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PRIVATE POWER DATABASE

COUNTRY PROFILE:

THE PHILIPPINES

A Report of:

Private Sector Energy Development Program
Office of Energy
Bureau for Science and Technology
United States Agency for International Development

Prepared by:

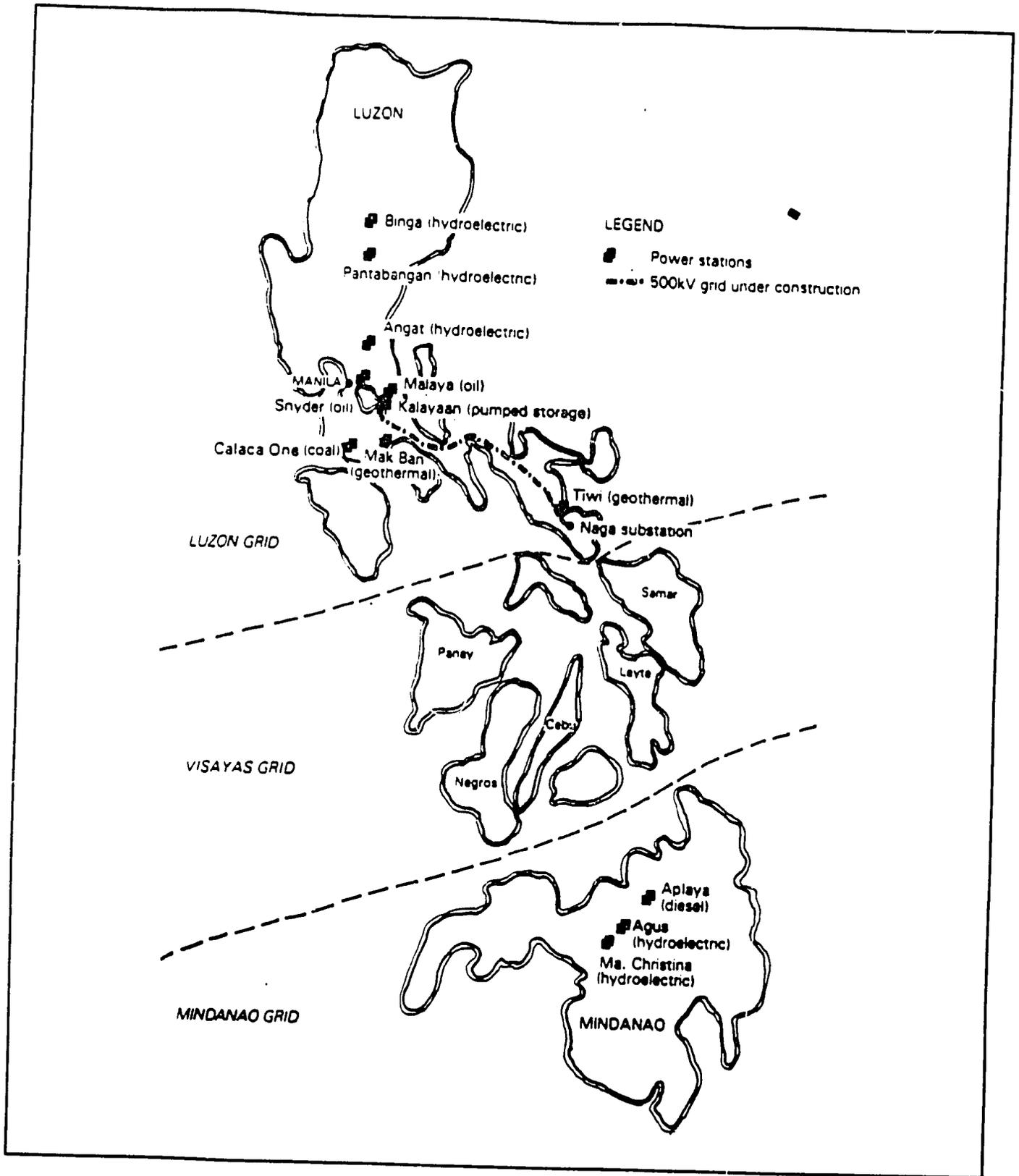
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PHILIPPINES POWER SYSTEM



