REDEO
RURAL ELECTRIFICATION
DECENTRALIZED ENERGY OPTIONS

EC-ASEAN Energy Facility
Project Number 24

REPORT FOR ACTIVITY 5

RURAL ELECTRIFICATION PLANNING FRAMEWORKS IN THE PHILIPPINES

OCTOBER 2004

Disclaimer

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I. Objective

Several studies on the prospects of the utilization of hydropower in the Philippines have been conducted. These studies have indicated that there is a great potential for hydro development in the country. However, majority of these sites have not been pursued due to lack of funding support. Without a well-crafted financing design, these areas will remain to be untapped.

Hence, this assessment intends to move a step forward. In the process, it will review and analyze the organization and institutional aspects in the Philippines in order to formulate an innovative financing scheme that could sustain the implementation of a hydro project in collaboration with the private sector. The successful pilot-testing of this financing scheme would ultimately pave the way towards poverty alleviation and rural electrification, in partnership with the private sector, which are among the top priorities of the government.

II. Evolution of the Power Industry: Organization

A. Overview of the Power Industry

Before the passage of the Electric Power Industry Reform Act (EPIRA), the bulk of the country's power was generated by the National Power Corporation (NPC) and various privately owned independent power producers (IPPs). Transmission and sub-transmission were the responsibility of NPC. Thus, NPC wholesaled electricity to distributors and to large industrial customers directly connected to the grid. Distribution and supply of electricity is handled by 139 distributors, consisting of 20 private investor owned utilities (PIOUs) and 119 member owned electric cooperatives (ECs), that have an exclusive distribution to a franchise area. Regulation of electricity prices was handled by the Energy Regulatory Board (ERB) which was under the auspices of the Department of Energy (DOE). While the National Electrification Administration (NEA) regulates the governance of all ECs, provides loans for capital development, grants and subsidy support to the ECs. In addition, NEA grants franchises to ECs and takes over the management of poor performing ECs.

The Electric Power Industry Reform Act (EPIRA) known as Republic Act 9136 was signed into law on June 28, 2001 by President Gloria Macapagal-Arroyo. The Implementing Rules and Regulations (IRR) followed suit on February 27, 2003. The law enabled the enhancement of the global competitiveness of our electricity industry participants, lower power rates and provide better service to the end-users through restructuring of the industry.

Under the EPIRA, the following are the policies to be pursued:

1. To ensure and accelerate the total electrification of the country;

2. To ensure the quality, reliability, security and affordability of the supply of the electric power;
3. To ensure transparent and reasonable prices of electricity in a regime of free and fair competition and full public accountability to achieve greater operational and economic efficiency, promote consumer choice and enhance the competitiveness of Philippine products in the global market;
4. To enhance the inflow of private capital, participation in the attendant risks and broaden the ownership base of the power generation, transmission and distribution sectors;
5. To ensure fair and non-discriminatory treatment of public and private sector entities in the process of restructuring the electric power industry;
6. To protect the public interest as it is affected by the rates and services of electric utilities and other providers of electric power;
7. To assure socially and environmentally compatible energy sources and infrastructure;
8. To promote the utilization of indigenous and new and renewable energy resources in power generation in order to reduce dependence on imported energy;
9. To provide for an orderly and transparent privatization of the assets and liabilities of the NPC;
10. To establish a strong and purely independent regulatory body and system to ensure consumer protection and enhance the competitive operation of the electricity market; and
11. To encourage the efficient use of energy and other modalities of Demand Side Management (DSM).

B. Industry Situationer Report

The country's installed generation capacity currently as of December 2003 stood at 15,123 MW, while the dependable capacity at 13,404 MW (Figure 1). At a country level, the supply of electricity is sufficient to supply the country's peak demand at 8,509 MW. However, the archipelagic structure of the country entails interconnection of the major islands to augment the power deficit in particular areas. Luzon is connected to Visayas with a transfer capacity of 440 MW. Within the island of Visayas, the major interconnections are Leyte-Cebu with a transfer capacity of 200 MW, Cebu-Negros at 100 MW, Negros-Panay at 100 MW, and Leyte-Bohol at a capacity of 40 MW.

In terms of power plants, there is a balance mix. However, plants based on fossil fuel dominate, led by coal contributing 26% of the total installed capacity and which are mostly located in Luzon. Likewise, natural gas contributed a substantial 18%. Meanwhile, hydro which is the major source of electricity in Mindanao, contributed 19%, while geothermal plants contributed 13%.

The electricity from the transmission lines are distributed by 139 distribution utilities composed of 119 electric cooperatives, 18 private utilities and 1 LGU-operated distribution utility to the residential, commercial and industrial customers.

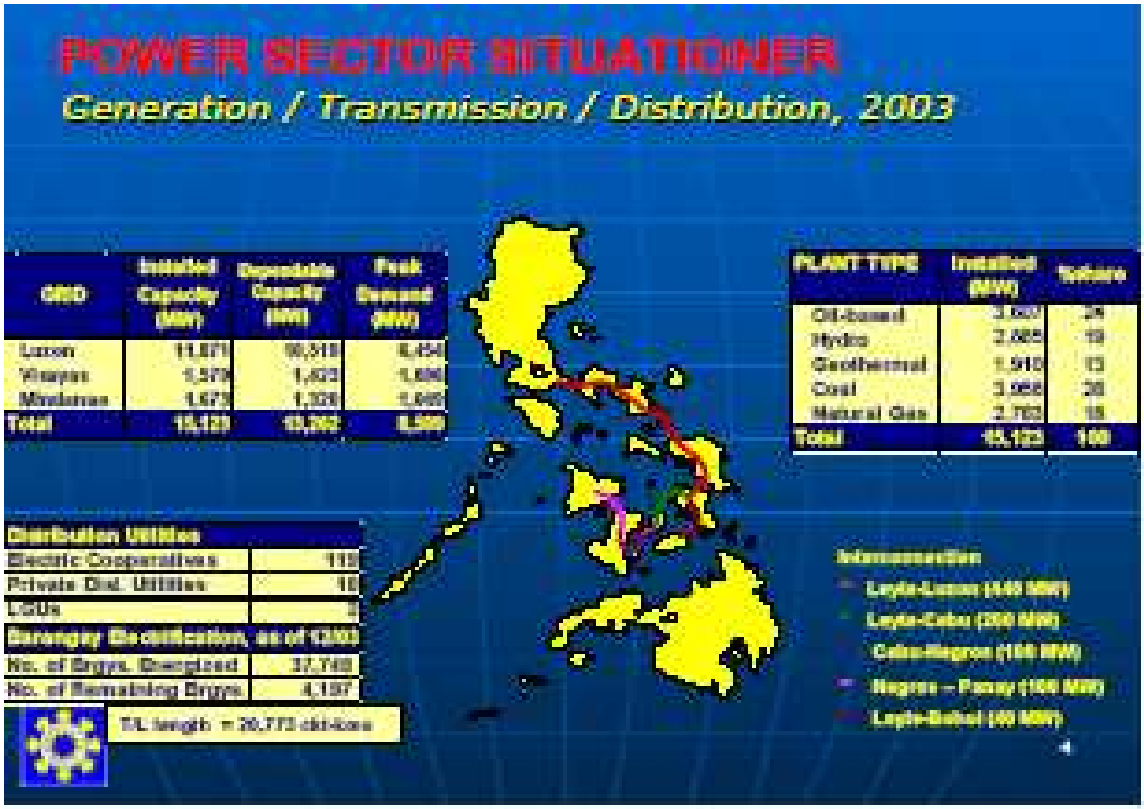

Figure 1. Industry Situationer (2003)
Source: DOE

In terms of capacity mix (Table 1), Luzon remains dependent on fossil fuel while Visayas and Mindanao rely mainly on indigenous fuel. In 2003, coal accounted for 32% of the capacity mix in Luzon followed by natural gas at 23%. In the Visayas grid, geothermal comprised 56%, while Mindanao utilized 60% hydro. At the country level, the coal dominated at 26% while hydro and natural gas followed next at 19% and 18%, respectively.

Table 1. Generation Capacity Mix

	Installed Capacity (In MW)							
	Diesel	Hydro	Gas Turbine	Coal	Geothermal	Natural Gas	Oil Thermal	Total
Luzon								
NPC	-	1,243		1,200	890		650	3,983
NPC-IPP	589	592	900	2,058	16	1,200	-	5,355
Non-NPC	375	22	-	511	2	1,563	-	2,473
Total	964	1,858	900	3,769	907	2,763	650	11,812
% Share	8%	16%	8%	32%	8%	23%	6%	100%
Visayas								
NPC	230	2	55	109	305	-	-	702
NPC-IPP	34	-	-	80	611	-	-	725
Non-NPC	211	10	-	-	-	-	-	220
Total	475	12	55	189	916	-	-	1,647
% Share	29%	1%	3%	11%	56%	0%	0%	100%
Mindanao								
NPC	-	987	-	-	-	-	-	987
NPC-IPP	472	-	-	-	108	-	-	580
Non-NPC	88	10	-	-	-	-	-	98
Total	559	998	-	-	108	-	-	1,665
% Share	34%	60%	0%	0%	7%	0%	0%	100%
Philippines								
NPC	230	2,233	55	1,309	1,195	-	650	5,672
NPC-IPP	1,095	592	900	2,138	735	1,200	-	6,661
Non-NPC	674	42	-	511	2	1,563	-	2,791
Total	1,999	2,867	955	3,958	1,932	2,763	650	15,123.98
% Share	13%	19%	6%	26%	13%	18%	4%	100%

In the market share (Figure 2), the state-owned NPC remains the dominant player in the generation business considering the monopolistic environment in the electric power industry prior to the passage of EPIRA. With the passage of the EPIRA in 2001, the government is pursuing the privatization of NPC generation assets to enhance the inflow of private capital and broaden the ownership base of the power generation. The EPIRA, however, restricts ownership, operation or control by a single entity to 30% of the installed generating capacity within the grid or 25% at the national level to promote true market competition and prevent harmful monopoly and market power abuse.

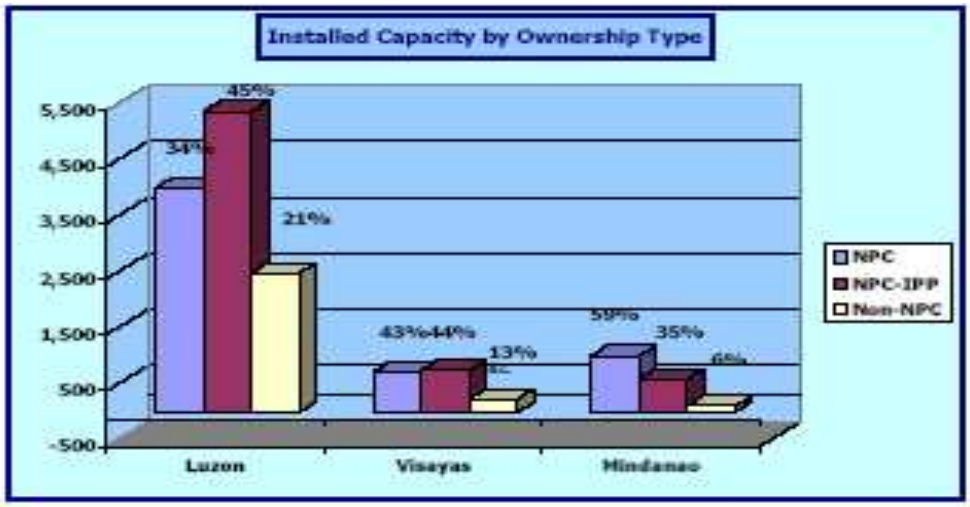

Figure 2. Installed Capacity by Ownership Type

C. Thrusts of RA 9136: Restructuring and Privatization

Restructuring necessitates changing the existing over-all structure of the electricity industry and involves mainly the separation or "unbundling" of an integrated industry to encourage competition in the generation and supply sectors. Where competition cannot be present, regulation will take the reins for the protection of the consumers, thus the distribution and transmission sectors will remain regulated being natural monopolies.

Privatization of the National Power Corporation (NPC) will entail splitting it into several generation companies to be grouped in a manner that will promote the profitability and viability of the resulting units. This is done to ensure economic efficiency, encourage competition and foster reasonable power rates. The creation of several generation companies (GENCOS) will provide a competitive environment essential in bringing down power rates and making service more efficient.

D. Reforms in the Different Sectors of the Power Industry

The EPIRA mandated the restructuring of the industry into four functionally separate sectors, namely; generation, transmission, distribution and supply.

Generation
Generation will no longer be considered a public utility operation and will now be open to competition. However, a generating facility shall comply with the technical, financial and environmental standards set by the Energy Regulatory Commission (ERC).

Transmission
The law provides for the creation of a National Transmission Company (TRANSCO) as part of the process of separating the generation and transmission functions of NPC. TRANSO will operate NPC's high voltage transmission and subtransmission functions and its charges are regulated by the ERC. It will be privatized either through direct sale or through a concessionaire and will provide open and non-discriminatory access to all users of the transmission system.

Distribution
The distribution of power to end-users shall continue to be undertaken by distribution utilities in a specific geographic area. Because of a competitive retail supply sector, distribution utilities will have to provide open and non-discriminatory access to users of distribution wires and charge wheeling rates to be determined by the ERC.

Electric Cooperatives
Electric cooperatives should adopt a corporate structure that will promote increased accountability to the consumers as well as the infusion of private capital. Under the law, an electric cooperative may either convert into a stock

cooperative under the Cooperative Development Authority, a stock corporation under the Corporation Code, or maintain a status quo

Supply

The supply of electricity to end-users requires an ERC's license except for supply by distribution utilities within their franchise areas and persons authorized to supply electricity within their respective ECs. A supplier may be a generation company, an affiliate of a distribution utility, aggregator, IPP administrator or any person authorized by ERC to engage in the selling, brokering or marketing of electricity to the market. Related to this, the Wholesale Electricity Spot Market (WESM) shall be established to serve as a venue for the trading of electricity in a competitive market.

