pres. Corazon C. Aquino announced that island ECs shall not charge any rate higher than P2.50. For many years, the ECs were forced to peg their tariff lower than their actual costs.

from favored suppliers. Even with the oversight by NEA, under-performing managers and Boards are observed to have low risk of losing their jobs. In case of a NEA take-over, the EC Board or management may lose face but they are usually retained, while a NEA management team takes-over the daily operations of the EC.

- ***The grid expansion paradigm is no longer cost-effective. Over-extension of lines results in more inefficiency and unviability for the ECs.***

The Philippine rural electrification program follows the conventional approach through expansion of the grid. As the service areas become more remote and population densities in these areas thin, the extensions of lines from the central grid have become more and more unviable for electric utilities. Currently the cost of extending one kilometer of line averages P 468,000 ($9,364). To connect remote barangays of over 10 kilometers from the tapping point would be very prohibitive for the EC, especially if there are only about 10-20 households per kilometer of line. In order to save on capital costs, ECs usually settle for single-phase lines rather than a 3-phased line to connect distant barangays. Although this saves on initial cost, the subsequent result is that such line extension ultimately impacts on the technical performance of the network, particularly, in high system losses as well as low or fluctuating voltage along the lines. A case study on Cagayan I Electric Cooperative (CAGELCO I) below clearly illustrates this issue (see box below)[14]. The high system losses incurred due to over-extension of lines to connect remote areas affect the entire network, the burden of which, will have to be shouldered by all the consumers of the EC. As of 2000, over half of the ECs (59%) are still over the prescribed 14% system loss cap set under the Anti-Pilferage Law.

[14] Special Study done by Engr. Thomas Villaflor, Head, AM/FM Group at NEA

Case Study
Impact Of Line Expansion To System Loss
Cagayan I Electric Cooperative (CAGELCO I)
(see also Annex 5)

CAGELCO I power requirement is provided for by 3 Substations as follows; a 10 MVA Substation located at the Headquarters compound in Solana, a 15 MVA NPC owned Substation located in Tuguegarao, and a 5 MVA located in Alcala.

This study involves the municipality of Sto Niño located in the northern part of CAGELCO I coverage area and served by the 10 MVA Substation at Solana, about 40 kms. away.

The distribution line that serves Sto Niño is being shared by four other municipalities under the coverage of CAGELCO I namely Solana, Tuao, Piat and Rizal (the farthest). This feeder line also serve a portion of KAELCO coverage due to its accessibility to CAGELCO I. This feeder line presently draws about 3.6 MVA, a figure technically considered excessive for a standard feeder line, and contributes a primary line loss of 10.5%. Standard primary line loss of a typical feeder is estimated at about 1.5% to 2%, therefore, the current loss level is not only very alarming, but requires drastic solutions that will reduce this line loss to acceptable level. This line also suffers a very low service voltage of about 182 Volts, at some of the line sections near the end of the feeder.

Sto. Niño is being served by an overextended single-phased primary line. Energizing the whole coverage of the town will require upgrading of the source side of this line to three-phased or vee-phased line, so that load balancing can be implemented downstream. However, for simulation purposes, this option was not considered and the unenergized barangays were assumed to be installed with a single-phased primary extension, which is the usual practice. The impact on the line losses to CAGELCO was evaluated using an engineering analysis model incorporated in the Automated Mapping and Facilities Management (AM/FM) software that the EC recently acquired.

A run of the engineering analysis software considering the energization of all barangays of Sto. Niño showed that the line losses of the EC on this particular feeder shall further increase to 11.3% or an equivalent of (P459,900.00) revenue loss yearly. Meanwhile, if the town was to be separated from the feeder line, the simulation showed a reduction in line losses to about 9.4% or a recovery of about P 696,420.00 yearly savings.

To further demonstrate the effect of connecting Sto. Niño to this feeder line, the model was subjected to a growth rate of 25% and 50% more load. This simulation represents the status of this line in the next 5 to 10 years of operation. The study yielded a line loss of 14.6% and 18.1% respectively. These line loss figures translate into a yearly revenue loss equivalent to (P3,416,400.00) and (P7,135,020.00) respectively.

Several options were considered in order to correct this problem, the most appropriate however, will require CAGELCO I to construct a new Substation at the vicinity of Piat, and a 30 Km. 69kV transmission line from Solana. This will entail around P 45M of investment for the EC.

Recognizing the unviability of continued grid extension, and in order to cut On line losses, some ECs have submitted plans to implement decentralized new and renewable energy (NRE) systems. Results of the Market Assessment survey conducted for DOE showed that 34% of households in the off-grid are potential to be energized through NREs[15]. These will have to be covered through investments in either isolated mini-

[15] Per Market Assessment Study prepared by MADECOR Environmental Management Systems, Inc.

and micro grids or in solar home systems. However, it is obvious that the ECs are only looking at PV system as their inferior alternative.[16] While a number have actually started utilizing PV systems, the implementation of PV electrification however leaves much to be desired. In almost all cases, the ECs would only install 10 units or a battery charging station good for 10 households in a barangay so that it can report the barangay as energized.[17]

Moreover, because of their experience and focus on on-grid operation the ECs are not geared nor experienced in providing such decentralized electricity services. Hence, other more appropriate players have to be brought in. This again justifies the need to open up the unserved portions of the previously monopolized franchises to other players.

- ***The introduction of supply competition in the distribution grids will compel ECs to concentrate on their grid connected operations in order to remain competitive.***

The open access[18] provision under the proposed Electric Power Industry Reform Act (EPIRA) will introduce free market access to power suppliers into what was before the monopoly market of the ECs, their franchise areas. Under the EPIRA, 3rd party suppliers will be allowed to compete with the EC for the larger customers within the franchise, subject to the payment of wheeling charges for the use of transmission and/or distribution lines. Therefore, unless ECs are able to improve operating efficiencies and offer competitive prices, they will see the erosion of their market base. The 1999 Navigant Consulting Report points out correctly: "In a restructured environment a clear delineation must be made between the conduct of missionary electrification (subsidized by the national government) and the provision of competitive electric service. ECs do not have a sole mission to conduct missionary electrification. They will have, in the restructured sector, a dual mission – to provide competitive electric service and to conduct missionary electrification." In the light of this new development, the ECs are of the mind to concentrate on improving their competitiveness. Due to the open access provision, the ECs perceive their franchise to be defined by the wires. Thus, they do not feel obliged

[16] Given the choice the ECs would always want to extend their lines. This is evidenced by the small number of ECs that have incorporated NRE applications in their electrification plans submitted to NEA.

[17] NEA allocates only 10 SHS per barangay. A barangay with 10 household served is considered an energized barangay.

[18] "Open Access" in the latest version of the Omnibus Bill means "allowing any qualified user the use of the transmission and/or distribution system and associated facilities, subject to the payment of transmission and/or distribution wheeling rates duly approved by the ERC.

to undertake missionary electrification in the new competitive environment. However, this is not the case. The EPIRA does not supercede the franchising provision in P.D. 269, in that, the law still defines the franchise area as the "geographic boundaries" and the area coverage concept remains in principle as the policy for implementing these franchises.

- ***The continued pursuit of the area coverage concept within the current franchises fosters continuing dependence on government for financing.***

Knowing well the unviability of the remaining unserved areas, most ECs have settled to just simply waiting for government to provide subsidies before considering expansion to unserved areas.[19] Hence, government funding has become the driver for line expansion rather than the ECs capability to cross-subsidize expansion using its profits from its urban core. Basically, this defeats the purpose of the "area coverage concept" but at the same time, it is consistent because even P.D. 269 specifies that area coverage should be pursued "Provided that, the financial feasibility of the public service entity's entire operation is not thereby impaired."[20] This situation fosters a continuing dependence by the franchise holders on subsidies, which the government can no longer afford to provide. Without such substantial subsidies, the expansion of services to unserved areas will be restricted. Further, the reliance on full subsidy from government leads to unsustainable operation and runs contrary to the government's goal of sustainable development.

- ***The emergence of independent micro-grid operators in remote, isolated areas justifies the need to re-delineate the franchise boundaries to recognize these enterprises and put them in the mainstream of rural electrification.***

The inability of the franchise holders to fulfill their franchise obligations has resulted in the emergence of unregistered electricity service providers in many areas, especially those located in far-flung upland or coastal barangays, despite the legal provisions of the franchise law.[21] A number of these operators, particularly those that are diesel-based, often charge high fees for low quality (low voltage), intermittent and limited services (4-

[19] Loan applications by ECs submitted to NEA are mainly for rehabilitation and upgrading. Remaining unserved areas are submitted for subsidies.

[20] P.D. 269, Section 3 (h)

[21] Results of DOE's Rapid Rural Assessment done in 1999 showed that 90 of the barangays surveyed are already served by private diesel operators; the number of community-based energy projects continue to grow in the Cordillera Region, Visayas and Mindanao: examples are those set-up by PEI/SIBAT, CPU-ANEC, Yamog, etc.

6 hrs. and for diesel operators, whenever diesel is available). Nevertheless, because they are the only choice the people have, households are forced to accept such services in order to gain access to energy services. This shows that despite the common perception that people in rural areas have low capacity to pay, but the reality is, people in the rural areas are willing to pay higher for something they need. By re-defining the franchises and recognizing these operators, government would be able to monitor their activities, and thereby protect the consuming public. Likewise, with some assistance, these local entrepreneurs may, in fact, become useful and more active players in rural development.

C. Analysis of Franchise Capability to Further Expand to Unserved Areas: Some Case Examples

According to P.D. 269, repeal, cancellation, amendment, alteration of the existing franchises may be done only if NEA finds that the franchise holder is not furnishing, is unable or unwilling within a reasonable time to furnish adequate and dependable service within its franchise. In order to determine therefore the validity of re-franchising, it is necessary to, first of all, evaluate the capacity of the existing franchise holders to extend such service as prescribed in their franchise agreements.

For this study, it was not possible to evaluate all the ECs that up to this period have not complied with the mandate to serve all areas within its franchise. To illustrate however, an evaluation of 4 ECs franchises to find out the applicability and validity of the need for re-franchising was conducted. The 4 ECs selected for this exercise are: Nueva Viscaya Electric Cooperative (NUVELCO) in Region II, Northern Luzon; Masbate Electric Cooperative (MASELCO) in Region IV, Southern Luzon; Northern Samar Electric Cooperative (NORSAMELCO) in Region VIII, Eastern Visayas and Davao del Sur Electric Cooperative (DASURECO) in Region XI, Mindanao.[22] The objective is to find out whether further expansion by the ECs to serve its entire area coverage would be feasible from the point of view of its entire network.

In this exercise, the existing NEA REC Investment Analysis (RIA) Model[23] was used to evaluate the feasibility of projects submitted by the ECs. The

[22] The ECs were selected on the basis of the large number of their unserved areas in Luzon, Visayas and Mindanao. Except for Dasureco, the other ECs were included in the long-list of ECs with potential market packages.

[23] The NEA RIA Model was prepared in 1991 by de Lucia and Associates under contract with USAID. The model calculates the NPV and IRR over a 25-year planning horizon to approximate the life of the electrical

use of this model was deemed practical since this is the evaluation process that NEA is familiar with and one that is already acceptable to the ECs.

As structured the model evaluates the future investment plans of the EC to determine which of the ECs' proposed projects can be pursued within certain set viability parameters. The discount rate is the primary parameter used in the analysis. (see Manual on NEA Rural Electric Cooperatives Investment Analysis Model for details on how the economic analysis is done). The economic and financial discount rates are based on NEDA and NEA set parameters as follows:

- Economic IRR of 15% as set by NEDA
- Financial IRR of 12% set by NEA

The model defines the projects into:[24]

a) rehabilitation/up-grading
b) line expansion
c) support facilities

The model is basically grid-based. However, using the model, the EC/NEA can determine the viability of an expansion project from the standpoint of the grid and assess whether this is to be pursued independently or in conjunction with all other projects.

Sample ECs: Profile and Planned Development

The profile of the ECs and their planned expansion projects (2001-2004) are presented in the tables 1 and 2 below: (see also Annex 6)

equipment. It permits parameter inputs for the first 10 years of the planning horizon. For add-ons and expansion projects, the methodology for estimating WTP by consumers is based on (1) the revealed WTP from the substitution of electricity for on-going or pre-existing activities and (2) the consumer surplus associated with the use of electricity for new activities.

[24] Model is limited to evaluation of on-grid projects. In future, NEA has to update and expand this to include off-grid technology choices.