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INTRODUCTION

This country profile is one of a series of reports generated from the Private Power Database of the Agency for International Development (A.I.D.). Database country profiles are also available for the Dominican Republic, India, and Pakistan. The Private Power Database contains information on power sector developments in A.I.D.-assisted and other countries with private sector involvement or offer opportunity for private sector project development. The database covers government policies, cogeneration projects and opportunities, private power projects and opportunities, government contacts, equipment vendors, and program activities of international development organizations. It also contains a bibliography of private power publications. RCG/Hagler, Bailly, Inc. maintains the database under the A.I.D. Office of Energy's, Private Sector Energy Development Program.

Private Power Database Country Profile: The Philippines is divided into two parts. Part 1 provides a brief overview of the power sector in the Philippines and the status of private sector participation. Part 2, which starts with a glossary of terms to explain the terminology used in the printouts, contains the private power database printouts for the Philippines. It is divided into sections and contains database entries for the Philippines. It is followed by an appendix of the rules and regulations governing the implementation of private power projects in the Philippines.

The information contained in this report is the product of research and data collection, principally from secondary sources. Limited access to data on private sector developments and the dynamic nature of these developments mean that the information contained in this report may not always reflect the most current private power developments. Therefore, readers are encouraged to contact individuals listed in the project profile or private power contacts listing for updates. The Agency for International Development and RCG/Hagler, Bailly make no claims as to the accuracy of the information.

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PART 1: OVERVIEW OF THE POWER SECTOR

The following is a brief description of the power sector in the Republic of the Philippines. It is intended to provide the reader with information on the current status and expected developments in the country, including electricity demand and supply, energy resources, and the status of private power.

BACKGROUND

The Philippines is an archipelago of 7,107 islands and islets located in Southeast Asia. The two largest islands are Luzon in the north and Mindanao in the south, which together account for 65% of the country's land area and 60% of the total population of about 57 million. Between the two lies the Visayas Islands. The official languages are Filipino and English. Per capita gross domestic product (GDP) was \$603 in 1987. The per capita electricity generation consumption was 390 kWh. As of 1985, only about half of the total population had access to electricity. The national currency is the Peso. The average market exchange rate with the U.S. dollar over the period 1987 to 1989 is given in Exhibit 1.

Exhibit 1:

Pesos to U.S. Dollar Exchange Rate (1987-1989)

	<u>Pesos</u>		<u>U.S. Dollar</u>
June 1987	P 12.8	=	\$1
June 1988	P 21	=	\$1
June 1989	P 21.6	=	\$1

Source: International Monetary Fund

Between 1987 and 1988, the country's energy consumption increased 9% to a peak level of 109 million barrels of oil equivalent. Economic activity boosted the demand for power by 11% over this period. The industrial sector which accounts for just over half of nationwide power usage, chalked up a dramatic increase of nearly 13% in power consumption. Electricity provides over half of the commercial energy used by the residential and commercial sectors and 11% of that used by industry.

In 1989, the country was faced with a critical power supply shortage in the main grids, particularly in Luzon, attributable to inadequate generation capacity and a string of unfortunate events that transpired during the year. The vigorous power demand growth in 1989, which fully reflected the pattern of economic growth, forced the utility system to operate at full capacity and with a generally low reserve margin, thereby making it difficult to meet new peaking electricity demand. In addition, the situation was aggravated by low thermal plant and transmission capacity.

The expansion of the Philippines power generation capacity is highly dependant on the availability of investment capital. Over the next decade, a total capital investment of \$7.5 billion is needed in the power sector, of which local sources will account for only \$2.1 billion or 28%. The balance will have to come from foreign exchange sources. The World Bank estimates that about \$4.7 billion is needed in new generation, \$750 million in transmission, \$1.4 billion in distribution, and \$700 million for general expenditures. In order to meet future capacity needs, the government has established a program to promote the entry of the private sector into the ownership and operation of power projects.