E. New Structure of the Electric Industry

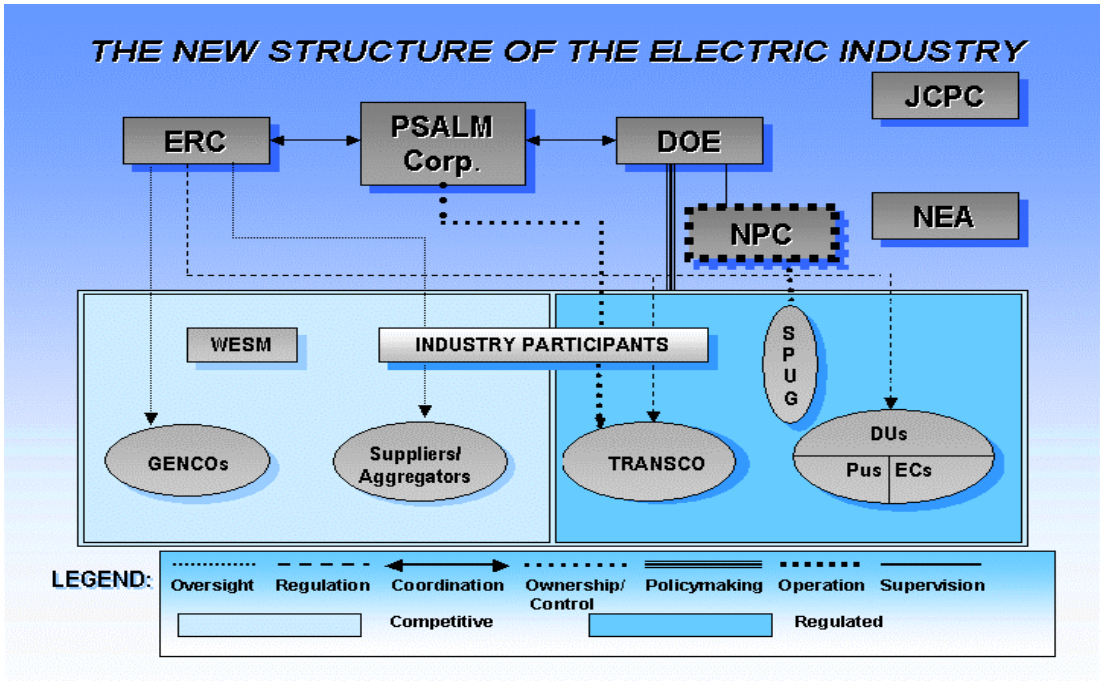

Figure 3. New Structure of the Electric Industry

DOE	-	Department of Energy
DU	-	Distribution Utility
EC	-	Electric Cooperative
ERC	-	Energy Regulatory Commission
GENCO	-	Generating Company
JCPC	-	Joint Congressional Power Commission
NEA	-	National Electrification Administration
NPC	-	National Power Corporation
PSALM	-	Power Sector Assets and Liabilities Management Corporation

PU	-	Private Utility
SPUG	-	Small Power Utilities Group
TRANSCO	-	National Transmission Company
WESM	-	Wholesale Electricity Spot Market

Under the new structure, the Wholesale Electricity Spot Market (WESM) shall be created and will be under the oversight of an Energy Regulatory Commission (ERC) that is an independent quasi-judicial, quasi-legislative body established by EPIRA. ERC's wide powers allow it to set viable power tariffs, regulate grid operations, and license all power generators and distributors.

NPC's assets will be privatized and its function will now only be as operator of the Small Power Utilities Group (SPUG) which will be responsible for missionary electrification. Further, two new Government-owned corporations were created, namely, PSALM and TRANSCO. PSALM, will take possession of all existing NPC generation assets, liabilities, IPP contracts, real estate and other disposable assets and will manage the orderly sale, disposition and privatization of all these assets. While TRANSCO will take over the transmission and sub-transmission assets of NPC but will be wholly owned by PSALM. The detailed roles of each agency are fully described in the following section.

F. Responsibilities of DOE, NEA, PSALM, NPC and ERC in a Restructured Industry

Responsibilities of the DOE

The Department of Energy (DOE) will continue to be the policymaking body in the industry, ensuring that all work is done in accordance with the thrust and objectives of the law. It will oversee the implementation of the restructuring of the industry and ensure that there is a reliable and adequate supply of electricity.

DOE spearheaded the drafting and promulgation of the Implementing Rules and Regulations of the Act in consultation with concerned government agencies and industry participants, non-government organizations and end-users. It is also tasked to establish within one year the Wholesale Electricity Spot Market (WESM)) especially the Market Rules that will set the mechanism for electricity trading and determination of the market price of electricity.

In addition to its existing powers and functions, the DOE shall supervise the Restructuring of the electricity industry and perform the following functions:

- Formulate policies for the planning and implementation of a comprehensive program for the efficient supply and economical use of energy consistent with the approved national economic plan and with the policies on environmental protection and conservation and maintenance of ecological balance, and provide a mechanism for the integration, rationalization, and coordination of the various energy programs of the Government;

- Develop and update annually the existing Philippine Energy Plan, hereinafter referred to as PEP, which shall provide for an integrated and comprehensive exploration, development, utilization, distribution, and conservation of energy resources, with preferential bias for environment-friendly, indigenous, and low-cost sources of energy. The PEP shall include a policy direction towards the Privatization of government agencies related to energy, deregulation of the power and energy industry, and reduction of dependency on oil-fired plants. Said PEP shall be submitted to Congress not later than the fifteenth (15^{th}) day of September and every year thereafter;

- Prepare and update annually a Power Development Program (PDP) and integrate the same into the PEP. The PDP shall consider and integrate the individual or joint development plans of the transmission, generation, and distribution sectors of the electric power industry which are submitted to the DOE: *Provided, however,* That the ERC shall have exclusive authority covering the Grid Code and Distribution Code and the pertinent rules and regulations it may issue. The DOE, following its approval of the Transmission Development Plan (TDP) prepared by the National Transmission Corporation (TRANSCO) or its Buyer or Concessionaire, shall integrate the TDP with the annual development plans of Distribution Utilities and NPC, and other relevant data as are available to DOE, which shall be incorporated in the PEP;

- Ensure the reliability, quality and security of supply of electric power;

- Following the Restructuring of the electricity sector, the DOE shall, among others:

    - Encourage private sector investments in the electricity sector and promote development of indigenous and Renewable Energy Sources including small-scale renewable energy generating sources;

    - Facilitate and encourage reforms in the structure and operations of Distribution Utilities for greater efficiency and lower costs;

    - In consultation with other government agencies, promote a system of incentives to encourage Electric Power Industry Participants, including new Generation Companies and End-users, to provide adequate and reliable electric supply; and

    - Undertake, in coordination with the ERC, NPC, NEA and the Philippine Information Agency (PIA), information campaigns to educate the public on the Restructuring of the electricity sector and Privatization of NPC assets;

- Jointly with the Electric Power Industry Participants, establish the Wholesale Electricity Spot Market (WESM) and formulate the detailed rules governing the operations thereof;

- Establish and administer programs for the exploration, transportation, marketing, distribution, utilization, conservation, stockpiling, and storage of energy resources of all forms, whether conventional or non-conventional;

- Exercise supervision and control over all government activities relative to energy projects in order to attain the goals embodied in Section 2 of Republic Act No. 7638;

- Develop policies and procedures and, as appropriate, promote a system of energy development incentives to enable and encourage Electric Power Industry Participants to provide adequate capacity to meet demand including, among others, reserve requirements;

- Monitor private sector activities relative to energy projects in order to attain the goals of the Restructuring, Privatization, and modernization of the electric power sector as provided for under existing laws: *Provided*, That the DOE shall endeavor to provide for an environment conducive to free and active private sector participation and investment in all energy activities;

- Assess the requirements of, determine priorities for, provide direction to, and disseminate information resulting from energy research and development programs for the optimal development of various forms of energy production and utilization technologies;

- Formulate and implement programs, including a system of providing incentives and penalties, for the judicious and efficient use of energy in all energy-consuming sectors of the economy;

- Formulate and implement a program for the accelerated development of non-conventional energy systems and the promotion and commercialization of its applications;

- Devise ways and means of giving direct benefit to the province, city, or municipality, especially the community and people affected, and equitable preferential benefit to the region that hosts the energy resource and/or the energy-generating facility: *Provided, however,* That the other provinces, cities, municipalities, or regions shall not be deprived of their energy requirements;

- Encourage private enterprises engaged in energy projects, including corporations, cooperatives, and similar collective organizations, to broaden the base of their ownership and thereby encourage the widest public ownership of energy-oriented corporations;

- Formulate such rules and regulations as may be necessary to implement the objectives of the Act;

- As part of the reportorial requirements of the Act, the DOE shall prepare and submit to the Power Commission a semi-annual report on the status of the implementation of the Act on or before the last week of April and October of each year. Towards this end, the DOE may require reports or documents from the Electric Power Industry Participants as necessary to facilitate compliance with this mandate and subject to appropriate measures to preserve the confidentiality of proprietary or commercially sensitive information; and

- Exercise such other powers as may be necessary or incidental to attain the objectives of the Act.

Responsibilities of the NPC

The National Power Corporation (NPC) will continue to undertake the missionary electrification of the country and the operation of unsold generating assets of Power Sector Assets Liabilities Management Corporation (PSALM). The thrust of the government therefore in bringing electricity to off-grid and isolated areas will not be jeopardized by the privatization of NPC, but rather improved through the provision of universal charge to all end-users of electricity for missionary electrification.

More specifically, NPC will have the following functions:

- Pursuant to Section 70 of the Act, notwithstanding the divestment and/or Privatization of NPC assets, IPP contracts and spun-off corporations, NPC shall remain as a National Government-owned and –controlled corporation to perform the missionary electrification function through the Small Power Utilities Group (SPUG) and shall be responsible for providing power generation and its associated power delivery systems in areas that are not connected to the transmission system. The missionary electrification function shall be funded from the revenues from sales in missionary areas and from the Universal Charge to be collected from all electricity End-users as determined by the ERC.

- NPC shall manage under existing arrangements, an environmental charge equivalent to P0.0025 per kilowatt-hour (kWh) sales, intended solely for the rehabilitation and management of watersheds nationwide.

- NPC shall continue to operate Agus and Pulangui complexes, which shall be owned by PSALM.

- NPC/PSALM may continue to generate and sell electricity only from the undisposed generating assets and IPP contracts of PSALM. NPC/PSALM shall not incur any new obligations to purchase power through bilateral contracts with Generation Companies or other Suppliers.

Responsibilities of the NEA

To promote rural electrification in the country, the National Electrification Administration (NEA) was given additional mandate, such as:

- NEA shall continue to be under the supervision of the DOE and shall exercise its functions under Presidential Decree No. 269, as amended by Presidential Decree No. 1645 insofar as they are consistent with the Act. To this end, NEA shall develop and implement programs:

(i) To prepare Electric Cooperatives (ECs) in operating and competing under the deregulated electricity market within five (5) years from the effectivity of the Act, specifically in an environment of Open Access and retail wheeling and Retail Competition;

(ii) To strengthen the technical capability and financial viability of ECs, through the following activities:

(1) NEA may offer services to the ECs other than those related to its lending functions, for a fee duly approved by the NEA Board of Administrators; and

(2) NEA may consider hiring qualified external industry management experts and shall provide their services to the ECs: *Provided*, That such services will not increase Retail Rates.

(iii) To review and upgrade regulatory policies with a view to enhancing the viability of the ECs as electric utilities.

- NEA may, in exchange for adequate security and a guarantee fee, act as a guarantor for purchases of electricity in the WESM by any EC or small Distribution Utility to support their credit standing consistent with the provisions of the Act. For this purpose, the authorized capital stock of NEA is hereby increased to Fifteen Billion Pesos (P15,000,000,000.00).

- NEA shall submit the report of ECs on their outstanding uncollected billings due from any local government unit (LGU) to the Department of Budget and Management (DBM) pursuant to Executive Order (E.O.) No. 190 issued on 21 December 1999. The DBM shall effect withholding from the Internal Revenue Allotment (IRA) of the concerned LGU: *Provided,* That there is a Memorandum of Agreement (MOA) executed between the LGU and NEA: *Provided, further*, That the uncollected billings are supported by a certification issued by the Municipality/City or Provincial Treasurer.

Responsibilities of the ERC

The Energy Regulatory Commission (ERC) is granted broader powers to become a strong and independent regulator that will be able to promote competition in the industry and ensure the consumer's protection. It will regulate both the TRANSCO and the distribution utilities and monitor the conduct of competitive businesses such as the generation companies and the suppliers of electricity.

The ERC will enforce the rules governing the operation of the wholesale electricity spot market and determine, fix, and approve a universal charge to be collected from end-users. It

will likewise promulgate rules for the De-monopolization and Shareholding Dispersal, Grid and Distribution Codes and Competition Rules.

- ERC shall have the responsibility of promoting competition, encouraging market development, ensuring customer choice, and penalizing abuse of market power in the electric power industry.

- ERC shall promulgate such rules and regulations as authorized thereby, including but not limited to Competition Rules and limitations on recovery of system losses, and shall impose fines or penalties for any non-compliance with or breach of the Act, these Rules and the rules and regulations which it promulgates or administers.

- ERC shall review and approve any plan for the expansion or improvement of transmission facilities submitted by TRANSCO or its Buyer or Concessionaire with due regard to the TDP.