Table 1
Selected Data on EC Operation
As of 2000

COOP/RELEVANT STATS	NUVELCO	MASELCO	NORSAMELCO	DASURECO
Membership Size	44714	21256		55056
Status of Barangay Electrification (%)	68	32	44	64
Connection per Consumers type (%):				
- Residential	90	91.1	92.3	80.8
- Commercial	4	5.75	5.1	8.2
- Industrial	1	0.75	0.02	0.5
- Others (St. lights, P.Bldg)	5	2.4	2.4	10.5
Ave. Consumption/month per consumer type:				
- Residential	65	84.6	62.3	73.5
- Commercial	202	389	221	376
- Industrial	1395	1554.9	2125	8081
- Others (St. lights, P.Bldg)	168	267	406	75
System Loss (%)	19.74	22.58	15.16	9.65
Load Factor	55	51	49	51
Collection Eff. (%)	88	92	92	99
Conn/employee	217	91	182	207
Ave. System Rate	5.19	4.35	5.14	3.22
Gross Revenue	219634	102521	107119	302240
Operating Margin	2419	-3286	2143	27476
Net Margin/Loss	832	-18132	-2970	6575
EC Category	B	D	E	A+

Table 2
Planned Expansion Projects by ECs
2001-2004

EC	Length of Line (kms)						New Connections		
	3-ph	2-ph	1-ph	O.S.	U.B.	PV	HH	Com	Others
1. NUVELCO			139.93	18.66	72.73	320	728	17	35
2. MASELCO	45.62		777.42	87.82	148.76		5529	14	20
3. NORSAMELCO	20.5	46	728.1	46.9	121		9160	183	441
4. DASURECO*			142	23.8	81.7	880	5623	262	204

* Expansion Plan up to 2006

Based on the computer runs of the investment analysis model the results were not promising. All the ECs registered negative EIRR and FIRR for their expansion projects. Only the rehabilitation projects registered positive results, however, the gains in the rehabilitation of lines are not sufficient to subsidize the expansion projects. (see tables 3 -5 below)

Table 3

Evaluation Results: Expansion Projects

EC	Economic NPV	IRR	Financial NPV	IRR
1. NUVELCO	-9084	0%	-123505	0%
2. MASELCO	-524168	0%	-710711	0%
3. NORSAMELCO	-345501	0%	-551627	0%
4. DASURECO*	-214110	0%	-239891	0%

*Planned projects up to 2006

Table 4

Evaluation Results: Rehabilitation Projects*

EC	Economic NPV	IRR	Financial NPV	IRR
1. NUVELCO	27487	18.7%	-51763	0.7%
2. MASELCO	118379	159.3%	26765	39.2%
3. NORSAMELCO**				
4. DASURECO	78490	128.9%	-14868	0%

*Planning period 2001-2006

** No rehabilitation plan submitted

Table 5

Evaluation Results: All Projects

EC	Economic NPV	IRR	Financial NPV	IRR
1. NUVELCO	-817132	0%	-983174	0
2. MASELCO	-574342	0%	-800349	0
3. NORSAMELCO	-793502	0%	-739702	0
4. DASURECO*	-773050	0%	-769165	0

*Planning period 2001-2006

The results of the investment analysis show that the costs of extending the lines by the ECs are so much more than the economic benefit to the consumers. This is the outcome of a much higher incremental increase in the costs of line materials and electricity supply compared to the incremental increase in the cost of kerosene/replacements and the depressed tariff rates that the ECs are allowed to charge. Considering this situation, it appears that not one of the ECs evaluated would be able to absorb the costs of expanding its lines to service its entire coverage area, otherwise their entire network will suffer. This condition is very much evident in the case of NORSAMELCO which for years has been experiencing financial difficulties due to indiscriminate expansion of lines. An examination of the financial picture of the EC shows that over the last 6 years, it has been suffering net losses on its operations. As of June 2000, the EC

accumulated substantial arrearages with NEA of 59.179 M. equivalent to 37.13 quarterly amortization. As shown in Table 6, its operating margin has been declining in part due to maintenance and consumer expense costs which had been increasing at the rate of 20% and 40%, respectively from 1976-2000. These expense items combined comprise 55% of total non-power costs and both are directly related to the condition of the lines and characteristics of the consumers served, i.e., disperse population means more expense in terms of collection.

Table 6

NORSAMELCO Historical Financial Status, 1995-2000

	Gross Revenue	Total Operating Expense	Operating Margin	Net Margin	Collection Efficiency
1995	35299	31430	3869	(558.00)	0.78
1996	48304	44249	4055	(401.00)	0.83
1997	65596	59904	5692	509	0.83
1998	85811	82143	3668	(1209.00)	0.77
1999	86977	86434	543	(4024.00)	0.94
2000	107119	104976	2143	(2970.00)	0.92

For the remaining unserved areas, it is therefore logical to consider decentralized solutions rather than further grid expansion in order to lessen the installation and maintenance cost for the connections.

III. Conclusion and Recommendations

Based on the foregoing analysis, there is sufficient basis to consider the re-franchising or revision of some of the EC franchises after careful review and due hearing.

The preliminary results of the economic and financial of the evaluation on the 4 sampled ECs showed that any further expansion of lines from the grid will not have any positive effect on the ECs. Without full government subsidy, it is not logical for the sampled ECs to keep on expanding services to the unserved areas. Consequently, there is no way that the ECs would be able to comply with their obligation to service the entire franchise on an area coverage basis as per their franchise agreements. Government cannot afford to continue providing full subsidies for these projects. Further, many factors have been contributing to change the condition of the franchises through the years. Foremost, among these factors is the impending restructuring of the power sector, which would require that the ECs should give more attention to the business rather than politics of delivering services. All of the above, combine to provide the compelling reasons for a full review of franchise performance, leading to a possible revision of the franchise boundaries. The off-grid areas, which are no longer viable for

interconnection to the EC grid should then be opened for bid by other interested parties, especially those that can operate decentralized systems.

Obviously, today's focus on the off-grid has brought rural electrification into a new stage of development. This stage calls for new, innovative, decentralized solutions. Solutions that will address a new kind of market – one that is dispersed but could be promising in terms of consumption patterns, if electrification can be developed as the driver to economic and livelihood activities, rather than just simply used for lighting purposes. The planning and execution of these types of projects would be much different from what DOE, NEA and conventional utility operators are familiar with.

The following are seen as key steps towards the paradigm shift: to an Off-Grid Electrification Program:

Re-franchising or modification of franchise boundaries is the crucial first step towards developing a new strategic direction for off-grid electrification. The opening-up of the unserved areas in existing franchises to the entry of new players would enable private investor's entry and participation into the rural electrification sector. Given current budget deficits, we can expect a dwindling of government resources for the sector. This would impact directly on the off-grid sub-sector. Hence, private sector entry into the financing of rural electrification is a logical option to take in order to continue and accelerate the pace of rural electrification.

This shift towards a new paradigm of off-grid rural electrification is not one that can be easily done. The question is, would government have the political will and resolve to do the appropriate changes? Definitely, there will be barriers that would deter the implementation of these changes. Foremost would be the politics in rural electrification. While most ECs admit that further expansion to unserved areas is no longer feasible, i.e., given the economics of their franchises, there is still resistance towards giving up portions of their franchises. For most ECs it is betraying their rural electrification mandate if this happens. Moreover, since all the areas are under the representation of a Board Member, the revocation of franchise in some of the areas would also mean giving up the position of a Board Member. This consideration is one of the issues raised by the EC Managers during the consultations with stakeholders. However, from the point of view of the consumers, there is really not much difference as to who delivers the electricity, provided that the service is dependable and reliable. In fact, in many areas where PEI and SIBAT have been working to put up community-based renewable energy projects, there appears to be a common realization among the communities that if they wait for the ECs, it will take a long time before service would come their way. Therefore, if they can do it themselves with some external assistance, the communities are wont to initiate their own community-based energy projects.

The second important step is the organization and creation of the market – both in terms of identifying and attracting industry players and organizing and enabling the consumers to pay for the price of electricity. Just a mere re-franchising effort would not lead to the acceleration of off-grid electrification, if new players are not found, or if the market is not ready to absorb new investments. Hence it is very crucial that efforts to re-franchise should be matched by double efforts to prepare the market through appropriate information dissemination, capacity building and investment enhancing mechanisms. A re-franchising that will not attract new players will not be accepted graciously by franchise holders and would only frustrate everyone in the process.

Thirdly, projects can only happen if sufficient funding is available. New and appropriate financing windows should be developed to cater to the requirements of the off-grid market. The proposed World Bank Loan would be a very good starting point. However, the rules on the implementation of the loan should be carefully designed so that the funds would indeed find its way to the intended beneficiaries. To the extent necessary, flexible, non-bank financing should be considered for the very remote, low income communities where community-based projects are the choice of the people. Government should invest its own funds to make this happen.

A fourth consideration in this paradigm shift would be the willingness and capacity on the part of government to appropriately change its role and function in the administration and supervision of the sector. Organizational refocusing as well as retooling would be required for successful implementation of the Off-grid Program. Since the off-grid would need more attention in terms of organization and capacity building, coordination among the various social services and technical agencies have to be strengthened in order to improve synergies. Because the implementation process in the off-grid is less structured and requires a lot of flexibility, rules will have to set and implemented in a creative manner. Retraining of staff in project evaluation and even "deal-making" or "investment engineering" would be a plus factor.

In view of the above, the following specific recommendations are proposed:

- **Develop and design a new Off-grid Electrification Program.** The government should take the initiative to develop and design a concrete off-grid electrification program based on the premise of allowing entry of new players into the rural electrification sector. The framework for the program and subsequent execution plan should be able to define the concrete components of the program and identify the approaches for each component. To begin with, a policy directive via a circular from the DOE on the Re-franchising Policy would send the right signal among current players. With the passage of the Electric Power Industry Reform Act, the rules should be incorporated in the Implementing Rules and Regulations (IRR), relative to

Section 59 of the new law. In defining the rules, it should be clear that a different set of rules will govern in the off-grid vis-à-vis the rules on-grid.

- **Rationalize policy on provision of subsidies.** Government as a whole should revise its rules on the provision of subsidies. Subsidies from government come in various forms and sources. These include, those being administered by DOE, i.e., Host Community Fund, IPP contributions, DOE grant funds, NEA Subsidy Fund for electrification of non-viable areas, CDF Funds, etc. The rules for the awarding of these funds need to be synchronized for the objective of leveraging these limited funds for private investments and risk capital. Current strategy emphasizes on the granting of full subsidies rather than limiting these to what is only necessary. This may have been effective during the early years of rural electrification when grant monies from institutions like USAID, were abundant. However, with the country's current budget deficits, the practical way is to shift the strategy towards provision of "smart subsidies" where subsidies are channeled only to those that need it, at the levels that these are needed.

  Specifically, NEA should specify that a) it will no longer provide subsidies for expansion projects of ECs that will negatively affect the financial condition of the franchise and b) that subsidies may be given to franchise holders for the off-grid, provided they compete for the subsidies under a transparent competitive bidding process and bring in equity or risk capital into the projects. The ECs may also qualify as off-grid service providers if they decide to undergo the same competitive process or otherwise they can enter into joint venture with a partner who can bring in the equity requirement. Without a categorical statement from NEA that it will no longer provide subsidies for unviable expansion programs, some ECs will always expect the subsidies and will stubbornly refuse to give up the unreached portions of their franchise. This rationalized policy should be issued and implemented by the entire energy sector covering all energy agencies in order to maximize the use of limited government resources and at the same time ensure that subsidies are directed towards the segment of the sector that really needs such subsidies. In this regard, the DOE should define and issue said policy for implementation by line agencies, particularly NEA as lead agency for rural electrification. The policy should cover all subsidies being given out by government , either capital subsidies, pre-investment grants, and subsidies out of the Universal Levy.

- **Review performance of all franchises, redefine boundaries and identify off-grid areas.** [25]The NEA should proceed to review the performance of all franchise holders and negotiate for the modification of franchise for those that

[25] This is consistent with Sec. 23 and 59 of the new EPIRA.

are adjudged to be unable to comply with their franchise obligations within a specified grace period. Areas that are already being energized from another franchise or those proximate to the neighboring franchise may be transferred officially to said utilities. This is consistent with the intent of Sec. 23 of RA 9136. For those areas that are not viable or attractive to any current franchise, temporary waivers of franchise may be allowed to begin the process of getting third parties to enter into the otherwise monopolized areas. These waivers would be logical to allow for market development to happen and the investment climate in the off-grid to improve. NEA should develop the new criteria for the delineation of franchises and subsequent identification of new areas for off-grid electrification. In this respect, NEA should take into consideration the "market packaging" approach as well as draft bidding rules and guidelines developed for DOE under this technical assistance by USAID. These should be use as building blocks for implementing a "new franchising policy". In the light of the anticipated transfer of franchising powers back to Congress, there is a need to specify in the IRR, the rules that would allow the entry of new players in the off-grid areas without having to pass through Congressional approval for a new franchise. It may be most expedient and practical if instead of a franchise, new players in the off-grid may simply be given operating permits by ERC or NEA within the next 5-years, prior to turning over the franchising powers back to Congress.

For the purpose of evaluating franchise performance and defining new off-grid areas it is recommended that all ECs be subjected to an evaluation process that would determine the capacity of the ECs to deliver service in a viable manner within a specified timeframe. In this regard, it is recommended that NEA's investment analysis model should be revised to reflect recent market developments and to incorporate new off-grid technology options. The economic analysis can also be improved by considering other benefits other than simple substitution for kerosene. For example, the new model may utilize HOMER and VIPOR principles but adapted to the local situation. The analysis should also include other technology options particularly NRES.