POWER SECTOR INSTITUTIONS

The following public and private institutions are involved in the Philippines power sector:

- **National Power Corporation (NPC)**, formerly under the jurisdiction of the Ministry of Energy, was placed under the office of the President in April 1988 and is responsible for generation and transmission of bulk power in the country.
- **Manila Electric Company (MERALCO)** is the distribution company supplying electricity to Metropolitan Manila. MERALCO is a private company and also has some generation capacity.
- **National Electrification Administration (NEA)**, which is under the Department of Environment and Natural Resources, is responsible for the country's rural electrification program, and oversees the establishment of electric power cooperatives.
- **Philippines National Oil Corporation (PNOC)**, like NPC was placed under the President in 1986. PNOC is involved in over 50% of the refining and distribution of imported oil, and is also responsible for the development of indigenous oil, gas, coal and geothermal resources.

- **Office of Energy Affairs (OEA)**, which was created in June 1986, has primary responsibility for the formulation, planning, monitoring, implementation and coordination of policies and programs in the energy sector, including the power subsector.
- **Energy Regulatory Board** is responsible for energy pricing, as well as the regulation of all private electric utilities in the country, and coordinating with NPC in sales and distribution.
- **Energy Coordinating Council** was created in 1988 to coordinate the activities of the principal energy implementing agencies in the Philippines, i.e., NPC, NEA, PNOC, and OEA.
- **Environmental Management Bureau** is part of the Department of Environment and Natural Resources and is responsible for environmental and watershed management functions.

ELECTRICITY DEMAND

In the 1960s and the beginning of the 1970s, the demand for electricity in the Philippines grew at annual rates well over 15%. Following oil price hikes and corresponding electricity tariff increases, annual growth in demand fell to less than 10%. Between 1980 and 1984, annual growth in demand averaged 7%. Following negative or very small growth in electricity demand during the 1984-1986 period, caused by economic conditions in the country during 1984 and 1985 and the serious draught in Mindanao in 1985, the electricity sales increased dramatically by 9.6% in 1987 and 10.6 in 1988. The resurgence of the industrial sector, one of the major forces behind the economic upturn, resulted in a consumption increase of 12.2% in 1988 in that sector.

Forecasts developed by NPC in February 1988 show total electricity generation growing at an average annual rate of 5.8% in the 1987-2000 period, increasing from about 21,000 GWh to 43,500 GWh.

ELECTRICITY SUPPLY

The electric power industry in the Philippines is comprised of a number of participating organizations, some of which are publicly-owned and others are privately owned. These organizations and their installed generating capacity are shown in Exhibit 2.

Exhibit 2:

**1988 Installed Generation Capacity
by Plant Type and Ownership
(Megawatts)**

	<u>Total</u>	<u>Hydro</u>	<u>Coal</u>	<u>Geo- thermal</u>	<u>Oil/ Diesel</u>	<u>Non- Conventional</u>
NPC	5,806	2,125	405	894	2,384	-
MERALCO	160	-	-	-	160	-
Private Utilities	331	-	-	-	297	-
Cooperatives	112	4	10	-	84	17
Self-generators	475	-	120	-	188	167
TOTAL	6,865	2,139	535	894	3,113	184

Source: Office of Energy Affairs, Philippines

By far the largest organization in the power sector is NPC, which has seven separate grids in the Philippines. These may be divided into three regions as depicted in the preceding map: the Luzon grid (installed capacity of 4,111 MW), five island grids in the Visayas island (aggregate capacity of 600 MW), and the Mindanao grid (installed capacity of 1,067 MW). With a total of 5,800 MW, NPC operates over 85 percent of the generation capacity in the country. The majority of NPC's capacity (41%) is oil-fired, while hydro (37%), geothermal (15%), and coal-fired (7%) comprise the rest. In 1989, total generation was 25,916 gigawatt hours (GWh), of which Luzon accounted for over three-quarters.

Power is distributed to major urban areas by a number of investor-owned utilities which also have some generation capacity of their own. Of these, the largest is the Manila Electric Company (MERALCO), which serves the Manila metropolitan area. Power distribution in the rest of the country is undertaken by private and municipal utilities and by the 117 electric cooperatives.

NPC's Power Development Plan indicates that the utility plans to add 3,679 MW of new generating capacity between 1989 and 1999. The bulk of this will come from geothermal (46%) and coal (33%). Geothermal capacity is expected to nearly triple during this period from 894 MW to 2,568 MW, while coal capacity is expected to nearly quadruple from 405 MW to 1,605 MW (see Exhibit 3.)