    (a) To promote efficiency and non-discrimination, the ERC, after the conduct of public hearings, shall determine, fix and approve Transmission and Distribution Wheeling Charges, and Retail Rates through an ERC established and enforced methodologies setting the same. It shall fix and regulate the rates and charges to be imposed by Distribution Utilities on their Captive Market as well as the Universal Charge to be imposed on all electricity End-users including self-generating entities.

- Any application or petition for rate adjustment or for any relief affecting the consumers must be verified, and accompanied with an acknowledgement of receipt of a copy thereof by the LGU Legislative Body of the locality where the applicant or petitioner principally operates together with the certification of the notice of publication thereof in a newspaper of general circulation in the same locality.

- The ERC may grant provisionally or deny the relief prayed for not later than seventy five (75) calendar days from the filing of the application or petition, based on the same and the supporting documents attached thereto and such comments or pleadings the consumers or the LGU concerned may have filed within thirty (30) calendar days from receipt of a copy of the application or petition or from the publication thereof as the case may be.

- Thereafter, the ERC shall conduct a formal hearing on the application or petition, giving proper notices to all parties concerned, with at least one public hearing in the affected locality, and shall decide the matter on the merits not later than twelve (12) months from the issuance of the aforementioned provisional order.

- This Section 4(e) shall not apply to those applications or petitions already filed as of 26 December 2001 in compliance with Section 36 of the Act.

- Amend or revoke, after due notice and hearing, the authority to operate of any Person or entity which fails to comply with the provisions of the Act, these Rules or any order or resolution of the ERC. In the event a divestment is required, the ERC shall allow the affected party sufficient time to remedy the infraction or for an orderly disposal, but shall in no case exceed twelve (12) months from the issuance of the order.

- In order to facilitate the provision of an efficient, reliable and quality service to End-users, the ERC shall promulgate a Grid Code and a Distribution Code that shall include performance standards and the minimum financial capability standards and other terms and conditions for access to and use of the transmission and distribution facilities within six (6) months from the effectivity of the Act.

- Act on applications for cost recovery and return on DSM.

- ERC shall set the criteria for eligibility and authorize eligible Generation Companies, Distribution Utilities, Suppliers, IPP Administrators, End-users and other entities authorized by ERC in accordance with the Act for membership in the WESM. For the purpose of ensuring a greater supply and rational pricing of electricity, the ERC shall enforce the rules and regulations governing the operations of WESM and the activities of the WESM Operator and other WESM Participants. In cases of national and international security emergencies or natural calamities, it can suspend spot market operations within the WESM.

- ERC shall ensure that Electric Power Industry Participants and NPC functionally and structurally unbundle their respective business activities and rates and determine the levels of cross subsidies in the existing Retail Rates until the same is removed in accordance with the sectors as identified in and as required by Sections 5, 36 and 74 of the Act. ERC shall set a Lifeline Rate for the Marginalized End-users. In particular, the distribution rates should unbundle at least the following business activities or assets: supply, distribution, and such other services as the ERC may determine.

- ERC shall promulgate rules and regulations prescribing the qualifications of Suppliers, which shall include among others their technical and financial capability and credit worthiness.

- ERC shall determine the electricity End-users comprising the Contestable and Captive Markets. The ERC shall also seek to foster competition in credit, collection and metering services in Contestable Markets. It shall likewise license Suppliers to Contestable Markets.

- ERC shall perform such other regulatory functions as are appropriate and necessary in order to ensure the successful Restructuring and modernization of the electric power industry, such as, but not limited to, the rules and guidelines under which Generation Companies, Distribution Utilities, which are not publicly listed, shall offer and sell to the public a portion not less than fifteen percent (15%) of their common shares of stocks: *Provided, however,* That Generation Companies, Distribution Utilities or their respective

holding companies that are already listed in the Philippine Stock Exchange (PSE) are deemed in compliance. For existing companies, such public offering shall be implemented not later than five (5) years from the effectivity of the Act. New companies shall implement their respective public offerings not later than five (5) years from the issuance of their Certificate of Compliance (COC);

- The Act states that the distribution of electricity to end-users shall be a regulated common carrier business requiring a national franchise. Distribution of electric power to all end-users may be undertaken by private distribution utilities, cooperatives, local government units presently undertaking this function and other duly authorized entities, subject to regulation by the ERC. *Distribution Utility refers to any electric cooperative, private corporation, government-owned utility or existing local government unit which has an exclusive franchise to operate a Distribution System in accordance with its franchise and the Act.*

  Pursuant to Section 59 of the Act, the provision of electric service in remote and the distribution utility is unable to service for any reason shall be opened to other qualified third parties. The provision of electricity in unviable areas by qualified third parties (QTP) shall be a regulated business.

- ERC shall have the original and exclusive jurisdiction over all cases contesting rates, fees, fines and penalties imposed in the exercise of its powers, functions and responsibilities and over all cases involving disputes between and among participants or players in the energy sector relating to the foregoing powers, functions and responsibilities.

- It shall also be empowered to issue such other rules that are essential in the discharge of its functions as an independent quasi-judicial body.

- All actions taken by the ERC pursuant to the Act are subject to judicial review and the requirements of due process and the cardinal rights and principles applicable to quasi-judicial bodies.

- ERC may require reports or documents from the Electric Power Industry Participants as necessary to facilitate compliance with the Act, subject to appropriate measures to preserve the confidentiality of proprietary or commercially sensitive information.

- All notices of hearings to be conducted by the ERC for the purpose of fixing rates or fees shall be published at least twice for two (2) successive weeks in two (2) newspapers of nationwide circulation.

- ERC shall conduct rate application hearings in the locality where the applicant is conducting its operations: *Provided*, That this requirement shall not apply to applications filed pursuant to Section 36 of the Act.

Responsibilities of the PSALM

The Power Sector Assets Liabilities Management Corporation (PSALM or PSALM Corp.) was created for the purpose of managing the efficient disposal of NPC assets as well as restructuring the NPC loans. It will be the administrator of the Universal Charge and will also assume the existing loans of electric cooperatives with all government agencies, including the NEA granted that these loans were used for rural electrification.

- PSALM shall take ownership of all existing NPC generation assets, liabilities, IPP contracts, real estate and all other disposable assets. All outstanding obligations of NPC arising from loans, issuances of bonds, securities and other instruments of indebtedness shall be transferred to and assumed by PSALM.

- The PSALM shall formulate and implement a program for the sale and Privatization of the NPC assets and IPP contracts and the liquidation of NPC Debts and Stranded Contract Costs in accordance with the Act.

- It shall calculate the amount of the Stranded Debts and Stranded Contract Costs of NPC, which amount shall form part of the Universal Charge to be determined, fixed, and approved by the ERC.

- PSALM shall assume all outstanding financial obligations of ECs to NEA and other government agencies arising from their respective Rural Electrification Program. This shall be done in accordance with the program duly approved by the President of the Philippines.

G. Role of Local Government Units

The role of Local Government Units (LGUs) in the power industry is explicitly stipulated in Section 5 (i) of Republic Act No, 7638 (Creation of DOE) that states that DOE shall:

(i) *Devise ways and means of giving direct benefit to the province, city, or municipality, especially the community and people affected, and equitable preferential benefit to the region that hosts the energy resource and/or the energy-generating facility: Provided, however, That the other provinces, cities, municipalities, or regions shall not be deprived of their energy requirements;*

Further, Section 66 of Republic Act No. 9136 (EPIRA) identified the additional functions of the LGUs:

SEC. 66. Benefits to Host Communities. – The obligations of generation companies and energy resource developers to communities hosting energy generating facilities and/or energy resource developers as defined under Chapter II, Sections 289 to 294 of the Local Government Code and Section 5(i) of Republic Act No. 7638 and their implementing rules and regulations and applicable orders and circularsconsistent with this Act shall continue: Provided, That the obligations mandated under Chapter II, Section291 of Republic Act No. 7160, shall apply to privately-owned corporations or entities utilizing the national wealth of the locality.

To ensure the effective implementation of the reduction in cost of electricity in the communities where the source of energy is located, the mechanics and procedures prescribed in the Department of the Interior and Local Government (DILG)-DOE Circulars No. 95-01 and 98-01 dated October 31, 1995 and September 30, 1998, respectively and other issuances related thereto shall be pursued.

Towards this end, the fund generated from the eighty percent (80%) of the national wealth tax shall, in no case, be used by any local government unit for any purpose other than those for which it was intended.

In case of any violation or noncompliance by any local government official of any provision thereof, the DILG shall, upon prior notice and hearing, order the project operator, through the DOE, towithhold the remittance of the royalty payment to the host community concerned pending completion of theinvestigation. The unremitted funds shall be deposited in a government bank under a trust fund.

III. Rural Electrification Program

A. Background

The NEA is the primary agency tasked to implement the Philippine Rural Electrification Program of the country. In 1998, NEA reported that the electrification program reached 72% of 36,018 barangays and 63% of the 7.5 million connections due to the fact that most of the unelectrified barangays are found in island communities or inaccessible hinterlands.

In response to this concern, the government refocused its long term energization objective to provide the rural sector more opportunities for development by strengthening the rural development programs. The DOE launched the energization program dubbed as the Energy Resources for the Alleviation of Poverty which was later coined as the Accelerated Barangay Electrification Project (ABEP). The ultimate goal of the program was to accelerate to 100% barangay level electrification by 2008 or 90% barangay level by 2004 of rural and remote areas utilizing renewable energy sources.

In 2000, this program transformed into the O'Ilaw Program that aimed at achieving 100% barangay electrification by 2006 through a multi-sector approach involving the private sector. In this phase, all the energization efforts of the different agencies such as NEA, NPC and PNOC were integrated and coordinated by DOE. It also encouraged the greater participation

of private organizations, business communities including independent power producers through the "advance financing" and "adopt-a-barangay" schemes.

Since the EPIRA has provided a new framework (Figure 4), the O'Ilaw program metamorphosed into the Expanded Rural (ER) Electrification Program on April 2003. Basically, the ER Program was conceptualized to enhance the overall rural electrification program of the country. More specifically, the ER program aims to accelerate electrification through enhanced public/private partnership consistent with EPIRA's provisions on rural or missionary electrification; implement new mechanisms and provide innovative approaches to enhance operational efficiency and sustain services in connected areas; promote cost-effective uses of new and renewable energy for the provision of electricity in remote and unviable areas; recommend policy directions and guidelines on the implementation of the program; and integrate all efforts and initiatives of the government and private sector to achieve 100% barangay electrification by 2006 and 90% household electrification by 2017. Further, the program includes the electrification of unenergized sitios to widen access to electricity. In addition, to the previous programs, funds from the missionary electrification component of the universal charge will be used to leverage private-public sector funding for the purpose of providing electricity to the remaining unenergized barangays.

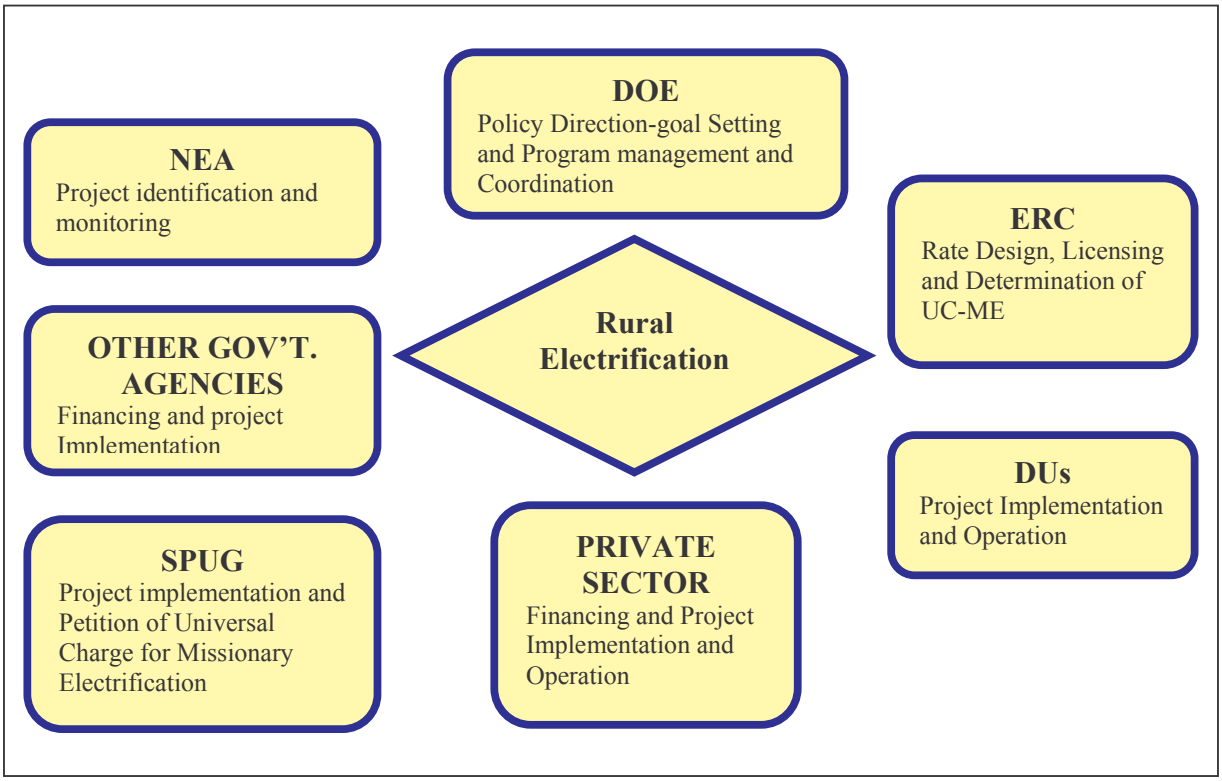

Figure 4. Current Institutional Framework and Mechanism for Rural Electrification

Under the new framework, the Rural Electrification Program team managed by the DOE is composed of the NEA through the ECs, NPC-SPUG, PNOC, PNOC-Energy Development

Corporation (PNOC-EDC) and other entities such as the Independent Power Producers (IPPs), private investor-owned utilities (PIOUs) and financial institutions.