- **Continue efforts to seek waivers of franchises from ECs.** NEA should pursue the step already taken through this assignment in getting signed Board Resolutions from ECs for either temporary or better still, permanent franchise waivers of their respective unserved areas. As much as possible, the areas identified in the market packages should have this waiver in principle from the ECs concerned. The waivers should be useful for attracting new players to invest in the "market packages".

- **Within the limitations of the EPIRA, institutionalize re-franchising strategy.** Eventually, with the new franchising policy in place, NEA should proceed to negotiate the revision of the EC franchises on a non-adversarial manner. Care should be taken that burden shedding is not done, meaning, the ECs also give up even those areas that are still within the capacity of the

franchise to finance. Institutionalizing the re-franchising strategy would put the house in order, so to speak, because the duly constituted authorities can now recognize even the existing changes that have been done through internal arrangement. The modification of the franchises would eventually free some of the ECs from the burden of missionary electrification and allow them to concentrate on improving their on-grid operations, a must for all the ECs in the new restructured environment.

- **Develop and implement new set of operating rules for the of-grid electrification sector.** A new set of rules should be developed for the off-grid electrification business. These rules should apply only to the off-grid areas and would differ from the set of rules governing on-grid electrification. Those who will join the program should be given the appropriate "carrots and sticks" to encourage entry and at the same time ensure protection of consumers. For example, there could be lighter regulatory oversight for these areas such as unregulated pricing, but some minimum technical standards may be imposed to ensure consumer protection. The "carrots" should be able to leverage limited government financing with new investments from players. "Smart subsidy" components may have to be employed in certain cases. If so, there should be effort to limit such subsidies to the minimum and only for capital expenditures.

- **Clarify agency roles.** A clear delineation of functions among the agencies, primarily, DOE, NEA, NPC should be defined and implemented, particularly with respect to the new off-grid electrification program. The objective is to avoid duplication of functions and ensure that responsibility areas are well defined for easy and effective monitoring. This would also help to clarify to the private sector which of the agencies they need to approach in order to participate in the new off-grid electrification program.

  The following functional delineations are recommended:

  a) DOE as the policy agency must set the direction and planning guidelines as well as strengthen its coordinative capabilities not only among energy agencies but also between national agencies charge with social services and economic development in the countryside. As the oversight agency, DOE should be able to monitor and integrate the implementation of the program, from a policy perspective. For this purpose, it is recommended that DOE should organize a unit within its current structure to be the oversight and coordinating unit for rural electrification.

  b) NEA should take on the lead role in implementing and supervising the off-grid electrification program and ensure coordination between the on-grid and off-grid activities of the various industry players and stakeholders. NEA should set up the operating rules and come up with strategies for attracting private sector into the off-grid areas. It can also take charge of

the market development effort such as, disseminating information about new technologies at the field level. NEA should also undertake the issuance of contracts for delivery of services in the off-grid as well as administration of subsidies to leverage these with private capital based on the policy set by DOE.

c) On the other hand, NPC-SPUG must be ready to take on the role of operator of the last resort, should there be no takers in some areas which are not viable or attractive for private sector to come in.

- **Develop and implement an effective marketing drive.** The success of the new program would depend on the extent that government can generate interest and participation from industry players. To create a market for renewable energy for decentralized rural electrification, concrete steps should be done to open the market. Experience in other countries, i.e., in both the UK and US, reveal that market creation can only begin with some form of portfolio standard. In the same vein, the Philippines may possibly consider the implementation of a "Renewable Energy Portfolio Standard" to create an off-grid market. This may focus on suppliers/generators of energy and would involve requiring them to either implement, buy or invest in renewable energy projects in the off-grid areas. These projects can be done either through investments in RESCO operations, financing or investment in NGOs and community-based projects, etc. This strategy should also be able to create off-grid industry players and ensure investments to flow into the off-grid sub-sector. Some initial discussions of this author with some IPPs indicate that they are not objecting to this idea provided that the rule is going to be applicable equally among them and that this would involve only a small percentage of their operating capacity. In addition, current obligations imposed on the IPPs may be implemented in a manner wherein, any investment they do in the off-grid would be considered as compliance of their obligation. Care must be made to avoid contributions from the IPPs by way of donations as this may only lead to unsustainability and wrong perception among private sector.

- **Develop support mechanisms both for industry and consumers.** Clearly, while a significant number of the population remains unserve, these cannot outright be considered as ready markets for renewable energy. These potential markets need to be organized and developed to become viable for entry by the business sector. For example, the development of livelihood activities relative to the delivery of energy services in the off-grid areas should be given attention. Forward and backward integration for up-scaling industry and productive uses should be done by DOE/NEA in coordination with other government agencies, such as, LGUs, DTI, DA, DILG, and GFI. Consumer support in terms of information, technical advisory and financing should be provided. These consumer support program may include, among others: a) information dissemination program on the benefits and uses of renewable

energy, b) advice on technology choices based on needs of the market and resources available in the areas, c) assistance in project packaging and financing for community-based systems, and d) micro-financing to improve the aborptive capacity of local consumers.

- Finally, **Donor agencies should begin to consider direct assistance to projects in order to make things happen on the ground.** This assistance could be by way of a concrete fund to help disadvantaged groups or communities finance their projects. Because they lack the basic credit essentials, communities will never be able to access financing through the banking system. Hence, non-bank financing intermediation will be required. While most donor agencies would be happy to see real projects on the ground, most assistance are limited to the soft components, i.e., technical assistance, capacity building, etc. Without the capital however, project gestation takes longer than desired because after projects are identified and developed, it takes a long while before actual funds for implementation can be sourced. This situation results in the piling-up of projects in various stages of development and eventual frustrations among the intended beneficiaries/project sponsors at grassroots level. A project like the WB-ESMAP assisted Pilot Village Power Fund is a good start.[26] It is hoped that soon after the pilot stage, other donors would buy-into the program and provide additional funding to make the Fund really work.

Intentionally, the above recommendations did not only focus on the re-franchising policy, simply because re-franchising is only a first step. Without the follow-through, efforts, the re-franchising exercise will not be of any value.

/Grace S. Yeneza, 6/30/01

[26] The Village Power Fund (VPF) is a non-bank intermediation facility conceived by Preferred Energy, Inc.(PEI) for the purpose of incubating and making funds available to community-based type projects that cannot access financing from the mainstream banking sector due to the non-formal form of the sponsor organization, lack of credit track record, and absence of credit guarantees. The idea is to help the target communities in project preparation and structuring in order to create a sustainable project, which will be provided with a flexible loan through the VPF. The pilot project to develop and test the feasibility of the project incubation and financing model is currently being implemented by PEI with funding assistance from the WB-ESMAP. The challenge is how to build-up the fund, after the first two projects are implemented using the initial fund from WB-ESMAP.

LIST OF REFERENCES

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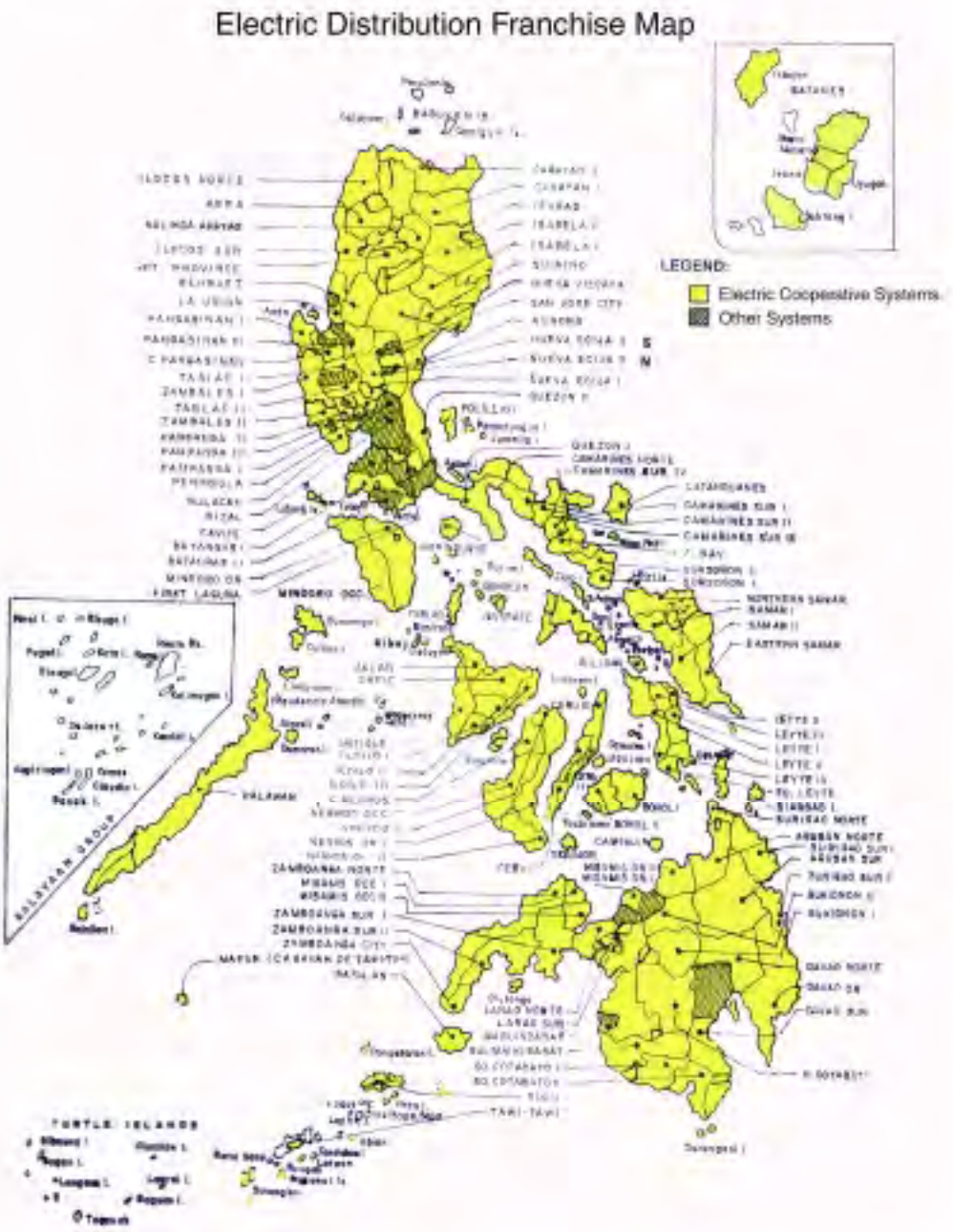
11. National Electrification Commission, Resolution Granting Franchise to Antique Electric Cooperative, Inc.
12. National Electrification Commission – Technical Staff, MOA between Surigao Sur I Electric Cooperative (SURSECO I) and Surigao Sur II Electric Cooperative (SURSECO II)
13. National Electrification Commission-Technical Staff, MOA between Dagupan Electric Corporation and La Union Electric Cooperative, Inc (LUELCO)
14. National Electrification Commission – Technical Staff, MOA between Bukidnon Electric Cooperative (BUSECO) and Misamis Oriental I Electric Cooperative (MORESCO I)
15. National Electrification Commission – Technical Staff, MOA between Aklan Electric Cooperative (AKELCO) and Shell Renewables, Inc.
16. Preferred Energy, Inc., Rural Power Sector Strategy (Draft Report)
17. Villaflor, Thomas, Special Study on Cagayan I Electric Cooperative (CAGELCO I) Line Expansion to Barangay Sto. Niño and its Impact on System Losses

LIST OF ANNEXES

1. Electric Distribution Franchise Map
2. Sample Certificate of Franchise
3. NEC Policy No. 501
4. Status of Energization, 2000
5. CAGELCO I – Study on Impact of Line Extension on System Losses
6. Statistical Information on Sample Cooperatives (Norsamelco, Nuvelco, Dasureco, Maselco)
7. Proposed DOE Circular on Standard Franchise Waiver Agreement

Annex 1


Electric Distribution Franchise Map
LEGEND:
Electric Cooperative Systems
Other Systems
TURTLE ISLANDS

Republic of the Philippines

National Electrification Commission

Metro Manila

Certificate No. 036

Know all men by these presents:

By virtue of the authority vested in the National Electrification Commission by Presidential Decree No. 269 dated August 6, 1973, this

Certificate of Franchise

is hereby issued to the

Antique Electric Cooperative, Inc.

Authority is hereby granted to operate an electric light and power service for a period of fifty (50) years from August 8, 1979 *in the areas presently comprised by the following municipalities:*

Anini-y	Bugasong	Hamtic	San Jose	Sibalom
Barbaza	Culasi	Lawa-an	San Remegio	Tibiao
Belison	Dao	Patnongon	Sebaste	Valderama

This franchise is hereby granted subject to existing laws, the rules and regulations of the Commission and the conditions prescribed in the decision of the Commission.

Given at Metro Manila, Philippines, *this* 8th day of August 1979.

IMELDA ROMUALDEZ MARCOS
Commissioner

ALFREDO L. JUINIO
Commissioner

JAIME C. LAYA
Commissioner

CEFERINO S. CARREON
Commissioner

CONRADO D. DEL ROSARIO
Commissioner

PEDRO G. DUMOL
Commissioner

Attested:

ANITA M. ILUSTRE
Secretary of the Commission

KNOW ALL MEN BY THESE PRES

By virtue of the authority vested i
by Presidential Decree No. 269, dated M

Provisional Certificate of Franchise

is hereby issued to the

Antigue Electric Cooperative, Inc.

retroactive to the date of its registration. Authority is hereby granted to operate an electric light and power service for a period of six (6) months, automatically renewed for periods of six (6) months thereafter, unless otherwise revoked, in the areas presently comprised by the following municipalities:

Anini-Y	Dao	Patnongon	San Remigio
Belison	Hamtic	San Jose	Sibalom

This provisional franchise is hereby granted subject to existing laws, and the rules and regulations of the Commission.

Given at Quezon City, Philippines, this 22nd day of June, 1977.

ALFREDO C. JUINIO
COMMISSIONER

JAIME C. LAYA
COMMISSIONER

CEFERINO S. CARREON
COMMISSIONER

CONRADO D. DEL ROSARIO
COMMISSIONER

PEDRO G. DUMOL
COMMISSIONER

Attested:
ANITA M. ILUSTRE
Secretary of the Commission

REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT

National Electrification Administration

POLICY NO. 501

SUBJECT : Criteria for Judging the Quality of Public Service Provided by Private Electric Utilities

PURPOSE : To establish guidelines for judging if an existing private electric utility is serving the people of its franchise area in an acceptable manner.

INTRODUCTION:

Electric utilities are granted, by the National Electrification Commission (NEC), exclusive service rights in franchise areas. In the absence of competition the people of the franchise area have no option but to accept service from the franchised utility. Under these circumstances it is desirable to establish criteria to determine if a franchised utility is performing in a sufficiently efficient and effective manner to justify continuation of its exclusive service rights.

It is necessary for the public and the owners and managers of electric utilities to be aware of the standards of performance expected from electric utilities as a condition for maintaining their franchise privilege. The following performance criteria will be employed by the NEA in deciding on the granting of franchise rights.

POLICIES:

Effective upon the date of approval of this Policy No. 501 those electric utilities substantially meeting the criteria listed below will be:

1. granted continuing electric franchise privilege
2. eligible for possible financial support from the National Electrification Administration

Electric utilities unable to meet these criteria within a reasonable time after adoption of this Policy will lose their franchise privilege.

CRITERIA:

1. Area Coverage - It is the policy that an electric utility should extend electric service to all consumers/persons within its franchise area coverage.

   All electric utilities desiring to remain in operation must develop and begin implementation of plans to provide by 1990 electric services to all persons within its franchise area desiring such services.

2. Reasonable Rates - The rates of an electric utility should be reasonable based on their capital investments. The rates of a utility must further be competitive with those from possible alternatives to that utility.

3. Quality of Service:

   a. Dependability of Service - Reliability and continuity of electric service must be within the acceptable standards. Power service interruptions, if any, should be minimal.

   b. Adequacy of Service - Service is adequate when the utility can supply the total demand for power of its general consumers and has ample power reserves to meet growth in demand.

4. Financial Capability - The utility must be able to meet its financial obligations. It must also be able to generate funds for replacement and maintenance of necessary electrical facilities as well as additional investment funds for expansion of service.

5. Financial Assistance - It is NEA policy that any private electric utility that meets all these criteria may be eligible not only for continued franchise but also financial assistance from NEA.

6. Will of the People - Normally, the performance criteria cited above will determine the choice as to the preferred electric utility system for a given area. However, in establishing policies in the electrification program, the NEA believes it is necessary to recognize the ultimate primacy of the public will. Experience has shown that often

the people of an area will forcefully express their views as to whether the electric utility serving their area should be private, municipal or cooperative. Thus, while the performance criteria listed above are very important in determining the choice of electric utility system; at the same time, it is mandatory that another major factor in making the choice, be the desires of the people consuming the electricity.

IMPLEMENTATION:

The Board, acting as a Commission, shall have over-all responsibility for enforcing this Policy No. 501.

EFFECTIVITY: February 1, 1981.

APPROVED pursuant to Resolution No. 23 dated January 21, 1981.

IMELDA ROMUALDEZ MARCOS
Chairman

ATTESTED:

Anita M. Illustre
ANITA M. ILUSTRE
Corporate Secretary

NATIONAL ELECTRIFICATION ADMINISTRATION

ENERGIZATION

As of December 31, 2000

	Potential	As of Dec. 1999	Jan	Feb	March	April	May	June	July	Aug.	Sept.	Oct.	Nov	Dec	As of Dec. 2000	% Energized
Municipalities/Cities	1454	1454	0	0	0	0	0	0	0	0	0	0	0	0	1454	100
Barangays	36075	26610	42	35	135	62	92	76	70	80	88	56	47	555	27879 *	77
Connections	7784000	5013461	14618	19056	20096	24420	24322	17973	30434	25599	25079	22474	24084	38440	5300056	68

* Includes barangays energized by other Agencies/Offices

REGIONAL SUMMARY
Status of Energization
As of December 31, 2000

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March 9, 2001

REGION	MUNICIPALITIES/CITI COVERAGE	TOTAL TO DATE	%	BARANGAYS COVERAGE	TOTAL TO DATE	%	TOTAL CONNECTIONS POTENTIAL	TOTAL TO DATE	%
REGION I	116	116	100	3034	2972	98	579000	526825	91
REGION II	97	97	100	2377	1887	79	449000	346525	77
CORDILLERA ADMINISTRATIVE REGION (CAR)	73	73	100	1106	894	81	225000	159718	71
REGION III	92	92	100	2097	2021	96	700000	662151	95
REGION IV	148	148	100	3513	2907	83	769000	582714	76
REGION V	113	113	100	3408	2566	75	702000	474286	68
TOTAL LUZON	**639**	**639**	**100**	**15535**	**13247**	**85**	**3424000**	**2752219**	80
REGION VI	132	132	100	3869	3053	79	918000	542774	59
REGION VII	121	121	100	2715	2268	84	620000	399149	64
REGION VIII	143	143	100	4388	3076	70	578000	333984	58
TOTAL VISAYAS	**396**	**396**	**100**	**10972**	**8397**	**77**	**2116000**	**1275907**	60
REGION IX	80	80	100	2145	1230	57	449000	242967	54
REGION X	66	66	100	1436	1229	86	333000	243383	73
REGION XI	65	65	100	1270	980	77	535000	322055	60
REGION XII	45	45	100	1054	610	58	238000	136475	57
AUTONOMOUS REGION IN MUSLIM MINDANAO (ARMM)	90	90	100	2357	1092	46	364000	76388	21
CARAGA	73	73	100	1306	1094	84	325000	250662	77
TOTAL MINDANAO	**419**	**419**	**100**	**9568**	**6235**	**65**	**2244000**	**1271930**	57
TOTAL SERVICED BY EC	**1454**	**1454**	**100**	**36075**	**27879 ***	**77**	**7784000**	**5300056**	68

* Includes barangays energized by other Agencies/Offices

National Electrification Administration
Status of Energization
As of December 31, 2000

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March 9, 2001

REGION / COOPERATIVE	MUNICIPALITIES / CITIES COVERAGE	MUNICIPALITIES / CITIES TOTAL TO DATE	%	BARANGAYS COVERAGE	BARANGAYS TOTAL TO DATE	%	TOTAL CONNECTIONS POTENTIAL	TOTAL CONNECTIONS TOTAL TO DATE	%
REGION I									
1 Ilocos Norte Electric Cooperative, Inc.	23	23	100	557	557	100	95000	94913	97
2 Ilocos Sur Electric Cooperative, Inc.	34	34	100	768	725	94	102000	93357	92
3 La Union Electric Cooperative, Inc.	18	18	100	547	532	97	88000	79502	90
4 Pangasinan I Electric Cooperative, Inc.	9	9	100	192	192	100	51000	41522	81
5 C. Pangasinan Electric Cooperative, Inc.	15	15	100	558	554	99	133000	128804	97
6 Pangasinan III Electric Cooperative, Inc.	17	17	100	412	412	100	110000	88727	81
Sub – Total	116	116	100	3034	2972	98	579000	526825	91
REGION II									
7 Batanes Electric Cooperative, Inc.	6	6	100	29	29	100	3000	2950	98
8 Cagayan I Electric Cooperative, Inc.	12	12	100	378	273	72	86000	62183	72
9 Cagayan II Electric Cooperative, Inc.	21	21	100	510	422	83	81000	57441	71
10 Isabela I Electric Cooperative, Inc.	15	15	100	484	442	91	101000	97201	96
11 Isabela II Electric Cooperative, Inc.	22	22	100	551	411	75	97000	63723	66
12 Nueva Vizcaya Electric Cooperative, Inc.	15	15	100	275	186	68	58000	42786	74
13 Quirino Electric Cooperative, Inc.	6	6	100	150	124	83	23000	20241	88
Sub – Total	97	97	100	2377	1887	79	449000	346525	77
CORDILLERA ADMINISTRATIVE REGION (CAR)									
14 Abra Electric Cooperative, Inc.	27	27	100	303	276	91	37000	29869	81
15 Benguet Electric Cooperative, Inc.	14	14	100	269	249	93	107000	87527	82
16 Ifugao Electric Cooperative, Inc.	11	11	100	175	102	58	28000	11556	41
17 Kalinga – Apayao Electric Cooperative, Inc.	11	11	100	216	150	69	30000	15325	51
18 Mt. Province Electric Cooperative, Inc.	10	10	100	143	117	82	23000	15441	67
Sub – Total	73	73	100	1106	894	81	225000	159718	71
REGION III									
19 Tarlac I Electric Cooperative, Inc.	15	15	100	420	403	96	89000	81505	92
20 Tarlac II Electric Cooperative, Inc.	5	5	100	122	122	100	50000	48757	98
21 Nueva Ecija I Electric Cooperative, Inc.	5	5	100	99	99	100	49000	48101	98
22 Nueva Ecija II (North) Electric Cooperative, Inc.	10	10	100	292	268	92	74000	60538	82
Nueva Ecija II (South – NMT) Electric Cooperative, Inc.	12	12	100	236	229	97	59000	52289	89
23 San Jose City Electric Cooperative, Inc.	1	1	100	39	38	97	17000	16500	97
24 PRESCO Electric Cooperative, Inc.			–	35	35	100	11000	10959	99
25 Pampanga I Electric Cooperative, Inc.	6	6	100	112	112	100	52000	52225	99
26 Pampanga II Electric Cooperative, Inc.	7	7	100	177	155	88	94000	90817	97
27 Pampanga III Electric Cooperative, Inc.	6	6	100	96	96	100	44000	42497	97
28 Peninsula (Bataan) Electric Cooperative, Inc.	12	12	100	240	240	100	89000	88868	99
29 Zambales I Electric Cooperative, Inc.	6	6	100	118	114	97	32000	29500	92
30 Zambales II Electric Cooperative, Inc.	7	7	100	111	110	99	40000	39595	99
Sub – Total	92	92	100	2097	2021	96	700000	662151	95

National Electrification Administration
Status of Energization
As of December 31, 2000

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REGION / COOPERATIVE	MUNICIPALITIES / CITIES COVERAGE	MUNICIPALITIES / CITIES TOTAL TO DATE	MUNICIPALITIES / CITIES %	BARANGAYS COVERAGE	BARANGAYS TOTAL TO DATE	BARANGAYS %	TOTAL CONNECTIONS POTENTIAL	TOTAL CONNECTIONS TOTAL TO DATE	TOTAL CONNECTIONS %
REGION IV									
31 Aurora Electric Cooperative, Inc.	8	8	100	151	124	82	27000	21334	79
32 Laguna Electric Cooperative, Inc.	11	11	100	164	156	95	37000	34112	92
33 Batangas I Electric Cooperative, Inc.	12	12	100	364	364	100	91000	90553	99
34 Batangas II Electric Cooperative, Inc.	17	17	100	483	470	97	131000	129720	99
35 Quezon I Electric Cooperative, Inc.	23	23	100	808	667	83	122000	87460	72
36 Quezon II Electric Cooperative, Inc.	8	8	100	129	94	73	25000	16089	64
37 Lubang Electric Cooperative, Inc.	2	2	100	25	24	96	5000	4255	85
38 Mindoro Occ. Electric Cooperative, Inc.	9	9	100	137	106	77	49000	27984	57
39 Mindoro Or. Electric Cooperative, Inc.	15	15	100	426	320	75	101000	66482	66
40 Marinduque Electric Cooperative, Inc.	6	6	100	218	205	94	35000	27535	79
41 Tablas Electric Cooperative, Inc.	10	10	100	112	112	100	24000	15242	64
42 Romblon Electric Cooperative, Inc.	4	4	100	66	58	88	14000	5955	43
43 Busuanga Electric Cooperative, Inc.	4	4	100	60	33	55	9000	3879	43
44 Palawan Electric Cooperative, Inc.	19	19	100	370	174	47	99000	52114	53
Sub-Total	148	148	100	3513	2907	83	769000	582714	76
REGION V									
45 Camarines Norte Electric Cooperative, Inc.	12	12	100	273	214	78	72000	51398	71
46 Camarines Sur I Electric Cooperative, Inc.	11	11	100	307	241	79	60000	37847	63
47 Camarines Sur II Electric Cooperative, Inc.	10	10	100	259	246	95	72000	56909	79
48 Camarines Sur III Electric Cooperative, Inc.	7	7	100	229	196	86	57000	42187	74
49 Camarines Sur IV Electric Cooperative, Inc.	9	9	100	258	215	83	47000	27012	57
50 Albay Electric Cooperative, Inc.	18	18	100	720	528	73	164000	128296	78
51 Sorsogon I Electric Cooperative, Inc.	8	8	100	253	230	91	41000	33693	82
52 Sorsogon II Electric Cooperative, Inc.	8	8	100	288	254	88	55000	46500	85
53 Catanduanes Electric Cooperative, Inc.	11	11	100	315	274	87	34000	27642	81
54 Masbate Electric Cooperative, Inc.	15	15	100	434	139	32	87000	19840	23
55 Ticao Electric Cooperative, Inc.	4	4	100	72	29	40	13000	2962	23
Sub-Total	113	113	100	3408	2566	75	702000	474286	68
TOTAL LUZON	639	639	100	15535	13247	85	3424000	2752219	80