One of the tasks of the ER team is to formulate the five-year Missionary Electrification Development Plan (MEDP) which shall be submitted to ERC in compliance with Rule 13 of the EPIRA IRR. Thus, the ER team makes sure that all rural electrification activities and projects implemented by the respective entities are aligned with the Government's thrust, Philippine Energy Plan, Distribution Development Plan (DDP) and MEDP.

B. Status of Electrification

Since the full implementation of the Rural Electrification Program in 2001, a total of 4,683 barangays have been energized by the different participating entities such as NEA, NPC-SPUG, DOE, PNOC-EDC, IPPs, PIOUs, LGUs and FREED (Foundation for Rural Electrification and Economic Development). The details of the accomplishments in terms of barangays energized are shown in Table 2. The number of barangays energized within this four-year span has more than doubled the yearly accomplishments of NEA alone. Aside from the significant increase in the barangay energization, the program has provided an avenue for the promotion of renewable energy systems, such as communal PV-battery charging systems, micro-hydro, wind energy systems and hybrids, particularly in areas where grid extension is practically unviable.

Table 2. Accomplishment per Implementor
Barangays Energized/Completed

AGENCY	2001	2002	2003	2004 (Jan. - July)	TOTAL
NEA/EC	645	543	533	320	2,041
NPC-NEA	105	111	35	6	257
NPC-SPUG	73	107	25	-	205
DOE	178	141	161	60	540
PNOC-EDC	112	175	87	35	409
IPPs	108	605	376	91	1,180
PIOUs	3	7	-	10	20
LGUs	2	3	-	2	7
ABP/FREED	16	7	1	-	24
TOTAL	**1,242**	**1,699**	**1,218**	**524**	**4,683**

As of August 2004, a total of 38,319 barangays out of the 41,945 target barangays in the country have been electrified, which is equivalent to 91.36% electrification level (Table 3). The Mindanao region particularly in the Autonomous Region in Muslim Mindanao revealed

the lowest level of electrification while the highest level of electrification is in the Luzon area.

Table 3. *Electrification Level by Region*
As of August 2004

Region	Electrified Barangays	Unelectrified Barangays	Total Barangays	Level of Electrification
I (Ilocos Region)	3,250	15	3,265	99.54%
II (Cagayan Valley)	2,180	131	2,311	94.33%
CAR (Cordillera Administrative Region	1,107	65	1,172	94.45%
III (Central Luzon)	3,071	28	3,099	99.10%
IV-A (CALABARZON)	3,928	81	4,009	97.98%
IV-B (MIMAROPA)	1,298	158	1,456	89.15%
V (Bicol Region)	3,217	254	3,471	92.68%
NCR	1,693	-	1,693	100.00%
SUB-TOTAL (LUZON)	***19,744***	***732***	***20,476***	***96.43%***
VI (Western Visayas)	3,764	286	4,050	92.94%
VII (Central Visayas)	2,918	85	3,003	97.17%
VIII (Eastern Visayas)	3,728	662	4,390	84.92%
SUB-TOTAL (VISAYAS)	***10,410***	***1,033***	***11,443***	***90.97%***
IX (Zamboanga Peninsula)	1,455	448	1,903	76.46%
X (Northern Mindanao)	1,823	197	2,020	90.25%
XI (Davao Region)	1,089	69	1,158	94.04%
XII (SOCCSKSARGEN)	1,001	191	1,192	83.98%
ARMM (Autonomous Region in Muslim Mindanao)	1,571	874	2,445	64.25%
CARAGA	1,226	82	1,308	93.73%
SUB-TOTAL (MINDANAO)	***8,165***	***1,861***	***10,026***	***81.44%***
TOTAL (PHILIPPINES)	**38,319**	**3,626**	**41,945**	**91.36%**

The remaining 3,626 unenergized barangays have been programmed for energization until 2008, two (2) years later than the original target of 2006. Since most of these remaining barangays are located in remote areas, the cost of providing basic electricity services to these areas becomes too expensive. However, only 3,049 barangays have targeted funding source while the remaining 577 barangays have no funding and will be offered to the private sector such as the Qualified Third Parties (QTPs). It is estimated that the total cost for the electrification of the 3,049 barangays will be PhP6.4 billion with the assumption that grid extension in each barangay will require PhP1.3 million while off-grid will range from PhP1 – 1.8 million. Considering the current fiscal situation of the country, the support and participation of the private sector is extremely needed. Table 4 shows the details of the 2004-2008 rural electrification program.

Table 4. Electrification Program for 2004-2008
As of August 2004

Agency/Office	2004 *(Doable Sept. - Dec.)*	2005		2006	2007	2008	TOTAL
		Spill Over (2004)	Regular Target				
NEA/ECs	216	198	200	200	200	200	1,214
DOE (BEP)	78	12	84	50	50	50	324
DOE (ER 1-94)	13	118	30	30	30	30	251
PNOC-EDC (GSC)	31		107	100	100	100	438
IPPs (Adopt)	211	176	200	-	-	-	587
QTPs/NPC-SPUG	-	116	114				230
PIOUs	2	-	3				5
TOTAL	**551**	**620**	**738**	**380**	**380**	**380**	**3,049**
Energization Level	92.7%	95.9%		96.8%	97.7%	98.6%	
BARANGAYS WITHOUT FUNDING *(To be offered to other QTPs; NPC-SPUG as last resort)*							**577**

Total Unelectrified Barangays (As of August 2004) - 3,626

Since a number of key players are involved in rural electrification, there is a need to provide the necessary framework to clearly delineate the role and targets of each stakeholder in the Missionary Electrification Development Plan (MEDP).

Basically, the MEDP contains the capital investment and operations regarding capacity additions in missionary areas and facilities not connected to the transmission system. The MEDP intends to advocate the participation of private investors in missionary areas consistent with the thrust of the Government to enhance the inflow of private capital, and investor's participation and its attendant's risk to broaden the ownership base in the energy sector. Likewise, private investor can provide needed fresh capital in the development of necessary infrastructure in missionary areas as well as relieve the Government from providing subsidies in these areas.

The 2005-2009 MEDP is currently being drafted by DOE and will be submitted for ERC's approval. This plan intends to articulate government policy for missionary electrification including the intended process for the appointment of QTPs; put in place the objectives for the development of missionary electrification activities over the period of the plan and develop a budget based on the amount of subsidy required from the Universal Charge in order to meet the missionary electrification objectives.

Previous studies have shown that the best strategy to encourage private sector participation in the implementation of the MEDP is to group the target off-grid barangays into "market packages." In this manner, a private entity or a qualified third party (QTP) could establish power supply and distribution facilities to provide long-term service to more customers for a contracted period. Among the market packages identified were Palawan and Davao del Sur (International Resources Group and Alternative Energy Developments) and Agusan del Sur, Northern Samar, Samar, Antique, Iloilo (Preferred Energy, Inc.)

IV. Financing of Rural Electrification

Section 4 of Rule 13 of the EPIRA IRR identifies the fund sources of SPUG for missionary electrification which are as follows:

1. Revenues from sales in missionary areas and from its appropriate share in the Universal Charge.

2. Appropriations from Congress, utilization of private capital, multilateral aids or grants, Official Development Assistance (ODA) funds and others.

However, these fund sources are to be utilized specifically for SPUG's missionary electrification and petitioned from ERC. Considering that there are several stakeholders of the ER electrification program, the electrification responsibilities and accountability of each keyplayer have been identified. Each entity is responsible in outsourcing funds in order to attain its energization commitment. The following are the rural electrification prime movers and fund source:

NEA/ECs

- ***Electric Cooperative Grid Component***

  Under the terms of their franchise, distribution utilities (DUs), are required to extend their distribution networks to cover unelectrified barangays. Grants to enable ECs to extend their networks are provided through NEA which is also sourced from the government annual budget allocation.

NPC-SPUG

- Section 70 of the EPIRA stipulated that SPUG shall be responsible for providing power generation and its associated power delivery systems in areas that are not connected to the transmission system which are usually located in the islands. The missionary electrification function of SPUG shall be funded from the revenues, from sales in the missionary areas and from the universal charge to be collected from all electricity end-users as determined by the ERC. Hence, SPUG will electrify barangays in unviable areas of the ECs to which it supplies electricity using solar home system and micro grids supplied from diesel generation.

DOE

- ***DOE's Barangay Electrification Project (BEP)***

  The BEP is funded from DOE's annual budget with minimal counterpart funds from the project implementor which may either be a Local Government Unit (LGU) or a Non-Governmental Organization (NGO). The project aims to electrify remote barangays utilizing the appropriate renewable energy systems. When resource is available, micro-hydro systems are installed otherwise, Solar Home Systems (SHSs) or a Solar PV Battery Charging Stations (BCSs) are installed depending on the household location. Prior to the installation of the systems in the barangays, social preparation is jointly undertaken by DOE and its Affiliated Non-Conventional Energy Center (ANEC) in the locality, project implementor and LGU, in some cases. The end goal of the social preparation is to establish a Barangay Power Association (BAPA) that will be responsible in the smooth operation and management of the system.

- ***DOE's ER 1-94 Electrification Fund***

  As stipulated in Section 5 (i) of Republic Act No, 7638 otherwise known as the "Department of Energy and Section 66 of Republic Act No. 9136, the ER 1-94 Electrification Fund shall be sourced from the one-centavo per kilowatt hour (P0.01/kWh) of the electricity sales of generation facilities and/or energy resource development projects located in all barangays, municipalities, cities, provinces and regions.

  The fund could be utilized for the following projects:

  - Development Projects – streetlighting, farms to market road, multi-purpose pavement, farm produce collection and buying station, rice/corn milling, communal irrigation system, small water impounding projects, fish ports, seawalls, day care center, school building, public market, slaughter house, public drainage/sewerage system, bridge and fixed control measures

  - Livelihood Projects – food production/processing, ice plant, livestock and poultry production, aquaculture, skills training for LGU administered livelihood projects, vegetable seed farm, small-scale services livelihood projects

  - Environment Enhancement Projects – fire truck, waste management equipment, construction/installation of waste treatment facility, sanitary landfill development, development of waster recovery warehouse and construction of concrete sanitary waste water collection facility

  - Reforestation and Watershed Projects – improvement of forest cover, vengineering measures, agro-forestry, conservation of mangroves and seedling nursery

- ❖ Health Related Projects – water supply system, municipal hospital, medical equipment/facilities and medicinal plant gardens

More specifically, the allocation of the fund are as follows:

Fund	*Generation facility located in non-highly urbanized city*	*Generation facility located in highly urbanized city*
Electrification Fund	PhP0.005/kWh	PhP0.0075/kWh
Development and Livelihood Fund	PhP0.0025/kWh	PhP0.00125/kWh
Reforestation, Watershed Mgt, health and Environment Enhancement Fund	PhP0.0025/kWh	PhP0.00125/kWh

PNOC

PNOC-EDC energizes barangays utilizing grid extension, diesel generators or solar energy systems through the Solar Home System Distribution Project (formerly EIES) only in the following areas: Leyte, Samar, Negros Oriental, Negros Occidental, Albay, Sorsogon and Cotabato.

At the moment, PNOC-EDC has completed/energized a combined total of 360 barangays from January 2000 to December 2002. This translates to about 66% accomplishment based on 546 barangays projected to be completed during the same period.

IPPs/QTPs/PIOUs

Private sector involvement in the government's rural electrification complements the program through advanced financing where costs incurred can be recovered through the available electrification fund under DOE ER 1-94 and an adopt a barangay scheme wherein private entities may provide funding for the electrification of specific barangays.

- ***Adopt-a-Barangay***

  The Adopt-a-Barangay project is a full grant-financing project for barangay electrification where individuals, private entities and other interest groups can choose barangays to adopt for electrification. The project intends to encourage IPPs, NGOs and the business community to fund rural electrification initiatives either for on-grid or off-grid electrification. As an incentive, the implementors are allowed to capitalize future contributions to the ER 1-94 electrification fund.

Among the power generating companies that have supported the government's rural electrification program are Mirant Philippines, Korean Electric Power Company (KEPCO)

Philippines Corporation, KEPCO-Ilijan Corporation (KEILCO), Cal –Energy, Salcon Power Corporation, Luzon Hydro Corporation, Toledo Power Corporation and San Roque Power Corporation. New and innovative ways of private sector participation in rural electrification such as the qualified third party (QTP) will soon be implemented, namely the Mini-Greenfield Development Project under the Rural Power Project, Philippines Rural Electrification Service (PRES) Project implemented by Paris Manila Technology Corporation (PAMATEC), and the Community Energizer Platform Project implemented by Power Source Philippines where provision of livelihood opportunities will be extended to the beneficiaries.

Other Renewable Projects

Other renewable projects are either implemented by DOE or other agencies and these are as follows:

- ***Alliance for Mindanao Off-Grid Renewable Energy (AMORE)***

Grantee: Winrock International

Period Covered: 2002-2004

Mechanism: Cooperative Agreement

The Alliance for Mindanao Off-Grid Renewable Energy (AMORE), a three-year project of the United States Agency for International Development (USAID) in partnership with the Government of the Republic of the Philippines, through the Department of Energy and the Autonomous Region in Muslim Mindanao (ARMM) and the private sector through Mirant Philippines, provides a sustainable approach to bring electricity to these remote communities with renewable energy. AMORE aims to establish sustainable renewable energy systems in at least 160 remote rural communities of former rebel combatants in Western and Central Mindanao. This program will also contribute to peace and development initiatives in Mindanao by improving the quality of life in these communities.