National Electrification Administration
Status of Energization
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REGION / COOPERATIVE	MUNICIPALITIES / CITIES COVERAGE	MUNICIPALITIES / CITIES TOTAL TO DATE	MUNICIPALITIES / CITIES %	BARANGAYS COVERAGE	BARANGAYS TOTAL TO DATE	BARANGAYS %	TOTAL CONNECTIONS POTENTIAL	TOTAL CONNECTIONS TOTAL TO DATE	TOTAL CONNECTIONS %
REGION VI									
56 Aklan Electric Cooperative, Inc.	19	19	100	382	291	76	78000	50722	65
57 Antique Electric Cooperative, Inc.	16	16	100	537	344	64	70000	36920	53
58 Capiz Electric Cooperative, Inc.	17	17	100	472	384	81	109000	70103	64
59 Iloilo I Electric Cooperative, Inc.	15	15	100	794	638	80	86000	66153	77
60 Iloilo II Electric Cooperative, Inc.	15	15	100	587	449	76	91000	42970	47
61 Iloilo III Electric Cooperative, Inc.	13	13	100	340	264	78	61000	25024	41
62 Guimaras Electric Cooperative, Inc.	5	5	100	96	80	83	20000	10119	51
63 VRESCO Electric Cooperative, Inc.	9	9	100	195	165	85	119000	62011	52
64 Central Negros Electric Cooperative, Inc.	6	6	100	158	146	92	130000	99970	77
65 Negros Occ. Electric Cooperative, Inc.	17	17	100	308	292	95	154000	78782	51
Sub-Total	132	132	100	3869	3053	79	918000	542774	59
REGION VII									
66 Negros Or. I Electric Cooperative, Inc.	11	11	100	285	165	58	81000	27292	34
67 Negros Or. II Electric Cooperative, Inc.	14	14	100	272	237	87	99000	67990	69
68 Bantayan Electric Cooperative, Inc.	3	3	100	49	46	94	18000	12526	70
69 Cebu I Electric Cooperative, Inc.	18	18	100	366	270	74	89000	49765	56
70 Cebu II Electric Cooperative, Inc.	13	13	100	323	261	81	90000	63217	70
71 Cebu III Electric Cooperative, Inc.	5	5	100	138	118	86	49000	39653	81
72 Siquijor Electric Cooperative, Inc.	6	6	100	134	114	85	15000	10725	72
73 Camotes Electric Cooperative, Inc.	4	4	100	56	47	84	15000	7340	49
74 Bohol I Electric Cooperative, Inc.	26	26	100	607	607	100	79000	68785	87
75 Bohol II Elektric Cooperative, Inc.	21	21	100	485	403	83	85000	51856	61
Sub-Total	121	121	100	2715	2268	84	620000	399149	64
REGION VIII									
76 Leyte I Electric Cooperative, Inc.	13	13	100	496	384	77	57000	35725	63
77 Leyte II Electric Cooperative, Inc.	3	3	100	196	196	100	38000	37168	98
78 Leyte III Electric Cooperative, Inc.	9	9	100	285	275	96	36000	18113	50
79 Leyte IV Electric Cooperative, Inc.	6	6	100	247	212	86	43000	32989	77
80 Leyte V Electric Cooperative, Inc.	12	12	100	414	368	89	90000	56611	63
81 So. Leyte Electric Cooperative, Inc.	19	19	100	498	375	75	61000	38707	63
82 Biliran Electric Cooperative, Inc.	8	8	100	132	120	91	22000	13316	61
83 Northern Samar Electric Cooperative, Inc.	24	24	100	569	250	44	71000	24702	35
84 Samar I Electric Cooperative, Inc.	10	10	100	429	219	51	42000	25403	60
85 Samar II Electric Cooperative, Inc.	16	16	100	525	330	63	58000	28559	49
86 Eastern Samar Electric Cooperative, Inc.	23	23	100	597	347	58	60000	22691	38
Sub-Total	143	143	100	4388	3076	70	578000	333984	58
TOTAL VISAYAS	**396**	**396**	**100**	**10972**	**8397**	**77**	**2116000**	**1275907**	**60**

National Electrification Administration
Status of Energization
As of December 31, 2000

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REGION / COOPERATIVE	MUNICIPALITIES / CITIES COVERAGE	MUNICIPALITIES / CITIES TOTAL TO DATE	MUNICIPALITIES / CITIES %	BARANGAYS COVERAGE	BARANGAYS TOTAL TO DATE	BARANGAYS %	TOTAL CONNECTIONS POTENTIAL	TOTAL CONNECTIONS TOTAL TO DATE	TOTAL CONNECTIONS %
REGION IX									
87 Zamboanga Norte Electric Cooperative, Inc.	23	23	100	583	349	60	109000	41435	38
88 Zamboanga Sur I Electric Cooperative, Inc.	25	25	100	626	353	56	117000	57210	49
89 Zamboanga Sur II Electric Cooperative, Inc.	23	23	100	558	268	48	96000	46296	48
90 Zamboanga City Electric Cooperative, Inc.	1	1	100	94	79	84	80000	77263	97
91 Basilan Electric Cooperative, Inc.	8	8	100	284	181	64	47000	20763	44
Sub–Total	80	80	100	2145	1230	57	449000	242967	54
REGION X									
92 Misamis Occ. I Electric Cooperative, Inc.	8	8	100	228	187	82	32000	27399	86
93 Misamis Occ. II Electric Cooperative, Inc.	8	8	100	253	241	95	52000	50459	97
94 Misamis Or. I Electric Cooperative, Inc.	11	11	100	168	142	85	40000	31781	79
95 Misamis Or. II Electric Cooperative, Inc.	12	12	100	269	227	84	50000	33059	66
96 Bukidnon I Electric Cooperative, Inc.	13	13	100	300	229	76	92000	57415	62
97 Bukidnon II Electric Cooperative, Inc.	9	9	100	160	145	91	56000	34895	62
98 Camiguin Electric Cooperative, Inc.	5	5	100	58	58	100	11000	8375	76
Sub–Total	66	66	100	1436	1229	86	333000	243383	73
REGION XI									
99 Davao Oriental Electric Cooperative, Inc.	11	11	100	183	146	80	70000	44345	63
100 Davao Norte Electric Cooperative, Inc.	19	19	100	375	317	85	148000	85125	58
101 Davao Sur Electric Cooperative, Inc.	15	15	100	337	215	64	117000	63323	54
102 So. Cotabato I Electric Cooperative, Inc.	10	10	100	171	136	80	79000	49341	62
103 So. Cotabato II Electric Cooperative, Inc.	10	10	100	204	166	81	121000	79921	66
Sub–Total	65	65	100	1270	980	77	535000	322055	60
REGION XII									
104 Lanao Norte Electric Cooperative, Inc.	19	19	100	406	245	60	62000	43916	71
105 No. Cotabato Electric Cooperative, Inc.	12	12	100	350	216	62	90000	55733	62
106 Sultan Kudarat Electric Cooperative, Inc.	14	14	100	298	149	50	86000	36826	43
Sub–Total	45	45	100	1054	610	58	238000	136475	57

National Electrification Administration
Status of Energization
As of December 31, 2000

MISD-PLANNING
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March 9, 2001

REGION / COOPERATIVE	MUNICIPALITIES / CITIES COVERAGE	MUNICIPALITIES / CITIES TOTAL TO DATE	MUNICIPALITIES / CITIES %	BARANGAYS COVERAGE	BARANGAYS TOTAL TO DATE	BARANGAYS %	TOTAL CONNECTIONS POTENTIAL	TOTAL CONNECTIONS TOTAL TO DATE	TOTAL CONNECTIONS %
AUTONOMOUS REGION IN MUSLIM MINDANAO (ARMM)									
107 Tawi-Tawi Electric Cooperative, Inc.	8	8	100	185	34	18	37000	4924	13
108 Siasi Electric Cooperative, Inc.	2	2	100	66	14	21	10000	1642	16
109 Sulu Electric Cooperative, Inc.	15	15	100	330	109	33	69000	12781	19
110 Cagayan de Sulu Electric Cooperative, Inc.	2	2	100	17	7	41	3000	713	24
111 Lanao Sur Electric Cooperative, Inc.	40	40	100	1180	646	55	98000	26467	27
112 Maguindanao Electric Cooperative, Inc.	23	23	100	579	282	49	147000	29861	20
Sub-Total	90	90	100	2357	1092	46	364000	76388	21
CARAGA									
113 Agusan Norte Electric Cooperative, Inc.	12	12	100	249	242	97	82000	72538	88
114 Agusan Sur Electric Cooperative, Inc.	14	14	100	314	198	63	75000	47326	63
115 Surigao Norte Electric Cooperative, Inc.	12	12	100	203	181	89	45000	38581	86
116 Siargao Electric Cooperative, Inc.	9	9	100	131	119	91	14000	9342	67
117 Dinagat Electric Cooperative, Inc.	7	7	100	100	59	59	17000	5050	30
118 Surigao Sur I Electric Cooperative, Inc.	7	7	100	138	135	98	57000	50074	88
119 Surigao Sur II Electric Cooperative, Inc.	12	12	100	171	160	94	35000	27751	79
Sub-Total	73	73	100	1306	1094	84	325000	250662	77
TOTAL MINDANAO	**419**	**419**	**100**	**9568**	**6235**	**65**	**2244000**	**1271930**	**57**
TOTAL	**1454**	**1454**	**100**	**36075**	**27879 ***	**77**	**7784000**	**5300056**	**68**

* Includes barangays energized by other Agencies/Offices

Prepared by:

EUFEMIA L. NACHOR
Mgmt. Info System Dev't. Chief A
MISD, Planning

Noted by:

ROGER C. ADALIA
Manager, MISD
Planning Dept.

Annex 5

SYSTEM STUDY IN CAGAYAN 1 ELECTRIC COOPERATIVES, INC.
Scenario: Proposed Nine (9) barangays of Sto. Nino energized

Feeder 22	BASE RUN		OPTION 1 Bgys. In Sto. Nino (energized)		OPTION 2 Bgys. In Sto. Nino Disct'd (Section 22T-280 opened)		OPTION 3 25% Growth		OPTION 4 50% Growth	
	Section id	Value	Section id	Value	Section id	Value	Section id	Value	Section id	Value
KVA TOTAL		3603		3707		3383		4681		5665
Power Factor		91		90		91		88		87
KW Network Loss		344		379		291		604		887
% Loss		10.5		11.3		9.4		14.6		18.1
Min. Section Loss	22S-550	182.1	22S-30	175.8	22S-550	177.3	P22S-30	157.5	P22S-30	138.4
Max. Section Loss	22T-10	20.9	22T-10	24.8	22T-10	19.6	22T-10	39.3	22T-10	57.4
Max. Section Load	22T-10	59.3	22T-10	63	22T-10	58.5	22T-10	80.4	22T-10	97.3
KW Loss Savings				-35		52		-260		-543
LF		0.5								
Loss Factor		0.3								
Average Loss Savings				-10.5		15.9		-78		-162.9
Average Energy Savings				-91,980 kwhr/yr		139,284		-683,280		-1,427,004
EC Selling Rate		P5/kWhr.								
Cost of Savings / yr.				P -459,900		P696,420		P -3,416,400		P -7,135,020

NORTHERN SAMAR ELECTRIC COOPERATIVE, INC. (NORSAMELCO)
Del Pilar St., Catarman, Northern Samar

A. BACKGROUND INFORMATION

Address	Del Pilar St., Catarman, Northern Samar
Telephone Nos. / Fax Nos.	–
Date of Incorporation and Registration	October 1, 1977
Date of First Energization	August 11, 1980

Officials	1998	1999	2000
General Manager	Mr. Ricardo P. Lagro	Mr. Ricardo P. Lagro	Mr. Ricardo P. Lagro
President	Mr. Ruben D. Arcedila	Mr. Ruben D. Arcedila	Mr. Guido P. Escober

		1995	1996	1997	1998	1999	2000
B.	CATEGORY	D	D	D	E	E	
	CLASSIFICATION	Medium	Medium	Medium	Medium	Medium	

C. STATUS OF MEMBERSHIP 20354

D. STATUS OF LOAN/SUBSIDY RELEASES (PM):
(Cumulative Total)

	1995	1996	1997	1998	1999	2000
Construction						
Total Approved Loan	86.3	118.8	118.8	118.8	118.5	118.5
Total Releases	67.1	69.1	69.9	71.3	71.7	72.6
Logistics						
Total Releases	–	–	–	–	–	–
Subsidy						
Total Releases	–	–	43.0	42.7	49.5	51.9
Mini–Hydro						
Total Releases	–	–	–	–	–	–
Dendro–Thermal						
Total Releases	–	–	–	–	–	–

E. STATUS OF LOAN REPAYMENTS (P'000) :
(Cumulative Total)

EQA	1280	1516	1516	1551	1594	1843
Total Amort Due	28731	35623	43441	51624	60467	70324
Total Payments	3801	3965	5165	5852	5865	6265
Repayments	3801	3965	5165	5852	5865	6265
Advance Payments	–	–	–	–	–	–
Payments Applied to Principa	–	–	–	–	–	–
Quarters in Arrears	19	21	25.25	29.51	34.25	34.76
Quarters in Advance	–	–	–	0.00	0.00	0.00
Repayments Rate	13%	11%	12%	11%	10%	9%

F. NPC POWER ACCOUNTS (P'000) :

Current	2194	2384	4037	4223	4804	6310
Overdue	–	1197	1217	3103	5067	10894
Restructure	–	–	–	–	–	–
Months overdue	Current	1	1	1	2	2
3% Prompt Payment Discount	–	–	–	–	–	–

STATUS OF ENERGIZATION :
NORSAMELCO

Municipalities	Barangays Coverage	1995	1996	1997	1998	1999	2000	%
1 Allen	20	16	15	15	15	15	15	75
2 Biri	8			1	2	2	3	38
3 Bobon	18	8	8	7	7	8	8	44
4 Capul	12		5	5	5	5	6	50
5 Catarman	55	26	27	30	30	30	31	56
6 Catubig	47	9	10	10	11	11	16	34
7 Gamay	26		6	8	8	8	11	42
8 Laoang	56	14	14	14	14	15	22	39
9 Lapinig	15			4	4	5	5	33
10 Las Navas	53	3	3	3	3	2	9	17
11 Lavezares	26	12	12	12	13	13	14	54
12 Lope de Vega	22	2	2	2	2	2	5	23
13 Mapanas	13		3	6	6	6	6	46
14 Mondragon	24	8	8	10	13	13	14	58
15 Palapag	32	8	12	13	13	14	14	44
16 Pambujan	26	11	11	11	11	11	13	50
17 Rosario	11	3	3	4	4	4	4	36
18 San Antonio	10		3	3	4	4	6	60
19 San Isidro	14	12	12	12	12	12	12	86
20 San Jose	16	10	10	10	10	10	13	81
21 San Roque	16	8	9	9	9	9	10	63
22 San Vicente	7			3	3	3	3	43
23 Silvino Lobos	26			3	3	3	3	12
24 Victoria	16	7	7	7	7	7	7	44
Total	569	157	180	202	209	212	250	44

Municipalities	Connections Potential	1995	1996	1997	1998	1999	2000	%
1 Allen	3152	1302	1422	1552	1687	1798	1840	58
2 Biri	1290			250	319	343	354	27
3 Bobon	2561	671	734	812	921	999	1023	40
4 Capul	1745		282	344	375	388	391	22
5 Catarman	9047	3988	4318	4728	5246	5676	5819	64
6 Catubig	3922	530	577	623	698	738	765	20
7 Gamay	3057		315	450	605	713	733	24
8 Laoang	7809	1826	1958	2128	2262	2438	2501	32
9 Lapinig	1368			211	271	316	336	25
10 Las Navas	4201	214	228	254	281	302	314	7
11 Lavezares	3563	711	771	824	934	1044	1057	30
12 Lope de Vega	1588	131	146	157	178	196	206	13
13 Mapanas	1300	63	126	173	237	282	286	22
14 Mondragon	3908	715	842	939	1202	1307	1332	34
15 Palapag	3939	655	977	1113	1305	1402	1440	37
16 Pambujan	3283	721	806	872	968	1033	1083	33
17 Rosario	1173	237	276	314	368	396	406	35
18 San Antonio	1395		131	243	282	310	350	25
19 San Isidro	3519	1204	1310	1409	1513	1640	1686	48
20 San Jose	2058	677	720	783	862	916	936	45
21 San Roque	2444	606	686	746	815	888	917	38
22 San Vicente	1156			144	186	189	190	16
23 Silvino Lobos	1569			12	12	12	12	1
24 Victoria	1836	546	590	630	680	706	725	39
Total	70884	14797	17215	19711	22207	24032	24702	35

misd/planning

MANAGEMENT INFORMATION SERVICES DIVISION
Data Management and Monitoring Section
FINANCIAL AND STATISTICAL DATA
NORTHERN SAMAR ELECTRIC COOPERATIVE, INC.

INCOME STATEMENT (P'000)	1995	1996	1997	1998	1999	2000
Gross Revenue	35299	48304	65596	85811	86977	107119
Power Cost	22369	30911	40581	55620	58657	72477
Non-Power Cost						
Transmission Expense						
Distribution Exp						
Operations Exp	586	668	1318	1211	1148	1211
Maintenance Exp	1765	2711	5206	8361	7997	10079
Consumer Accts Exp	1557	2174	3316	6020	7469	7733
Admin & Gen Expense	5153	7785	9483	10931	11163	13476
Total Operating Expense	31430	44249	59904	82143	86434	104976
Operating Margin	3869	4055	5692	3668	543	2143
Depn & Amort Expense	1761	2447	3388	3921	4234	4317
Interest Expense	3399	3332	3336	3575	3307	4336
Net Operating Margin	-1291	-1724	-1032	-3828	-6998	-6510
Other Revenues	733	1323	1541	2619	2974	3540
Net Margin/Loss	-558	-401	509	-1209	-4024	-2970
MWH Generated						
MWH Purchased	10590	14116	19085	22462	23422	25445
Total	10590	14116	19085	22462	23422	25445
MWH Sold	8508	11156	14910	18233	18900	20846
Primary Voltage Discount (MWH)			481	729	760	811
Coop Consumption (MWH)	16	23	61	57	60	54
Systems Loss	19.51%	20.81%	19.04%	15.84%	16.34%	15.16%
Peak Load (KW)	3690	5017	4913	5558	5772	5902
Load Factor	33%	32%	44%	46%	46%	49%
Collection Eff	78%	83%	83%	77%	94%	92%
Ave Systems Rate (P/KWH)	4.15	4.33	4.40	4.71	4.60	5.14
Ave Power Rate (P/KWH)	2.11	2.19	2.13	2.48	2.50	2.85
No of Employees	95	110	139	140	136	136
Conn./Employee	135	145	129	141	158	166
CONNECTION PER TYPE OF CONSUMER (ACTUAL BILLED)						
Residential	11336	13446	15917	17998	19819	20821
Commercial	1105	2084	1504	1166	1152	1160
Industrial	5	5	9	4	8	4
Public Bldg	290	325	386	438	479	508
Street Lights	42	46	57	59	57	63
Sale for Resale						
Large Load						
Irrigation						
BAPA	30	31	23	25	27	18
Water System						
Wholesale to Sister Coop						
Energy Recovered						
Others						
TOTAL	12808	15937	17896	19690	21542	22574
SALES PER TYPE OF CONSUMER (MWH)						
Residential	5652	7719	10713	13563	14253	15561
Commercial	1533	1969	2419	2795	2705	3075
Industrial	99	89	104	83	92	102
Public Bldg	646	772	1076	1212	1271	1578
Street Lights	89	103	121	102	107	112
Sale for Resale						
Large Load						
Irrigation						
BAPA	410	504	477	478	472	418
Water System						
Wholesale to Sister Coop						
Energy Recovered						
Others	79					
TOTAL	8508	11156	14910	18233	18900	20846

Prepared by:

GINA T. QUINDO
Sr. Proj. Planning & Dev't. Off. A

Noted by:

ANA-ROSA D. PAPA
Data Management Chief B

NUEVA VIZCAYA ELECTRIC COOPERATIVE, INC. (NUVELCO)
Gabut, Dupax Del Sur, Nueva Vizcaya

A. BACKGROUND INFORMATION

Address	Dupax del Sur, Nueva Vizcaya
Telephone Nos. / Fax Nos.	Solano- (078) 326-6111/Bayombong-321-2337/ Bambang-321-3113/Bagabag-332-2090
Date of Incorporation and Registration	September 26, 1972
Date of First Energization	May 15, 1977

Officials	2000	2001
President	Mr. Ronaldo S. Galvez	Mr. Ronaldo S. Galvez
Gen Manager	Mr. Patrick A. Flores	Mr. Patrick A. Flores

	1995	1996	1997	1998	1999	
B. CATEGORY CLASSIFICATION	B Large	B Large	B Large	B Large	B Large	
C. STATUS OF MEMBERSHIP			38549		43003	Nov 00 44714

D. STATUS OF LOAN RELEASES (PM) (Cumulative Total)

	1995	1996	1997	1998	1999	2000
Construction						
Total Approved Loan	117.0	146.2	138.9	139.5	138.1	138.1
Total Releases	77.0	77.0	77.2	81.5	88.9	109.3
Logistics						
Total Approved Loan			7.3	7.3	7.3	7.3
Total Releases			-	-	-	0.5
Subsidy						
Total Releases	6.3	8.6	10.5	12.7	15.7	15.7
Relending						
Total Releases						
Mini-Hydro						
Total Releases	13.0	13.0	13.0	13.0	13.0	13.0
Dendro-Thermal						
Total Releases	88.2	88.2	88.2	88.2	88.2	88.2

E. STATUS OF LOAN REPAYMENTS (P'000) (Cumulative Total)

EQA	1786	1811	1819	1825	1961	2316
Total Amort Due	46254	53508	60785	68079	75924	84502
Total Payments	50937	59638	69566	77320	85135	92876
Repayments	46254	53508	60785	68079	75924	84502
Advance Payments	12	1355	4006	4466	4436	3599
Payments Applied to Principal	4671	4775	4775	4775	4775	4775
Quarters in Arrears	0	0	0	0	0	0
Quarters in Advance			2	2	2	2
Repayments Rate	110%	111%	114%	114%	112%	110%

F. NPC POWER ACCOUNTS (P'000)

Current	4883	7017	9050	10805	11406	15891
Overdue	-	-	-	-	-	-
Restructure	-	-	-	-	-	-
Months overdue	Current	Current	0	0	0	0
3% Prompt Payment Discount		269	270	335	355	476

G. STATUS OF ENERGIZATION
NUVELCO

Municipalities	Barangays Coverage	Cumulative Total 1995	1996	1997	1998	1999	2000	%
1 A. Castaneda	6	2	2	2	2	2	2	33
2 Ambaguio	8	1	1	1	1	1	1	13
3 Aritao	22	16	16	16	16	18	18	82
4 Bagabag	17	17	17	17	17	17	17	100
5 Bambang	25	22	22	22	22	25	25	100
6 Bayombong	25	21	21	21	21	21	21	84
7 Diadi	19	10	11	12	12	13	13	68
8 Dupax Norte	*15*	7	7	7	7	10	10	67
9 Dupax Sur	19	9	9	9	9	10	10	53
10 Kasibu	30	11	11	11	11	12	12	40
11 Kayapa	30	10	10	10	10	10	10	33
12 Quezon	12	8	8	8	8	8	8	67
13 Sta. Fe	16	8	8	8	8	9	9	56
14 Solano	22	21	21	21	21	22	22	100
15 Villaverde	9	7	7	7	7	8	8	89
Total	275	170	171	172	172	186	186	68

Municipalities	Connections Potential							
1 A. Castañeda	712	180	183	226	249	261	266	37
2 Ambaguio	1299	28	30	40	41	49	49	4
3 Aritao	5040	3346	3403	3828	4027	4182	4314	86
4 Bagabag	5023	3325	3382	3732	3914	4050	4170	83
5 Bambang	6700	5046	5133	5804	6115	6384	6608	99
6 Bayombong	8038	6406	6516	7053	7353	7681	7987	99
7 Diadi	2194	730	743	986	1059	1111	1196	55
8 Dupax Norte	4089	1839	1871	2081	2189	2424	2545	62
9 Dupax Sur	2279	1037	1055	1244	1297	1341	1378	60
10 Kasibu	4165	464	472	619	653	738	758	18
11 Kayapa	3502	262	267	313	331	346	374	11
12 Quezon	2417	814	828	924	974	1076	1147	47
13 Sta. Fe	1903	732	745	864	898	953	1013	53
14 Solano	9428	7528	7658	8299	8681	9019	9316	99
15 Villaverde	2539	1274	1295	1466	1541	1604	1665	66
Total	59327	33011	33581	37479	39322	41219	42786	72

MISD, PLANNING DEPARTMENT

MANAGEMENT INFORMATION SERVICES DIVISION
Data Management and Monitoring Section

FINANCIAL AND STATISTICAL PROFILE
NUEVA VISCAYA ELECTRIC COOPERATIVE, INC.