Under this program, USAID supports strong community participation in designing and operating renewable energy systems. Activities build strong local technical and financial capacity to effectively collect user fees, maintain and expand renewable energy systems in remote rural barangays.

Mirant Philippines, as part of their corporate social responsibility in alleviating poverty and promoting sustainable economic growth in remote rural areas, has procured renewable energy equipment for the identified areas, while USAID assists in installing this equipment. USAID provides technical expertise and training for the operations and maintenance of the systems.

The Provinces covered under the AMORE program are Basilan, Sulu, Tawi-Tawi, Maguindanao, Zamboanga Sibugay, Sultan Kudarat, Davao City and Zamboanga City.

Since its implementation, the AMORE project has accomplished the following:

- Electrified 140 remote rural barangays of former rebel soldiers using solar photovoltaic cell and micro-hydro power systems.
- Installed 280 renewable energy powered street light and 140 community centers.
- Organized 162 Barangay Renewable Energy and Community Development Associations (BRECDAs) that plan and manage the electrification systems in their communities.
- Strengthened the capability of the communities to operate, maintain and expand the renewable energy systems
- Established an Operations and Maintenance Fund (OMF) mechanism for each community. This will serve as a system for the efficient collection of community funds on an on-going basis to cover expenses.
- Shared information among stakeholders and potential participants on lessons learned in providing rural electrification with renewable energy
- Developed a policy and procedure for the appropriate disposal of used batteries to a recycling center.

- **DAR-Solar Power Technology Support (SPOTS)**

The project is designed to complement existing government efforts in improving the socio-economic conditions of Agrarian Reform Beneficiaries (ARBs) in the un-energized and off-grid agrarian reform communities (ARCs). It uses photovoltaic energy systems as enabling technology and entry point in the introduction of other components such as agricultural and rural enterprise development and institutional development.

Over 400,000 residents of the Philippines will benefit from this project which will be undertaken by BP and the Spanish and Philippine governments to bring solar power to 150 isolated villages in the Philippines. Led by the Philippines Department of Agrarian Reform (DAR), the $48 million contract - the largest solar energy project ever - is financed by the Spanish government and will be implemented in two phases, the first scheduled began in September 2003.

The first phase of the project will center on 35 Agrarian Reform Communities (ARCs) in the Mindanao region of the Philippines. BP will use solar in around 70 villages to power:

* 5,500 home lighting systems
*25 irrigation systems

* 97 potable water and distribution systems
* 68 schools, 68 community centers, 35 health clinics and 100 communal lights

* 35 new AC power supply systems for income generation purposes
* Project management and installation of 428 packaged solar systems
* Social preparation, community development and training for 200 community organizations.

The second phase will provide an additional 44 ARCs with:
* 9,500 home lighting systems
*44 irrigation systems
* 79 schools, 80 community centers, 2 health clinics and 193 communal lights
* 44 AC power supply systems for income generation purposes
* Project management and installation of 442 packaged solar systems
* Social preparation, community development and training for 220 community organizations.

The areas to be covered by the project are as follows:

Region 9 – Zamboanga Peninsula
Zamboanga Del Norte - (Gutalac, Pinan, Sibuco, Sindangan, Sirawai), Zamboanga Del Sur - (Dumalinao, Pitogo-Zamboanga Del Sur, Ramon Magsaysay), Zamboanga Sibugay - (Imelda)

Region 10 - Northern Mindanao
Misamis Oriental - (Talisayan)

Region 11 - Davao Region

Davao Del Norte - (Asuncion, Kapalong), Davao Del Sur - (Bansalan, Don Marcelino, Hagonoy-Davao Del Sur, Kiblawan), Davao Oriental - (Caraga)

Region 12 – Soccsksargen
North Cotabato - (Alamada, Antipas, Pigcawayan, Tulunan), Saranggani, South Cotabato - (Lake Sebu), Sultan Kudarat - (Bagumbayan, Columbio, Sen. Ninoy Aquino)

Region 13 - CARAGA Region
Agusan Del Norte - (Jabonga), Agusan Del Sur, Surigao Del Norte - (Loreto-Surigao Del Norte)

- **Renewable Energy and Livelihood Development for Negros Occidental**

  The JFPR Project comprises five components: (i) renewable energy development and efficient use of energy; (ii) energy-based livelihood development; and (iii) project management and poverty impact assessment

  The overall goal of the Project is to achieve poverty reduction through the provision and efficient use of sustainable renewable energy supply in support of promoting livelihood systems for poor local communicates in off-grid areas of the Philippines within the framework of public-private-civil society partnership

Financing Institution

Aside from the fund sources identified above, the financing institutions such as the Development Bank of the Philippines is very active in rural electrification. DBP provides funding under World Banks's Rural Power Project wherein a USD 10million loan is provided by World Bank in the next 5 years. It has the following types of loan, namely:

1. **Type A Beneficiaries.** (RESCO, QTP, NGO, Cooperatives (other than ECs) and LGUs). The eligible projects are for the development and construction of small scale energy generation and mini grid rural electrification projects thru conventional and renewable energy resources. The loan term is a maximum of 15 years with maximum 5 years grace period based on cash flow. Equity participation is minimum of 10% based on total project cost. Collateral requirements consist of real estate mortgage, chattel mortgage, loan guarantee, assignment of revenues, joint and several signatures, internal revenue allotment (IRA) for LGU.

2. **Type B Beneficiaries.** Renewable Energy Technology Purchasers/ Suppliers. The eligible projects are stand alone renewable energy rural system electrification project, including the marketing, sale, purchase and installation of RET systems. The loan term is maximum of 6 years with maximum of 6 months grace period based on cash flow. The same collateral requirements as in Type A.

3. **Type C Beneficiaries.** Electric Cooperatives. The eligible projects are :
   - Improving power supply system safety, reliability, efficiency and power service quality for existing customers, through rehabilitation and capacity upgrades of the existing supply system(including purchase of sub-transmission facilities)
   - Removing supply system constraints
   - Encouraging institutional development of ECs

- Providing the necessary hardware, software, motor vehicles, tools and equipment to improve employees productivity, safety and efficiency of customer service provision

The loan term is maximum of 15 years with maximum 5 years grace period based on cash flow. The collateral requirements are: real estate mortgage. Chattel mortgage, assignment of receivables with recourse, assignment of power purchase agreement, loan guarantee and collateral sharing with the National Electrification Administration.

There are two Electric Cooperatives (BOHECO and ROMELCO) who has availed the RPP loan for their hydropower project. The two ECs have put up 20% equity and the loan term is 12 years for BOHECO and 15 years for ROMELCO.

4. **Type D Beneficiaries**. (Private Sector Proponents [Private Distribution utilities such as electric Corporations] and LGUs). The eligible loan purposes are for capital investment, working capital and acquisition of existing sub-transmission lines of NPC not previously financed by the Bank.

5. **Participating Financial Intermediaries** (PFIs – Micro-Finance Institutions, Rural Banks, Thrift Banks, Savings and Loans Associations, Credit Cooperative and Credit NGOs). Eligible projects are re-lending for stand-alone RET systems. Eligible loan purposes are for stand–alone RET systems and working capital.

With regards to the Electric Power Rates, this is considered the most sensitive issue among electricity end-users. Various reforms are being implemented under the EPIRA to ensure transparent and affordable prices of electricity in a regime of free market and fair competition and are as follows:

- **Unbundling of Electric Power Rates**

Section 36 of the EPIRA mandated the unbundling of electricity rates wherein specific components of the power bill (e.g. generation, transmission, distribution and supply) are broken down to make the pricing of electricity more transparent and easier to understand. The unbundling of non-wire businesses like generation, supply, ancillary services, metering, and scheduling from the transmission and distribution wheeling charges (wires service) is necessary to put in place a market- driven price for electricity.

As of 31 March 2004, 115 out of the 141 unbundled rate applications of DUs, including NPC and NPC-SPUG have already been approved by the ERC. Based on the ERC-approved Overall Average Tariff Adjustment (OATA), the rate

unbundling resulted to price reductions ranging from PhP0.3538/kWh to PhP0.0007/kWh for the 24 DUs and rate increases from PhP0.00481/kWh to PhP1.7855/kWh for the 89 DUs.

- **Imposition of the Universal Charge**

Pursuant to Section 34 of the EPIRA, the universal charge (UC) shall be imposed to all electricity end-users for the following purposes: (i) stranded debts of NPC, and stranded contract cost of NPC and qualified DUs; (ii) missionary electrification (ME); (iii) equalization of taxes and royalties between the indigenous or renewable resources of energy vis-àvis imported energy fuel; (iv) environmental charge for the rehabilitation and maintenance of watershed areas; and (v) mitigation fund for the removal of cross subsidy.

Thus far, only two (2) components: the ME and the environmental charge are imposed on all electricity end-users. These charges, which used to form part of NPC basic rate, are now reflected as separate items in the electric bill for transparency purpose. As of 29 March 2004, the total UC collections stood at PhP1.19 Billion, and a total of PhP834 Million were disbursed to the petitioners, NPC-SPUG for ME, and NPC for the environmental charge.

Under the Rules Governing the Collection of the Universal Charge issued by the ERC on 5 December 2003, the UC is collected from all end-users on a monthly basis by the following entities: (a) DUs; (b) Suppliers, in case of contestable markets; and (c) TRANSCO or its Concessionaire, from end-users and self-generation entities not connected to a DU, nor being served by a supplier. All collections by the DUs and TRANSCO are remitted to PSALM, as the administrator of the UC funds. For this purpose, the PSALM established a special trust fund (STF), which is disbursed in an open and transparent manner. PSALM submits to the Department of Finance (DOF) and ERC on a quarterly basis report on the UC remittances by the collecting entities.

Section 7, Rule 18 of the IRR provided exemption from the imposition of universal charge to all self-generation facilities for a period of four (4) years from February 2003. Such self-generation facility must register with the ERC and PSALM to avail of the said exemption. The PSALM promulgated on 05 December 2003 the Guidelines/Procedures for the Issuance of Certificate of Registration for Self-Generation Facilities.

- **Missionary Electrification Component**
  The ERC approved on 26 June 2003 the imposition of a UC amounting to PhP0.0373/kWh for missionary electrification purpose based on the first petition of NPC-SPUG out of the PhP0.0831 originally petitioned.

NPC-SPUG filed its second petition with ERC on 12 September 2003 in the amount PhP0.1152/kWh for 2004 based on the 5-year Missionary Electrification Development Plan (MEDP) for the period 2004-2008. However, on 12 November 2003, the second petition was amended to consider the private sector participation in missionary areas. This is still pending with the ERC. NPC-SPUG received from PSALM its first availment of UC-ME amounting to PhP619.12 Million on 27 February 2004 and the next tranch amounting to PhP153.73 on 22 March 2004. The total PhP772.85 Million received was short of the NPC expected PhP1.3 Billion for 2003.

- **Environmental Charge Component**

  As mandated in the EPIRA, the environmental charge is fixed at PhP0.0025/kWh, which shall accrue to an environmental fund to be used solely for watershed rehabilitation and management in areas that host some of the power plants and other facilities. Said fund shall be managed by NPC under existing arrangements. All petitions of NPC for the availment of the environment share are anchored on its 5-year comprehensive watershed management plan, which was submitted to ERC on 15 March 2002.

  On 15 January 2004, the NPC submitted to PSALM its request for disbursement from the environmental charge amounting to PhP69.92 Million. However, the release of PhP61.89 Million out of the expected amount was made only on 22 March 2004 as required under ERC Case No. 2002-194 dated 02 April 2003, which states that disbursement shall not be earlier than forty five (45) days from the effectivity of the Guidelines and Procedures Governing Remittances and Disbursements of the Universal Charge. Said ERC decision took effect on 10 January 2004.

- **Condonation of Debts of Electric Cooperatives**

Section 60 of the EPIRA provided for the condonation of all outstanding financial obligations of ECs to NEA and other government agencies incurred for the purpose of financing the rural electrification program. The condonation benefitted consumers as electricity rates were reduced corresponding to the amount condoned and assumed by PSALM. Likewise, ECs are expected to improve their services and update their accounts settlement with the NPC, as these are preconditions to condonation pursuant to Executive Order No. 119, which provides the framework for the restructuring of the ECs. In its audit report dated 29 January 2004, PSALM recommended the condonation of PhP13.57 Billion worth of rural electrification loans covering 118 out of 119 ECs . Only San Jose Electric Cooperative, Inc. (SAJELCO) in Nueva Ecija has no outstanding rural electrification loan with NEA. An additional amount of PhP14.28 Million for loan condonation was recommended by PSALM in March 2004, taking into account housewiring loans as components of rural electrifications, which were previously considered as social program loans.

As of December 2003, PSALM has already paid NEA a total amount of PhP567.09 Million corresponding to the loans of nine (9) ECs, namely: (i) Agusan del Norte Electric Cooperative, Inc. (ANECO); (ii) Cebu III Electric Cooperative, Inc. (CEBECO III); (iii) Davao del Sur Electric Cooperative, Inc. (DASURECO); (iv) Dinagat Island Electric Cooperative, Inc. (DIELCO); (v) Mountain Province Electric Cooperative, Inc (MOPRECO); (vi) Surigao del Norte Electric Cooperative, Inc. (SURNECO); (vii) Surigao del Sur I Electric Cooperative, Inc. (SURSECO I); (viii) Surigao del Sur II Electric Cooperative, Inc. (SURSECO II); and (ix) Tarlac II Electric Cooperative, Inc. (TARELCO II).

As of end-March 2004, PSALM has submitted to the ERC, compliance certificates for 33 ECs in compliance to Section 6 of the Amended "Guidelines for the Implementation of the Reduction in Rate of the Electric Cooperatives Due to the Condonation of Debts" issued by the ERC on 15 November 2002.

- **Generation Rate Adjustment Mechanism**

In May 2003, the ERC started adopting new recovery mechanisms called the Generation Rate Adjustment Mechanism (GRAM) and the Incremental Currency Exchange Rate Adjustment (ICERA). The GRAM is an adjustment recovery mechanism that replaced the NPC's Fuel and Purchased Power Cost Adjustment (FPCA) and the DUs' Purchased Power Adjustment (PPA). The GRAM allows the quarterly adjustment in generation rate to reflect changes in fuel and purchased power costs from IPPs.

On 29 September 2003, the ERC issued its provisional approval (PA) to the joint application of NPC and PSALM for the revised unbundled rate tariffs using the Long Run Avoidable Cost (LRAC) pricing methodology in lieu of the Return on Rate Base (RORB) methodology for the determination of NPC generation rates. However, on 26 January 2004, the ERC ordered PSALM/NPC to desist from implementing the PA granted for the LRAC and revert to the use of the GRAM rates approved on 15 May 2003 for the Luzon and Visayas grids. NPC was also directed to refund the over-collection due to the implementation of the PA.

ERC likewise issued another Order for the approval of the second GRAM under ERC Case No. 2003-574, which NPC implemented in February 2004 billing. For Mindanao, the implementation of the approved rate is staggered for two (2) years. Further, on 22 April 2004, ERC issued a decision under ERC Case No. 2004-76 approving the new Incremental Currency Exchange Rate (ICERA) amounting to PhP0.2934 for Luzon, Visayas, and Mindanao. The increase in ICERA translates to a PhP0.0727 increase in the generation rates.

V. National Energy Policy and Renewable Energy Policy

The 2004-2013 Philippine Energy Plan (PEP) is aligned with the Government's goals to promote balanced economic growth, alleviate poverty and foster a market-based industry. The energy sector objectives and detailed goals are identified are as follows;

- Ensure sufficient, stable, secure, accessible and reasonably-priced energy supply
  - Average 50% self-sufficiency level in the next ten years to reach 55% by 2013
  - Wider access to reliable supply of electricity (100% barangay electrification by 2006 and 90% of households by 2017) and petroleum products (50% increase in outlets outside Metro Manila)
  - Setting of policy directions that will establish the conditions for fair business practices in the energy sector

- Pursue cleaner and efficient energy utilization and clean energy technologies applications
  - Emission avoidance of 32,000 GgCO2by 2013
  - Generate energy savings of 82.56 MMBFOE from energy efficiency programs

- Cultivate strong partnerships and collaboration with key partners and stakeholders
  - Increase/encourage private investments in the following sub-sectors: upstream and downstream activities, power and clean fuels/technologies
  - Increase public and private sector participation in policy formulation and implementation

- Empower and balance various interests of the energy public
  - Enhance awareness and involvement of the general public on energy related issues and concerns and safeguard consumer interest

In cognizant with the critical role of Renewable Energy (RE) in rural development and off-grid electrification, DOE launched the Renewable Energy Policy Framework (REPF) in May 2003. The REPF will strive to attain the following goals:

1. To increase RE-based capacity 100% by 2013
2. To be the largest geothermal energy producer in the world
3. To be the leading wind energy producer in Southeast Asia
4. To double hydro capacity by 2013
5. To install 130 to 250 MW of biomass, solar and ocean capacity
6. To become the solar manufacturing export hub of the ASEAN Region
7. To increase the non-power contribution of RE to the energy mix by 10MMBFOE within the next decade

To further pursue the REPF goals, the RE policies listed below have been adopted :

- Preference to the development and utilization of RE over hydrocarbons
- Facilitation of private sector participation to promote RE development and use
- Encourage the use of RE for rural development and off-grid electrification
- Endorsement of RE projects as "priority" for availment of special tax privileges
- Priority endorsement of RE for bilateral and multilateral financing

As part of the strategy to meet the abovementioned targets, the REPF encourages private sector participation with the introduction of fiscal and non-fiscal incentives under the Investment Priorities Plan (IPP) of the Board of Investments (BOI) of the Department of Trade and Industry. The 2004 IPP specifically identifies new and renewable energy and natural gas as one of the priority investment areas.

Particularly on the hydropower sector, more than 10 percent of the country's electricity requirements is supplied by hydropower generation. In the next ten years, it is expected that a total of 2,950 MW of hydropower capacity will be available within grid and off-grid areas. Indicative capacity additions will increase the overall hydropower available capacity to 5,468 MW from the current installed capacity of 2,518 MW. The additional capacity will be sourced from the untapped hydro potential of 13,097 MW where 85 percent is considered large and small hydros, 14 percent as mini-hydros and 1 percent as micro-hydros. Table 5 provides the capacity and location of these resources.

Table 5. List Of Available Hydropower Resources For Power Generation

NAME	CLASSIFICATION	INSTALLED CAPACITY (MW)	COMMISSIONING YEAR	LOCATION
Luzon		**1,956.7**		
San Roque	Large Hydro	400.0	2003	San Manuel, Pangasinan
Kalayaan PS HEP*	Large Hydro	419.4	2004	Laguna
Cantingas	Mini-Hydro	0.9	2004	Romblon
Batang-Batang MHP	Mini-Hydro	3.5	2005	Palawan
Ditumabo	Mini-Hydro	0.8	2005	Aurora
Kapipian MHP	Mini-Hydro	3.0	2005	Catanduanes
Kanan HEP	Large Hydro	113.0	2007	Quezon
Colasi MHP	Mini-Hydro	1.0	2007	Camarines Norte
Catuiran HEP	Large Hydro	18.0	2008	Mindoro Oriental
Dugui MHP	Mini-Hydro	4.0	2008	Catanduanes
Langogan MHP	Mini-Hydro	6.8	2009	Palawan
Addalam HEP	Large Hydro	46.0	2009	Quirino
Aglubang HEP	Large Hydro	13.6	2009	Mindoro Oriental
Diduyun HEP	Large Hydro	332.0	2010	Quirino
Agbulo HEP	Large Hydro	360.0	2011	Apayao
Hitoma MHP	Mini-Hydro	3.0	2011	Catanduanes
Abuan HEP	Large Hydro	60.0	2012	Isabela
Cabinbin MHP	Mini-Hydro	0.8	2012	Palawan
Ilaguen B HEP	Large Hydro	80.0	2012	Isabela
Nalatang HEP	Large Hydro	46.0	2012	Benguet
Amburayan HEP	Large Hydro	30.0	2012	Benguet
Bokiawan MHP	Mini-Hydro	9.9	2012	Ifugao
Hapao MHP	Mini-Hydro	5.0	2012	Ifugao
Visayas		**147.2**		
Pacuan HEP	Large Hydro	33.0	2006	Negros Oriental
Amandaraga MHP	Mini-Hydro	4.0	2006	Eastern Samar
Timbaban HEP	Large Hydro	29.0	2008	Aklan
Sicopong HEP	Large Hydro	17.8	2008	Negros Oriental
Bugtong MHP	Mini-Hydro	1.0	2008	Samar
Igbolo MHP	Mini-Hydro	4.0	2009	Iloilo City
Siaton MHP	Mini-Hydro	5.4	2010	Negros Oriental
Villasiga HEP	Large Hydro	32.0	2012	Antique
Daan Sur MHP	Mini-Hydro	9.0	2012	Capiz
Okoy HEP	Large Hydro	12.0	2012	Negros Oriental
Mindanao		**846.1**		
Hinubasan	Mini-Hydro	0.4	2004	Surigao del Norte
Lower Dapitan MHP	Mini-Hydro	3.8	2006	Zamboanga del Norte
Liangan HEP	Large Hydro	11.9	2006	Lanao del Norte
Taguibo MHP	Mini-Hydro	7.0	2007	Agusan del Norte
Lake Mainit HEP	Large Hydro	22.0	2007	Agusan del Norte
Middle Dapitan MHP	Mini-Hydro	4.4	2007	Zamboanga del Norte
Tagoloan HEP	Large Hydro	68.0	2009	Bukidnon
Libungan MHP	Mini-Hydro	10.0	2009	North Cotabato
Agus III HEP	Large Hydro	225.0	2010	Lanao del Norte
Upper Dapitan MHP	Mini-Hydro	3.6	2010	Zamboanga del Norte
Bulanog-Batang HEP	Large Hydro	150.0	2011	Bukidnon
Pulangi V HEP	Large Hydro	300.0	2012	North Cotabato
Pugu HEP	Large Hydro	20.0	2012	Agusan del Norte
Lanon MHP	Mini-Hydro	10.0	2012	South Cotobato
Kanapnapan	Mini-Hydro	10.0	2012	Lanao Sur
TOTAL		**2,950.0**		

**Committed Plant*

Eighteen (18) large hydropower potentials are estimated to account for more than 90 percent of the possible additional capacity while the remainder will be supplied by mini-hydro potentials. In addition, 490 kW of micro-hydro power plants are targeted for installation for the planning horizon. These micro-hydropower plants will be tapped to support the government's rural electrification program targeting 100 percent barangay (or village) electrification by 2006. The committed capacity addition is expected to provide 7.7 TWh of electricity per year equivalent to a fuel oil displacement of 12.9 MMBFOE.

Hydro plants are classified based on their capacities, as follows: (i) micro-hydro – 1 to 100 kW; (ii) mini-hydro - 101 kW to 10 MW; and (iii) large hydro – more than 10 MW. The total untapped hydropower resource potential of the country is estimated at 13,097 MW, of which 85 percent are considered large and small hydros (11,223 MW), 14 percent (1,847 MW) are classified as mini-hydros while less than 1 percent (27 MW) are considered micro-hydros. Some projects in Luzon are available for private financing, while 20 are undergoing feasibility studies and 82 are in the pre-feasibility stage.

Potential sites for mini and micro-hydro projects are evenly distributed in all the regions. The National Electrification Administration (NEA), National Power Corporation (NPC) and the DOE have studied specific mini-hydro potential sites and have lined them up as indicative projects. The NEA has identified about 1,000 mini-hydro potential sites for development based on its mini-hydro program which began in the 1980s. Likewise, NPC has identified potential sites for mini-hydro development. In 1995, the DOE conducted a water resource inventory study to validate NEA's and NPC's identified potential sites for promotion to private investors. Meanwhile, a study conducted by United States National Renewable Energy Laboratory (US-NREL) likewise revealed that micro-hydro potential sites are well distributed all over the regions (Figure 7). Local government units (LGUs), non-government organizations (NGOs), electric cooperatives (ECs), and DOE's Affiliated Non-Conventional Energy Centers (ANECs) supported the study by conducting local identification projects. Another study entitled "Micro-hydropower Development Study for Unenergized Barangays" is a Japanese-funded project which aims to identify at least 40 micro-hydro sites for development in Regions I, II, III and Cordillera Autonomous Region (CAR).

VI. Legal, Regulatory and Fiscal Framework of Rural Electrification

Government Legislations

In line with rural electrification, DOE in collaboration with the different energy key players are required to achieve the following objectives:

- Improve the financial performance of the Electric Cooperatives (ECs) in order to enable them to reduce system losses and respond to growing consumer demands
- Reduce the costs of supplying electricity to existing missionary areas, reducing the subsidy burden and increasing supply in line with the growing demand
- Enable provision of services to areas which have been waived by EC as unviable

As an initial step to revitalize the ECs, the DOE issued Department Circular DC-2003-12-011 "**Enjoining All Distribution Utilities to Supply Adequate, Affordable, Quality and Reliable Electricity**," This circular require that all the ECs to submit a 5-year Distribution Development Plan to NEA which will be then submitted to DOE for inclusion in the Power Development Plan and eventually the Philippine Energy Plan.

Further, the issuance of Department Circular DC-2004-01-001"**Prescribing the Rules and Procedures for Private Sector Participation in Existing NPC-SPUG Areas Pursuant to Rule 13 of the Implementing Rules and Regulations of the Electric Power Industry Reform Act of 2001**" reduced the cost in supplying energy to missionary areas. This permitted private sector participation in the NPC-SPUG areas. To date, the first wave consisting of 14 utilities have been opened and are as follows:

First Wave Of Existing NPC-SPUG Areas Open For Private Sector Participation
(Pursuant to DOE Circular No. DC 2004-01-001 dated 26 January 2004)

In compliance with DOE Circular No. DC 2004-01-001, prescribing the rules and procedures for private sector participation in existing NPC-SPUG areas, the *National Power Board* has issued *Resolution No. 2004-66* on 24 June 2004, which approved the following areas as "First Wave" areas for private sector participation.

	Concerned Distribution Utility	Municipality, Province	Region
Luzon			
1.	MERALCO	Marinduque	IV
2.	OMECO	Occidental Mindoro	IV
3.	ORMECO	Oriental Mindoro	IV
4.	PALECO	Palawan	IV
5.	MASELCO	Masbate	IV
6.	ROMELCO	Romblon	IV
7.	TIELCO	Tablas Island, Romblon	IV
8.	FICELCO	Catanduanes	V
Visayas			
9.	BANELCO	Bantayan Island, Cebu	VII
10.	PROSIELCO	Siquijor	VII
11.	CELCO	Camotes Island, Cebu	VII
Mindanao			
12.	BASELCO	Basilan	IX
13.	SULECO	Sulu	ARMM
14.	TAWELCO	Tawi-Tawi	ARMM

This declaration is consistent with Rule 13 of the Implementing Rules and Regulations of the "Electric Power Industry Reform Act of 2001, which aims to encourage inflow of private funds in the provision of adequate, reliable and secured of electricity in missionary areas.