INCOME STATEMENT (P'000)	1995	1996	1997	1998	1999	2000
Gross Revenue	102063	117187	140500	176961	189196	219634
Power Cost	60082	76266	95123	128419	137263	172261
Non-Power Cost						
Transmission Exp						
Distribution Exp						
Operations Exp	3637	4076	4565	7218	8277	6304
Maintenance Exp	6375	8021	5597	7434	12549	3338
Consumer Accts Exp	8559	10328	10213	16069	12263	11754
Admin & Gen Expense	14238	13587	18464	20705	22940	23558
Total Operating Expense	92891	112278	133962	179845	193292	217215
Operating Margin	9172	4909	6538	-2884	-4096	2419
Depn & Amort Expense	2072	2868	2945	4387	4700	6369
Interest Expense	4395	4359	4808	4837	4713	4980
Net Operating Margin	2705	-2318	-1215	-12108	-13509	-8930
Other Revenues	3655	6351	5270	8095	9192	9762
Net Margin/Loss	6360	4033	4055	-4013	-4317	832
MWH Generated	31894	36126	40441	46760	47663	52999
MWH Purchased	31894	36126	40441	46760	47663	52999
Total	25149	28243	31580	36593	38476	42323
MWH Sold						
Primary Voltage Discount (MWH)	49	99	110	125	121	106
Coop Consumption (MWH)	20.99%	21.55%	21.64%	21.48%	19.02%	19.94%
Systems Loss	7073	8145	9378	9733	9996	10913
Peak Load (KW)	51%	51%	49%	55%	54%	55%
Load Factor	92%	90%	90%	NDA	92%	88%
Collection Eff	4.06	4.15	4.45	4.84	4.92	5.19
Ave Systems Rate (P/KWH)	1.88	2.11	2.35	2.75	2.88	3.25
Ave Power Rate (P/KWH)	207	173	191	223	210	189
No. of Employees	144	192	186	168	183	217
Conn/Employee						

CONNECTION PER TYPE OF CONSUMER (Actual Billed)						
Residential	26490	29759	32286	33433	34833	36786
Commercial	1313	1424	1575	1668	1676	1686
Industrial	362	799	397	370	412	433
Public Bldg	532	565	643	701	741	875
Street Lights	1184	589	593	1339	838	1141
Sale for Resale						
Large Load						
Irrigation						
BAPA						
Water System						
Wholesale to Sister Coop						
Energy Recovered						
Others	29	36	43			
TOTAL	29910	33172	35537	37511	38500	40921

SALES PER TYPE OF CONSUMER (MWH)						
Residential	16740	18794	20895	24428	25947	28689
Commercial	2623	2716	3066	3872	4086	4261
Industrial	4671	5464	6095	6185	6279	7252
Public Bldg	836	944	986	1102	1239	1525
Street Lights	174	180	416	1006	925	596
Sale for Resale	25					
Large Load						
Irrigation						
BAPA						
Water System						
Wholesale to Sister Coop						
Energy Recovered						
Others	80	145	122			
TOTAL	25149	28243	31580	36593	38476	42323

Prepared by:
YOLANDA J. CHENILLA

Checked by:
ANA ROSA D. PAPA 4/26

DAVAO DEL SUR ELECTRIC COOPERATIVE, INC. (DASURECO)

A. BACKGROUND INFORMATION

Address	Cogon, Digos, Davao del Sur
Telephone Nos. / Fax Nos.	–
Date of Incorporation and Registration	June 1, 1975
Date of First Energization	November 1975

Officials	1998	1999	2000
General Manager	Engr. Jesus dela Victoria	Engr. Jesus dela Victoria	Engr. Jesus dela Victoria
President	Mr. Ethelwoldo B. Abbot	Mr. Ethelwoldo B. Abbot	Mr. Artemio Tahon

		1995	1996	1997	1998	1999	2000
B.	CATEGORY	A+	A+	A+	A+	A+	
	CLASSIFICATION	Large	Ex Large	Ex Large	Ex Large	Ex Large	
C.	STATUS OF MEMBERSHIP			46773		52178	55056

D. STATUS OF LOAN/SUBSIDY RELEASES (PM):
(Cumulative Total)

	1995	1996	1997	1998	1999	2000
Construction						
Total Approved Loan	219.2	219.2	214.5	214.5	202.2	202.2
Total Releases	83.4	90.2	89.9	99.6	104.9	104.2
Logistics						
Total Releases	–	–	0.4	0.4	0.4	2.6
Subsidy						
Total Releases	–	–	14.6	18.1	18.1	33.3
Mini-Hydro						
Total Releases	–	–	–	–	–	–
Dendro-Thermal						
Total Releases	–	–	–	–	–	–

E. STATUS OF LOAN REPAYMENTS (P'000) :
(Cumulative Total)

EQA	2254	2254	2507	2543	2577	2980
Total Amort Due	45076	54092	63937	74112	84221	94775
Total Payments	59123	67476	78640	92005	99682	113172
Repayments	45076	54092	63937	74112	84221	94775
Advance Payments	12017	11354	12673	14517	112	–
Payments Applied to Principal	2030	2030	2030	3376	15349	18397
Quarters in Arrears	–	–	–	–	–	0.00
Quarters in Advance	–	–	5.06	5.71	0.04	0.00
Repayments Rate	131%	125%	123%	124%	118%	119%

F. NPC POWER ACCOUNTS (P'000) :

						For the month of Dec 2000
Current	8256	9099	12026	14166	15554	21465
Overdue	–	–	–	–	–	–
Restructure	–	–	–	–	–	–
Months overdue	Current	Current	Current	Current	Current	Current
3% Prompt Payment Discount	–	–	352	–	498	640

G. STATUS OF ENERGIZATION : DASURECO

Municipalities	Barangays Coverage	1995	1996	1997	1998	1999	2000	%
1 Bansalan	25	12	13	14	16	16	16	64
2 Digos	26	23	23	23	25	25	26	100
3 Don Marcelino	15			1	1	1	2	13
4 Hagonoy	21	16	16	16	16	16	16	76
5 J. A. Santos	26	2	2	2	2	2	9	35
6 Kiblawan	30	7	7	8	10	12	12	40
7 Magsaysay	22	9	10	10	13	14	16	73
8 Malalag	15	9	10	10	10	10	10	67
9 Malita	30	10	11	11	13	15	19	63
10 Matanao	33	18	19	20	21	25	26	79
11 Padada	17	17	17	17	17	17	17	100
12 Sarangani	12			1	3	3	7	58
13 Sta. Cruz	18	13	13	13	14	15	15	83
14 Sta. Maria	22	8	8	10	12	12	12	55
15 Sulop	25	11	12	12	12	12	12	48
Total	337	155	161	168	185	195	215	64

Municipalities	Connections Potential	1995	1996	1997	1998	1999	2000	%
1 Bansalan	8965	4704	4991	5388	5752	6015	6321	71
2 Digos	19446	13876	15358	16519	17616	18489	19446	100
3 Don Marcelino	4870			25	138	412	482	10
4 Hagonoy	8047	3556	3811	4099	4312	4490	4655	58
5 J. A. Santos	4870	248	256	266	273	294	314	6
6 Kiblawan	5774	1060	1173	1284	1397	1522	1618	28
7 Magsaysay	7201	1893	2183	2691	2938	3170	3480	48
8 Malalag	5191	1947	2070	2249	2377	2496	2646	51
9 Malita	15590	3040	3189	3423	3731	4026	4271	27
10 Matanao	7547	2106	2431	2726	2997	3317	3632	48
11 Padada	4641	3739	3929	4141	4324	4494	4641	100
12 Sarangani	2630			30	313	314	323	12
13 Sta. Cruz	10269	5281	5669	6032	6421	6624	6894	67
14 Sta. Maria	7244	1812	1920	2154	2323	2441	2571	35
15 Sulop	4337	1509	1603	1792	1879	1953	2029	47
Total	116621	44771	48583	52819	56791	60057	63323	54

misd/planning

MANAGEMENT INFORMATION SERVICES DIVISION
Data Management and Monitoring Section

FINANCIAL AND STATISTICAL PROFILE
DAVAO SUR ELECTRIC COOPERATIVE, INC.

INCOME STATEMENT (P'000)	1995	1996	1997	1998	1999	2000
Gross Revenue	148181	165200	197474	246065	254934	302240
Power Cost	89152	105940	128201	163766	178432	215942
Non-Power Cost						
Transmission Expense						
Distribution Exp						
Operations Exp	6287	6145	6306	8312	7467	8793
Maintenance Exp	4800	7438	8023	11432	11105	12561
Consumer Accts Exp	8119	10182	11604	14395	12688	13415
Admin & Gen Expense	14310	15213	17071	23575	23757	24053
Total Operating Expense	122668	144918	171205	221480	233449	274764
Operating Margin	25513	20282	26269	24585	21485	27476
Depn & Amort Expense	9626	11328	13881	16456	18245	16814
Interest Expense	5780	6392	6972	6995	7402	7278
Net Operating Margin	10107	2562	5416	1134	-4162	3384
Other Revenues	2018	5285	7408	9858	7216	3191
Net Margin/Loss	12125	7847	12824	10992	3054	6575
MWH Generated						
MWH Purchased	65857	79023	91266	98561	98911	104190
Total	65857	79023	91266	98561	98911	104190
MWH Sold	58540	71533	82243	89051	88153	93822
Primary Voltage Discount (MWH)						
Coop Consumption (MWH)	241	238	312	293	276	311
Systems Loss	10.74%	9.18%	9.54%	9.35%	10.60%	9.65%
Peak Load (KW)	15783	17875	19899	20589	21600	23302
Load Factor	48%	50%	52%	55%	52%	51%
Collection Eff	97%	94%	93%	93%	90%	99%
Ave Systems Rate (P/KWH)	2.53	2.31	2.40	2.76	2.89	3.22
Ave Power Rate (P/KWH)	1.35	1.34	1.40	1.66	1.80	2.07
No. of Employees	222	225	227	227	235	265
Conn/Employee	172	186	202	217	225	207
CONNECTION PER TYPE OF CONSUMER (Actual Billed)						
Residential	32145	34992	38169	40975	42018	44346
Commercial	3486	3838	4033	4210	4307	4516
Industrial	205	219	244	247	261	261
Public Bldg	810	890	974	1090	1121	1212
Street Lights	1424	1925	2363	2711	3787	3201
Sale for Resale						
Large Load					1	1
Irrigation	15	16	15	16	16	15
BAPA					1230	1310
Water System	20	20	21	19	20	23
Wholesale to Sister Coop						
Energy Recovered						
Others						
TOTAL	38105	41900	45819	49268	52761	54885
SALES PER TYPE OF CONSUMER (MWH)						
Residential	23230	26921	31044	34610	35605	39149
Commercial	7442	8760	9685	9951	9934	11081
Industrial	23574	32184	35369	37613	31135	25620
Public Bldg	1277	1501	1756	2001	2141	2546
Street Lights	732	798	1157	1361	1425	1416
Sale for Resale						
Large Load					5393	10740
Irrigation	2109	1246	3093	3364	1947	2393
BAPA					426	678
Water System	176	123	139	151	147	199
Wholesale to Sister Coop						
Energy Recovered						
Others						
TOTAL	58540	71533	82243	89051	88153	93822

Prepared by:

GINA T. QUINDO
Sr. Prog. Planning & Dev't. Off. A

Noted by:

ANA ROSA D. PAPA
Data Management Chief B 4/26

MASBATE ELECTRIC COOPERATIVE, INC. (MASELCO)
Pinamarbuhan, Mobo, Masbate

A. BACKGROUND INFORMATION

Address	Pinamarbuhan, Mobo, Masbate
Telephone Nos. / Fax Nos.	(056)333-2105 Fax No. (056) 333-2360
Date of Incorporation and Registration	November 23, 1977
Date of First Energization	May 12, 1979

Officils	2000	2001
President	Mr. Filemon A. Bailon	Mr. Filemon A. Bailon
Gen Manager	Engr. Luvelindo I. Natividad (AGM)	Engr. Luvelindo I. Natividad (AGM)