For additional information, you may contact:

CYRIL C. DEL CALLAR, Esq.
Undersecretary
Department of Energy
Merritt Road, Fort Bonifacio
Taguig, Metro Manila, Philippines

VICENTE S. PEREZ, JR. (Sgd.)
Secretary

Fort Bonifacio, Taguig, Metro Manila, Philippines 27 July 2004

To further encourage the private Photovoltaic (PV) dealers and service providers to develop and market solar PV systems in unenergized, remote, dispersed and unviable area, DOE issued Department Circular DC 2004-06-005 "**Streamlining and Rationalizing the Grant of Subsidies in the Electrification of Missionary Areas Using Solar Photovoltaic Systems**." Through this Circular, subsidy to the PV systems will be provided to the consumers thereby reducing the cost of the systems. The provision of the subsidy however, will be governed by several factors such as the electricity consumption of the consumers, size or capacity and number of solar PV systems installed, cost of solar PV systems, willingness to pay of the consumers, potential contribution of the household electrification to community development, innovative delivery mechanisms of solar PV systems and cost of developing and marketing solar PV systems. In addition, DOE also issued Department Circular DC 2004-06-006 "**Prescribing the Qualification Criteria for the Qualified Third Party Pursuant to Section 59 of the Electric Power Industry Reform Act of 2001**." This Circular only sets the criteria for determining QTPs participation in providing electricity to remote and viable areas and this includes the financial, technical, environmental and other indices of performance.

Another circular issued by DOE is DC 2004-06-007 "**Promoting Investment Management Contracts As One Measure in Effecting Greater Private Sector Participation in the Management and Operation of Rural Electric Cooperatives Pursuant to Section 37 of Republic Act No. 9136 and its Implementing Rules and Regulations.**"

Energy Regulations

ERC has issued the **Rules Governing the Collection of the Universal Charge** on December 3, 2003 and are as follows:

1. Collection of Universal Charge by Distribution Utilities and Suppliers
   a. Each Distribution Utility and Supplier shall determine the quantity of electricity sales in kilowatt-hours (kWh) to each of its end-users on a monthly basis.
      1) In case of un-metered to an end-user, the distribution utility or supplier shall determine the amount of electricity base on wattage or connected load.
      2) In case the electric power bills are issued by the distribution utility or supplier to a particular end-user more than once a month, the provisions of Section 3 shall apply to each electric power bill and the quantity of electricity sakes in kilowatt-hours covered by each such bill.

b. The electric power bill to be issued to an end-user by the distribution utility or supplier must include the following separately identified items showing the respective amount per kwh, as approved by the ERC and the total amount payable for the billing period for each item:

(1) Universal Charge for Stranded Debt and Stranded Contract Cost of NPC;

(2) Universal Charge for Stranded Cost of Distribution Utilities;

(3) Universal Charge for Missionary Electrification;

(4) Universal Charge for Equalization of Taxes and Royalties;

(5) Universal Charge for rehabilitation and maintenance of watershed areas;

(6) Universal Charge for the removal of cross-subsidies.

c. The amount billed as Universal Charge shall be paid in full by all end-users and shall not be included in the computation of Franchise Tax and any discounts granted to them by the Distribution Utility of Supplier

d. The Universal Charge collected by each Distribution utility or Supplier shall be deposited to the Main Trust Account of PSALM with a bank that PSALM shall specify. A separate account shall be created by PSALM for each of the six (6) intended purposes of the Universal Charge which shall be held in trust for any future claims of beneficiaries.

2. Collection of Universal Charge by TRANSCO

All end-users or self-generation entities not connected to a Distribution Utility shall remit the Universal Charge directly to TRANSCO, who in turn shall bill them of the amount of Universal Charge due and payable on a monthly basis. TRANSCO shall collect such amount in accordance with the following procedures:

a. TRANSCO shall determine the quantity of electricity usage in kilowatt-hours (kWh) by every end-users and self-generation facility not connected to a Distribution Utility for each monthly billing period:

1) For end-users directly connected to TRANSCO facilities, TRANSCO shall base its measurement of their usage of electricity on actual meter reading for the monthly billing period.

2) Once self-generation facilities are required to pay the Universal Charge, TRANSCO shall be provided access to their meter in order to determine their usage of electricity. In the absence of a meter, every self-generation facility shall be responsible for providing TRANSCO with information under oath, on its usage of electricity for the monthly billing period. Such entities shall be

liable for any understatement of information provided to TRANSCO pursuant to the Rule.

3) TRANSCO shall exert its best effort to identify the end-users with self-generation facilities and to submit its report thereon to the ERC.

b. The electric power bill to be issued by TRANSCO to every end-user or self-generation entity not connected to a distribution utility or supplier shall contain information specified in Section 3.01 (b) of the Rule.

c. The amount billed as Universal Charge shall be paid in full by all end-users and self-generation entities and shall not be included in the computation of any discounts granted to them by TRANSCO.

d. TRANSCO shall collect payment for the Universal Charge from end-users and self-generation entities on the day when payments for own accounts is due.

All amounts collected for Universal Charge shall be deposited by TRANSCO to the Main Trust Account of PSALM with a bank that PSALM shall specify. A separate account shall be created by PSALM for each of the six (6) intended purposes of the Universal Charge which shall be held in trust for any future claims of beneficiaries.

2004 Investment Priorities Plan

The **2004 Investment Priorities Plan** prepared by the Board of Investment specifically includes new and renewable energy sources (such as geothermal, wind solar, biomass, etc.) and natural gas. More specifically, this covers exploration/development/utilization of indigenous, new and renewable energy (NRE) sources and technologies, including natural gas (CNG/LPG) and establishment of mini-hydro electric power plants. Indigenous, new and renewable energy sources mean sources of energy that are regenerative or virtually inexhaustible such as geothermal, wind, solar, biomass, waste to energy conversion, hydro and tidal. "Power generation" projects that may qualify for registration are: (i) Those using new and/or renewable energy sources such as biomass, waste to energy conversion, solar, wind, geothermal, hydro and tidal. (ii) Projects using natural gas (CNG/LPG) provided that the cost of production per kwh is lower than the average 2003 cost of production of existing fossil-fired thermal power plants. Applications for registration shall be endorsed by the Department of Energy (DOE). DOE endorsement shall include project's compliance with world-class environmental standards. Mini-hydroelectric plants with a capacity equivalent to or less than 10,000 kilowatts should register with the Department of Energy (DOE) under RA 7165 (Mini-hydroelectric Power Incentives Act). To qualify for pioneer status:

a) The project shall utilize new technology as endorsed by the DOE.
b) For power generation projects using new and renewable energy (RE) sources, it must comply with Article 17 of EO 226 or meet the following minimum investment costs:

On-Grid RE Projects:
- Wind Technologies – the Philippine peso equivalent of US$ 1.25 million
- Hydropower – the Philippine peso equivalent of US$ 0.20 million
- Biomass – the Philippine peso equivalent of US$ 1.80 million

c) For Off-Grid RE Projects, no minimum project cost shall be required for rural electrification i.e., wind technologies, hydropower, biomass, including on-grid solar projects.

d) For power generation projects using natural gas, project cost should be at least the Philippine peso equivalent of US$ 400 million.

e) Geothermal steamfield development or geothermal power plant construction taken as separate projects or as an integrated project should have at least the Philippine peso equivalent of US$16 million project cost.

Republic Act 7156 or the Mini-Hydro Law

Republic Act 7156 or the Mini-Hydro Law provides the following rights and privileges for mini-hydro developers:

- Special privilege tax rates – Tax payable by developers/grantees to develop potential sites for hydroelectric power and to generate, transmit and sell electric power shall by 2 percent of their gross receipts
- Income tax holiday for seven years from the start of commercial operations
- Tax and duty free importation of machinery, equipment and materials – Exemption from payment of tariff duties and value-added tax (VAT) on importation of machinery and equipment within seven years from date of award of contract
- Tax credit on domestic capital equipment – For developers who buy machinery, equipment, materials and parts from local manufacturers, tax credit is granted in an amount equivalent to 100 percent of the value of VAT and customs duties that would have been paid to import said machinery, equipment, etc.
- Special realty tax rates on equipment and machinery – Realty and other taxes in civil works, equipment, machinery and other improvements of a registered mini-hydroelectric power developer shall not exceed 2.5 percent of their original cost
- VAT exemption – Exemption from payment of 10 percent VAT on gross receipts derived from the sale of electric power whether wheeled via the National Power Corporation (NPC) grid or electricity utility lines

Below is an outline of the procedure for private sector participation in hydropower development:

Step	Time Required	Activity
1. Identify potential site/s		Consult DOE, NEA, NPC and NIA lists, project profiles or own investigation (LGUs)
2. Apply for non-exclusive reconnaissance permit	minimum of 2 weeks	Apply with DOE (Privileges/rights to study the area)
3. Conduct reconnaissance study	3 months – 1 year including conduct of FS	Contract local or foreign consultants or use own technical capabilities
4. Submit reconnaissance report to DOE		DOE evaluates submitted report and informs the developer of the results
5. If site is feasible, conduct FS		Contract local or foreign consultants or use own technical capabilities
6. Apply for Environmental Compliance Certificate	minimum of 6 months	Apply with DENR
7. Apply for Water Rights permit		Apply with NWRB
8. Negotiate PPA with NPC or ECs concerned		
9. Acquire land		Negotiate with land owner
10. Finalize financing plan		Apply for concessionary loans from donor or financial assistance from financing institutions
11. LGU endorsement		Obtain from LGU
12.Apply for operating contract and accreditation as PSGF or now NPP		Apply with DOE
13. Tender for construction and installation works and evaluate bids; negotiate and sign contracts	3 months	Proponent tenders for civil construction, electrical works and electrical works and electro-mechanical equipment supply or turn-key contract
14. Construct scheme	minimum of 9 months	Submit quarterly progress report to DOE
15. Commissioning and test runs	3 months	Conduct test runs with mini-hydro experts
TOTAL TIME REQUIRED	**minimum of 24 months**	

VII. Review of Actual Projects Implemented

A number of RE power projects have been implemented by the private sector and are as follows:

1. Villa Escudero Micro-Hydro Project

Villa Escudero Plantation and Resort, Inc. (VEPRI) in Tiaong, Quezon has an existing 75kW micro-hydro facility built in 1937. This is believed to be the first hydroelectric power station in the Philippines using river that runs through the property. The system was intended to provide irrigation and power supply to the estate. At present, this hydropower station is one of the main attractions of the resort where the guests are treated to a unique lunch experience in the low water side of the dam . Guests could wade in ankle-deep water while having their meal enjoying the ambiance of cascading water from the dam's overflow.

The project intended to rehabilitate and expand the existing 75kW micro-hydro plant and increase its capacity by adding two (2) state-of-the-art micro-hydro units to increase the total capacity to 172.8 kW. As a result, two (2) units were installed with a combined capacity of 97.8 kW. This move increased the in-house power generating capacity and offered a new attraction to tourists. The total project cost amounted to US$10.5 million with a PhP7.35 million loan provided through Preferred Energy Incorporated (PEI) out of the USAID-Winrock International Renewable Energy Financing and Technical Assistance Project (REFTA). The loan is payable in 7 years with a 2 year grace on the principal. It was computed that the project is expected to yield an internal rate of return of 19% on project cost and 25% on equity invested in year 20. The project cost could be recovered in 5 years and 5 months. So far, it was reported that the project resulted to savings on electricity bills amounting to over Php200,000.00 per month.

The success of the project could be attributed to the facilitation work, step-by-step guidance, technical assistance and project packaging provided by PEI which is not usually offered by a traditional financing institution. During the implementation of the project, it was observed that a "One-Stop-Shop" is necessary to assist RE project developers in complying with various documentation requirements of different government agencies and financing institutions. Otherwise, private developers would be discouraged to proceed with the next steps.

Contact Person: **Ms. Grace S. Yeneza**
Managing Director
Preferred Energy, Inc.
Unit 1703, Centerpoint Bldg., Garnet Rd.
Cor. Julia Vargas Ave., Ortigas Center
Pasig City 1605, Metro Manila
Tel. No: (632) 632-2745; 635-9688

Fax No.: (632) 635-9686
E-mail : pei@compass.com.ph

2. 7 MW Bubunawan Hydropower Plant

The 7MW hydropower project is a run-off-the river development situated in Baungon, Bukidnon in Mindanao. The project was initially implemented by the Cagayan Electric Power and Light Company (CEPALCO) and Cumming Cockburn Limited (CCL). Later, the Bubunawan Power Corporation (BPC) was incorporated and was managed by CCL. The project cost amounted to US$ 10.2 million with P8.015 million equity provided by PEI and the 10% initial capitalization of BPC.

3. Pagudpud 10kW Pilot Wind Turbine Power Project

The 10 kW wind system, which had an average annual wind speed of 16.4 mph, was installed in 1997 to energize twenty three (23) households in a fishing village in Ayoyo, Pagudpud, Ilocos Norte. The project which had a PhP2.102 million grant was a joint undertaking of NPC and the Philippine Council for Industry and Energy Research and Development of the Department of Science and Technology to demonstrate its technical feasibility as a stand alone electrification project. However, due to non-replacement of the batteries, the system ceased operation in 1999.

Relative to the outcome of the project, it was suggested that a scheme for sustainability should always be an integral part of a project framework. In its absence, the project is doomed to fail. One of the various delivery mechanisms that could be adopted for rural energization is the Renewable Energy Service Company (RESCO) approach. In this manner, a government-initiated energization project, which is usually subsidized, will be more effectively implemented towards sustainability if undertaken by the private sector.

4. Off-Grid Electrification of Alaminos, Aklan

The project entailed the installation of a 15 kW PV-LPG hybrid electrification project and 10 solar home systems in 2000 at a cost of US$0.11 million. This was solely a private company initiative implemented by Shell Philippines Exploration and Community Power Corporation, USA adopting a "RESCO approach." Thus, the RESCO sells electricity services to about 90 households in the barangay.