	1995	1996	1997	1998	1999	
B. CATEGORY CLASSIFICATION	D Medium	D Medium	C Medium	C Medium	D Medium	
C. STATUS OF MEMBERSHIP			16687	17883	19165	2000 21256

D. STATUS OF LOAN RELEASES (PM)
(Cumulative Total)

	1995	1996	1997	1998	1999	2000
Construction						
Total Approved Loan	111.1	166.3	158.4	158.4	159.3	159.3
Total Releases	105.6	105.6	104.8	105.0	116.6	124.5
Logistics						
Total Releases			1.0	1.0	1.0	1.1
Subsidy						
Total Releases	32.7	40.05	56.4	53.4	60.6	63.9
Mini-Hydro						
Total Releases						
Dendro-Thermal						
Total Releases	0.3	0.3	0.3	0.3	0.3	0.3

E. STATUS OF LOAN REPAYMENTS (P'000) :
(Cumulative Total)

EQA	1345	826	884	896	1252	1614
Total Amort Due	22090	26778	30076	33625	37509	43046
Total Payments	23945	30591	34591	35591	36450	37550
Total Repayments	22090	26778	30076	33625	35619	36719
Advance Payments	1618	3014	3684	1135	-	-
Payments Applied to Principal	237	799	831	831	831	831
Quarters in Arrears	0	0	0	0	2	4
Quarters in Advance			4	1	0	0
Repayments Rate	108%	114%	115%	106%	97%	87%

F. NPC POWER ACCOUNTS (P'000)

Current	1745	2860	3726	3243	5360	7388
Overdue	4319	10593	12071	25655	-	19605
Restructure	-	-	-	-	18243	21153
Months overdue	3	4	3	8	0	3
3% Prompt Payment Discount						

G. STATUS OF ENERGIZATION : MASELCO

Municipalities	Barangays Coverage	Cumulative Total 1995	1996	1997	1998	1999	2000	%
1 Aroroy	41					1	5	12
2 Baleno	24	4	5	5	5	5	10	42
3 Balud	32						1	3
4 Cataingan	36	5	7	8	8	8	8	22
5 Cawayan	37		2	7	7	8	10	27
6 Dimasalang	20	6	6	6	6	6	7	35
7 Esperanza	20						4	20
8 Mandaon	26			1	2	7	8	31
9 Masbate	30	16	16	16	17	17	17	57
10 Milagros	27	10	11	11	11	11	12	44
11 Mobo	29	14	15	15	15	16	16	55
12 Palanas	24	5	5	5	5	5	8	33
13 Pio V. Corpuz	18		2	2	3	6	7	39
14 Placer	35	5	6	8	8	8	10	29
15 Uson	35	15	16	16	16	16	16	46
Total	434	80	91	100	103	114	139	32

Municipalities	Connections Potential							
1 Aroroy	9754						548	6
2 Baleno	2722	310	357	426	476	518	665	24
3 Balud	4784							
4 Cataingan	7815	653	771	894	968	1042	1112	14
5 Cawayan	7625		11	33	280	384	430	6
6 Dimasalang	3419	717	768	841	910	949	1020	30
7 Esperanza	2996						82	3
8 Mandaon	4792			4	25	419	516	11
9 Masbate	10940	6259	6768	7333	7825	8263	8594	79
10 Milagros	6109	769	845	942	1000	1075	1149	19
11 Mobo	4492	1084	1184	1331	1445	1537	1686	38
12 Palanas	4351	554	603	677	734	774	844	19
13 Piov. Corpuz	4049		65	238	291	361	476	12
14 Placer	7438	111	562	727	824	896	954	13
15 Uson	7275	1056	1235	1423	1543	1632	1764	24
Total	88560	11513	13169	14869	16321	17850	19840	22

MISD/PLANNING DEPARTMENT

MANAGEMENT INFORMATION SERVICES DIVISION
Data Management and Monitoring Section

FINANCIAL AND STATISTICAL PROFILE
MASBATE ELECTRIC COOPERATIVE, INC.

INCOME STATEMENT (P'000)	1995	1996	1997	1998	1999	2000
Gross Revenue	45572	51458	60948	70637	83816	102521
Power Cost	29884	34671	41340	47804	58008	76566
Non – Power Cost						
Transmission Exp						
Distribution Exp						
Operations Exp	1196	1547	1842	2256	2561	3567
Maintenance Exp	799	1231	2144	2849	2868	3444
Consumer Accts Exp	2035	2244	3645	4445	5670	7921
Admin & Gen Expense	5235	6006	7184	8597	10475	14309
Total Operating Expense	39149	45699	56155	65951	79582	105807
Operating Margin	6423	5759	4793	4686	4234	–3286
Depn & Amort Expense	2510	3189	3749	4438	4921	5637
Interest Expense	3042	1914	2098	1949	2210	5303
Net Operating Margin	871	656	–1054	–1701	–2897	–14226
Other Revenues	591	606	240	–2363	–3251	–3906
Net Margin Loss	1462	1262	–814	–4064	–6148	–18132
MWH Generated						
MWH Purchased	14932	17663	20724	23017	26143	30565
Total	14932	17663	20724	23017	26143	30565
MWH Sold	12139	13799	15795	17204	20552	23560
Primary Voltage Discount						
Coop Consumption (MWH)	151	67	42	52	62	104
Systems Loss	17.69%	21.50%	23.58%	25.03%	21.15%	22.58%
Peak Load (KW)	3225	4348	4850	4515	5990	6780
Load Factor	53%	46%	49%	58%	50%	51%
Collection Eff	79%	79%	91%	92%	90%	92%
Ave Systems Rate (P/KWH)	3.75	3.73	3.86	4.11	4.08	4.35
Ave Power Rate (P/KWH)	2.00	1.96	1.99	2.08	2.22	2.51
No. of Employees	81	129	131	154	137	182
Conn Employee	123	84	94	87	112	91
CONNECTION PER TYPE OF CONSUMER (Actual Billed)						
Residential	8972	9863	11251	12345	13478	15015
Commercial	634	615	622	684	811	936
Industrial	77	71	72	83	102	126
Public Bldg	203	220	248	260	285	356
Street Lights	61	64	56	40	607	45
Sale for Resale						
Large Load						
Irrigation						
BAPA						
Water System						
Wholesale to Sister Coop						
Energy Recovered						
Others						
TOTAL	9947	10833	12249	13412	15283	16478
SALES PER TYPE OF CONSUMER (MWH)						
Residential	7283	8738	9889	11062	13280	15242
Commercial	2299	2576	2808	3172	3701	4368
Industrial	1830	1710	2045	1941	2131	2351
Public Bldg	619	655	811	800	512	1132
Street Lights	108	120	79	74	574	153
Sale for Resale						
Large Load						
Irrigation						
BAPA						
Water System						
Wholesale to Sister Coop						
Energy Recovered			163	13	354	314
Others				142		
TOTAL	12139	13799	15795	17204	20552	23560

Prepared by:
YOLANDA J. CHENILLA 4/24/07

Checked by:
ANA ROSA O. PAPA 4/26

MANAGEMENT INFORMATION SERVICES DIVISION
Data Management and Monitoring Section

FINANCIAL AND STATISTICAL PROFILE
MASBATE ELECTRIC COOPERATIVE, INC.

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Non – Power Cost						
Transmission Exp						
Distribution Exp						
Operations Exp	1196	1547	1842	2256	2561	3567
Maintenance Exp	799	1231	2144	2849	2868	3444
Consumer Accts Exp	2035	2244	3645	4445	5670	7921
Admin & Gen Expense	5235	6006	7184	8597	10475	14309
Total Operating Expense	39149	45699	56155	65951	79582	105807
Operating Margin	6423	5759	4793	4686	4234	–3286
Depn & Amort Expense	2510	3189	3749	4438	4921	5637
Interest Expense	3042	1914	2098	1949	2210	5303
Net Operating Margin	871	656	–1054	–1701	–2897	–14226
Other Revenues	591	606	240	–2363	–3251	–3906
Net Margin Loss	1462	1262	–814	–4064	–6148	–18132
MWH Generated						
MWH Purchased	14932	17663	20724	23017	26143	30565
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MWH Sold	12139	13799	15795	17204	20552	23560
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Peak Load (KW)	3225	4348	4850	4515	5990	6780
Load Factor	53%	46%	49%	58%	50%	51%
Collection Eff	79%	79%	91%	92%	90%	92%
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Ave Power Rate (P/KWH)	2.00	1.96	1.99	2.08	2.22	2.51
No. of Employees	81	129	131	154	137	182
Conn Employee	123	84	94	87	112	91
CONNECTION PER TYPE OF CONSUMER (Actual Billed)						
Residential	8972	9863	11251	12345	13478	15015
Commercial	634	615	622	684	811	936
Industrial	77	71	72	83	102	126
Public Bldg	203	220	248	260	285	356
Street Lights	61	64	56	40	607	45
Sale for Resale						
Large Load						
Irrigation						
BAPA						
Water System						
Wholesale to Sister Coop						
Energy Recovered						
Others						
TOTAL	9947	10833	12249	13412	15283	16478
SALES PER TYPE OF CONSUMER (MWH)						
Residential	7283	8738	9889	11062	13280	15242
Commercial	2299	2576	2808	3172	3701	4368
Industrial	1830	1710	2045	1941	2131	2351
Public Bldg	619	655	811	800	512	1132
Street Lights	108	120	79	74	574	153
Sale for Resale						
Large Load						
Irrigation						
BAPA						
Water System						
Wholesale to Sister Coop						
Energy Recovered			163	13	354	314
Others				142		
TOTAL	12139	13799	15795	17204	20552	23560

Prepared by:

YOLANDA J. CHENILLA

Checked by:

ANA ROSA D. PAPA

Annex 7

Draft for DOE Consideration

DEPARTMENT CIRCULAR No. _____

ENCOURAGING PRIVATE SECTOR PARTICIPATION IN RURAL ELECTRIFICATION BY ALLOWING THIRD PARTY ENTRY INTO THE FRANCHISE AREAS OF ELECTRIC COOPERATIVES BY VIRTUE OF TEMPORARY WAIVER OF FRANCHISE IN SELECTED AREAS

WHEREAS, consistent with the national policy of economic growth with social equity, the Department of Energy (DOE) aims to improve access to energy by all sectors of society through the acceleration of rural electrification;

WHEREAS, the DOE, through NEA targets to energize 100% of barangays by year 2004;

WHEREAS, by virtue of their franchise, the ECs have the sole right and responsibility to provide adequate, dependable and reasonably priced electric services within their franchise areas;

WHEREAS, the ECs desire to extend electricity services to all barangays within their coverage; however, some ECs would not be able to economically extend their distribution lines, particularly to those located far from its existing grid without full government subsidies;

WHEREAS, the government lacks the necessary resources to continue granting full subsidy to support the expansion plans of ECs.

WHEREAS, the government wishes to optimize the use of its resources and leverage its funds with other non-government fund sources in the rural electrification sector;

WHEREAS, increased private sector and other third party participation in the rural electrification efforts is essential; and in order for this to take place, it is necessary to provide the legal means for third party access to the unserved areas within the EC franchises;

NOW THEREFORE, the DOE hereby adopts and promulgates the following policy directives for the rural electrification sector.

Section 1. *Entry of New Players.* New players may be allowed to provide energy services in the unserved areas of the EC franchises, provided that the EC franchise holders agree to such arrangement;

Section 2. *Franchise Waiver by ECs.* The entry of new players into the EC franchise areas shall be governed by a Franchise Waiver Agreement entered into between the EC and the Service Provider as approved by the National Electrification Commission/NEA.

Section 3. *Use of Standard Franchise Waiver Agreement.* To facilitate negotiations between parties, the ECs are encouraged to use the attached Standard Franchise Waiver Agreement (SFWA) in forging their agreements with new players.

Section 4. *Encouraging ECs to Allow Private Sector Participation.* NEA shall encourage the ECs to undertake the Franchise Waiver approach to allow private sector participation in their respective coverage areas, particularly, in selected sites, where ECs can no longer economically connect to the grid; Provided however, that if an interested party is willing, the EC may also consider waiving its franchise for selected areas which are already connected to the grid but continued operation, of which, is a financial burden to the EC.

Section 6. *Conduct of Information Drive.* In support of this policy direction, the NEA is directed to conduct appropriate information drive among ECs to disseminate this new policy and encourage ECs to use the SFWA.

Section 7. *Review of Franchise Agreements.* It is recognized that over the last thirty years, there have been significant changes in the economic and physical developments in each of the franchise areas that justifies the need to review the franchises granted to ECs. For this reason, the NEA is therefore directed to review all existing franchises for the purpose of determining the need to re-modify said franchises based on current condition of the EC and the franchise area itself. If such need is found to be inherently beneficial, the NEA shall then proceed to prepare an implementation plan for undertaking an appropriate franchise reform program.

Section 8. This Circular shall take effect immediately a day after its complete publication in at least two (2) newspapers of general circulation.

Fort Bonifacio, Taguig, Metro Manila _____, 2001

_____
Secretary
Department of Energy

Gsy/draft DOE Circular/4-26-01