The project clearly demonstrated that the project financial viability is an essential component of sustainability. Although PV and LPG singly or in hybrid are technically proven to be viable sources of power for rural electrification, their related investment and life-cycles costs should be determined as a basis for determining their viability and sustainability. Further, RESCO is considered to be a potential delivery mechanism to provide electricity services to unenergized barangays. However, since

RESCOs operate for profit, the life cycle cost of the energy source is a major consideration.

In addition, the other key lessons learned in the project are as follows: consumer will pay far more than regulated tariffs; first 300 watt-hours of service is most highly valued in households; different types of services for each type of customer should be provided to increase 'business density" and pre-payment and demand side management is critical for success.

5. Windpower in Ilocos Norte

The 25MW NorthWind Bangui Bay Project in Ilocos Norte had just held their groundbreaking ceremonies last April 24, 2004.

The wind project would involve the installation of 15 units of NEG Micon (NM82) wind turbine generators rated at 1.65MW each along the shoreline of Bangui Bay by the end of this year.

The project is estimated to cost US$ 47.197 million with a capital structure of 39% equity (US$ 18.324) and 61% debt (US$ 28.873 million). The Danish International Development Agency (DANIDA) will provide the debt at a "zero" interest mixed credit while the remaining cost will be shouldered by NorthWind Development Corporation.

The electricity generated from the wind power shall be sold to the Ilocos Norte Electric Cooperative (INEC), a rural electric cooperative in the province.

Contact Person: **Mr. Niels Jacobsen**
President & Chief Executive Officer
NorthWind Power Development Corporation
Unit 310 Jollibee Plaza Building Emerald Ave.
Ortigas Center, Metro Manila
Tel. Nos.: (632) 638-9090 to 91
Fax Nos.: (632) 638-9089
e-mail ad: nwind@mozcom.com

6. 30MW Talisay Cogeneration Plant

The 30MW plant will utilize the waster product of sugar cane (bagasse) from the mill supplemented by cane residues and some bagasse purchased from other mills. Woodchip from local sustainable plantations will be used as off-season fuel thus providing the mill with the opportunity to extend its operating season if desired.

The project will be implemented in Talisay, Negros island by the Talisay Bioenergy Inc. (TBI) which was formed in July 2003 to develop, construct, operate and own the

First Farmers cogeneration plant. The single shareholder is Bronzeoak Philippines, Inc. that is owned by Bronzeoak Ltd. of the UK and the Venture Factors/Zabaleta & Company of the Philippines. 15% equity will be provided by the initial sponsors and the 85% will be open for the purchase of investment groups.

The host facility for the cogeneration plant is First Farmers Holding Corporation (FFHC) which has a capacity of 900,000 tonnes of cane and 1,2000,000 lkg bags of refined sugar per year.

Central Negros Electric Cooperative (CENECO) will purchase the power to be generated.

TBI will require a project financing approximately USD$60M.

Contact Person: **Mr. Jose Maria P. Zabaleta, Jr.**
Vice President
Suite 1207, Security Bank Centre
6776 Ayala Avenue, Makati City
Tel. No.: (632) 752-0050
Fax No.: (632) 892-9238
E-mail: VFIM@skyinet.net

Other hydropower projects are still undergoing further feasibility evaluation or revalidations and are as follows:

1. **22.5 MW Timbaban Hydropwer Plant in Madalag, Aklan**

   A feasibility study has already been conducted by Norconsult for NEA in 1984 and for NPC in 1992. The FS gave favorable results. Currently, validation of the FS results is being conducted by PNOC-EDC.

2. **32 MW Villasiga Hydropower Plant in Bugasong, Antique**

   Similar to the Timbaban site, a feasibility study has also been conducted by Norconsult in for NEA 1980 and 1984 and for NPC in 1992. Results revealed that the project is technically, economically and financially feasible. At present, validation is being conducted by PNOC with funds sourced from WestJec and TransAsia.

3. **19 MW Catuiran Hydropower Plant in Naujan, Mindoro Oriental**
   A FS has been conducted for NPC in 1992 by Halcrow, Kennedy & Donkin and Philnor. A validation study is currently being conducted by PNOC-EDC.

4. **39.5 MW Alag Hydropower in San Teodoro, Mindoro Oriental**
   A FS has been conducted for NPC in 1992 by Halcrow, Kennedy & Donkin and Philnor.

5. **13.6 MW Aglubang Hydropower in Victoria, Mindoro Occidental**
   A FS has been conducted for NPC in 1992 by Halcrow, Kennedy & Donkin and Philnor.

6. **28 MW Hydropower in Bongabong, Mindoro**
   A FS has been conducted for NPC in 1992 by Halcrow, Kennedy & Donkin and Philnor.

7. **24 MW Dulangan Hydropower in Baco, Naujan, Oriental Mindoro**
   A FS has been conducted for NPC in 1992 by Halcrow, Kennedy & Donkin and Philnor.

8. **5.6 MW Babuyan Hydropower in Palawan, Puerto Princesa**
   A FS has been conducted for NPC in 1992 by Halcrow, Kennedy & Donkin and Philnor.

9. 6**.8 MW Langogan Hydropower in Palawan, Puerto Princesa**
   A FS has been conducted for NPC in 1992 by Halcrow, Kennedy & Donkin and Philnor.

10.17.8 Sicopong, Sta. Catalina, Negros Oriental
A FS has been conducted for NPC in 1992 by Halcrow, Kennedy & Donkin and Philnor.

VIII. Existing Private Sector Business Structures for Rural Energy Services

Under the EPIRA, the DOE is tasked to:

- ✓ encourage private sector investments in the electricity sector and promote development of indigenous and renewable energy sources
- ✓ facilitate and encourage reforms in the structure and operations of distribution utilities for greater efficiency and lower costs
- ✓ in consultation with other government agencies, promote a system of incentives to encourage industry participants, including new generating companies and end-users to provide adequate and reliable electric supply

- ✓ monitor private sector activities relative to energy projects in order to attain the goals of the restructuring, privatization and modernization of the electric power sector as provided for under existing laws
- ✓ provide an environment conducive to free and active private sector participation and investment in all energy activities
- ✓ formulate and implement programs for the accelerated development of non-conventional energy systems and the promotion and commercialization of its applications
- ✓ encourage private enterprises engaged in energy projects, including corporations, cooperatives and similar collective organizations, to broaden the base of their ownership and thereby encourage the widest public ownership of energy-oriented corporations

Relative to the numerous tasks enumerated above, DOE has put in place the necessary framework and initiated activities for the participation of the private sector in energy projects and are discussed in the following:

- **Private Sector Participation in SPUG Areas**
  Pursuant to Section 70 of the EPIRA, NPC-SPUG is mandated to continue its ME's function by providing power generation and its associated power delivery systems to areas that are not directly connected to the national transmission system. NPC-SPUG is presently serving 96 areas in 29 different provinces all throughout the country with a total installed capacity of 207.23 MW and dependable capacity of 122.46 MW.

  To encourage inflow of private capital in all missionary and unviable areas, the DOE issued Department Circular No. 2004-01-001, entitled "Prescribing the Rules and Procedures for Private Sector Participation in Existing NPC-SPUG Areas Pursuant to Rule 13 of the Implementing Rules and Regulations of the Electric Power Industry Reform Act of 2001 (EPIRA-IRR)," dated 26 January 2004.

  In compliance to said Circular, NPC-SPUG has identified and recommended the first wave of areas for privatization located in the following areas: (i) Mindoro; (ii) Marinduque; (iii) Palawan; (iv) Catanduanes; (v) Masbate; (vi) Tablas; (vii) Romblon; (viii) Bantayan; (ix) Camotes Island; (x) Siquijor; (xi) Tawi-tawi; (xii) Basilan; and (xiii) Sulu.

  To move forward with the privatization of SPUG areas, the DOE, PSALM, and NPC have engaged the International Finance Corporation (IFC) as transaction advisor to assist in the development of appropriate privatization program and selection of new power provider (NPP). The IFC is currently conducting pre-engagement surveys to the aforementioned areas.

- **Participation of Qualified Third Parties in Unviable/Waived Areas**
  Section 59 of the EPIRA and Rule 14 of the EPIRA-IRR open up to QTP the provision of electric service in remote and unviable areas that the DUs are unable to

serve until June 2004 or three (3) years from the effectivity of the EPIRA. The DOE is currently developing the guidelines that will allow the participation of the QTPs in these areas.

Said guidelines will include the following provisions: (i) implementation scheme for QTPs to provide services in waived areas, such as qualification of QTP and process for awarding an energy service contract; (ii) tariff, subsidies and bid evaluation criteria; (iii) ERC regulations; and (iv) obligations of the franchise holders.

- **Entry of Private Investors to Improve the Operation of Electric Cooperatives**
  In view of the issuance of E.O. 119, the DOE and NEA are likewise studying an option wherein under-performing ECs can enter into an Investment Management Contract (IMC) to improve its financial and management performance. The concept of the IMC is to bring in capital and management expertise of a private sector in managing and supervising the operation of ECs. An IMC is a kind of concession contract being proposed as a way for ECs to access a combination of private sector capital and management. In this scheme, the EC enters into an IMC with an operator-investor wherein the investor invests risk capital while given management control of the EC. In return, the investor receives remuneration from the EC commensurate with its inputs provided to the improvement of the EC. Another IMC scheme being contemplated is that the operator-investor will be competitively selected, and will be required to invest risk capital.

  To pursue the IMC, the DOE in coordination with NEA issued Department Circular No. 2004-06-007 "Promoting Investment Management Contracts as One Measure in Effecting Greater Private Sector Participation in the Management and Operation of Rural Electric Cooperatives Pursuant to Section 37 of Republic Act No. 9136 and its Implementing Rules and Regulations." Under this circular, the DOE will implement, support and promote programs and projects to urge ECs to undertake structural and operational reforms to achieve greater efficiency and lower costs through collaboration with the private investor-operator/s to gain access to private sector capital and management expertise. Thus, the ECs may consider or include, but are not limited to the following:

  - Collaborative efforts with private sector participants, such as investor-operator under IMCs
  - Amalgamations, either through a merger, consolidation or regional joint management arrangements; and
  - Conversion into Stock Cooperatives under the Cooperative Development Authority (CDA) or Stock Corporations under the Corporation Code

While waiting for the full implementation of the identified strategies, a number of issues and barriers for the widespread development, application and market penetration of RE still have to be addressed. Series of workshops, conferences, meetings and roundtable discussions have been conducted with the different stakeholders in the country such as the government agencies, private sector, NGOs, academe, financial institutions to discuss these barriers and identify the solutions. As a result, these barriers have been categorized as follows:

- Institutional and Policy Barriers
    - Non-comprehensive development plan on RE
    - RE projects are not directed towards sustainability and real market approach
    - Lack of clear policies, appropriate legislations and incentives on RE applications
    - Utility regulations are not favorable to RE development

- Financial Barriers
    - Difficulty in accessing traditional financing windows
    - Lack of support from Government Banks

- Technical Barriers
    - Lack of capacity in project packaging and presentation among RE project proponents
    - Inadequacies in the area of RE technology development

- Market Barriers
    - Inadequate knowledge of RE market conditions
    - Unsuccessful RE delivery mechanisms
    - Lack of private sector involvement in small to medium scale RE projects

- Information and Training Barriers
    - Non-availability of up-to-date and comprehensive RE data
    - Lack of success stories on sustainable RE applications in the country
    - Lack of technology extension to users and suppliers of RE technologies
    - Ineffective RE Promotion and Advocacy programs

After the identification of the RE barriers, United Nations Development Programme (UNDP) initiated the implementation of a 5-year project (2002-2007) entitled "Capacity Building to Remove Barriers to Renewable Energy Development". The project aims to 1) strengthen the capacity of the GOP agencies to enact and implement sound RE policies; 2) provide information for targeted audiences to build a RE market; 3) create a "one-stop-shop" market service center for preparing and promoting RE projects; 4) increase coordination

among organizations concerned with RE; 5) assist the market penetration of RE in remote, off-grid communities by providing incentives for innovative market delivery and financing mechanisms; 6) improve the quality of RE technologies and systems through assistance with standard setting.

IX. Opportunities for Accelerating Renewable Energy Application for Grid Connected Power Generation

During the previous years, the initiatives for RE application for grid connection had to undergo a difficult hurdle. However, with the passage of the EPIRA, this provided the door for the entry of RE applications for grid connected power generation such as the QTP, privatization of the SPUG areas, etc. With the implementation of the UNDP-CBRED Project and WB projects, hopefully, there will be numerous RE applications connected with the grid in the next years.

At the moment, the mechanisms on how to move forward are still being established. Inspite of this, a number of private entities have seen the prospects for RE and therefore have started to move forward on their own initiative.

X. Conclusion and Recommendation

Although the Micro-hydro Law was in existence, the passage of the EPIRA Law provided the framework for the development and utilization of RE in the country. Further, this move laid the grounds for the active participation of the private sector

Currently, a number of factors are besetting the country such as the financial crisis, the Iraq war that resulted to the worldwide escalation of oil prices, etc. With these concerns, all sectors now are searching for ways and means to tap cheap and alternative source of energy. In line with this, the government is aggressively pursing the utilization of RE in a wider scale in order to attain energy independence. As a result, the RE Policy Framework was formulated and was presented to the recently RE Congress in Bonn, Germany. However, concrete projects need to be implemented. With the present budgetary resources of the country, the participation of the private sector is encouraged to attain the targets set for RE.

In order to entice the private sector to participate in the implementation of RE projects, the appropriate financing schemes must be identified, pilot tested and fully documented.