Exhibit 3:

**National Power Corporation
Installed Generation Capacity
1989 and 1999
(Megawatts)**

	1989	1999	Increase	
			(MW)	(%)
Hydroelectric	2124	2673	549	26
Geothermal	894	2568	1674	187
Nuclear	0	0	0	0
Oil				
Steam	2239	2239	0	0
Combustion turbine	0	200	200	n.a.
Combined cycle	0	0	0	0
Diesel	126	182	56	44
Natural Gas				
Steam	0	0	0	0
Combustion turbine	0	0	0	0
Combined cycle	0	0	0	0
Coal/lignite	405	1605	1200	296
Total Capacity	5788	9467	3679	64

Source: World Bank

ENERGY RESOURCES

Despite a concerted effort to diversify away from imported oil, the Philippine economy remains heavily dependent on petroleum products. Net oil import dependency fell from 95.2% in 1973 to 58.5% in 1984, but increased again to 71.5% in 1987. The reduced oil dependence can be attributed to government administered conservation and fuel diversification policies, as well as pricing policies. Over this same period, electricity's share of primary energy grew from 19% to over 42%.

The Philippines has only modest amounts of indigenous fossil energy resources. Proven petroleum reserves are estimated at 4 million tons, natural gas deposits are considered sub-commercial, and total coal resources are estimated at about 1,500 million tons, with the largest deposits located on the small island of Semirara and in the Cagayan Valley of northern Luzon.

Hydropower resources, by contrast, are quite substantial, with a theoretical power potential of over 10,000 MW. However, development of these resources is relatively

costly due to the distance of the better sites from the main transmission grids. OEA has a fairly well-developed inventory of potential hydropower sites in the Philippines.

The country's main potential domestic energy source is geothermal steam. While the geothermal reserves have not been fully evaluated, they could exceed 8,000 MW. Based on current information, there are about 4,431 MW of probable reserves, 1,640 MW of which have been tested. However, only 894 MW of capacity has been installed. Luzon accounts for about 3,000 MW of total potential; however, only 700 MW is currently being utilized. Most of the remaining reserves are on the island of Leyete, which has a potential of 2,000 MW, of which 400 MW is available from the Tongonan field. To date, PNOC and Philippines Geothermal Inc., a subsidiary of UNOCAL, are the only steam producers. PNOC is considering joint ventures in new geothermal field developments to accelerate the commercial development of the country's geothermal resource.

STATUS OF PRIVATE POWER

In 1987, President Aquino issued Executive Order No. 215 which provided for the private sector to build, own and operate power stations in the Philippines, thus repealing the NPC's sole responsibility for power generation expansion. In June 1989, NPC and OEA jointly issued the Rules and Regulations to Implement E.O. 215 on Private Sector Participation in the Power Sector (see Appendix A). The rules and regulations stipulate that the private sector can construct Private Sector Generating Facilities (PSGFs) that are cogeneration and renewable energy systems or Block Power Production Facilities (i.e., plants originally included in NPC's power expansion plan).

Private sector activity in power project development in the Philippines began in 1988 and has recently increased following the issuance of rules and regulations for private power implementation. The first project to go forward was the Hopewell 200 MW gas turbine project. The first unit of the project was commissioned in July 1990. Also, NPC solicited proposals from international developers to construct and operate a coal-fired power plant at Calacca. Currently, NPC is negotiating with the sponsors of two proposed 350 MW coal-fired power plants in response to this solicitation. Hopewell Energy (Hong Kong) and Asea Brown Boveri (Sweden) are the sponsors of one of the projects. The other is sponsored by Mitsubishi (Japan). A number of cogeneration projects have been proposed under the new rules, the most notable of which is the Cogentrix 210 MW coal-fired project at the Caltex refinery. Finally, PNOC is inviting the private sector to form joint ventures in developing the geothermal potential.

PART 2: PRIVATE POWER DATABASE PROFILES

The profiles contained in this section are printed directly from the U.S. Agency for International Development Office of Energy's Private Power Database. A *Glossary of Terms* is provided as a key to the terminology used in the database reports. The *Government Policies* section recounts policy developments relevant to private sector interests in the power sector and provides the legal and regulatory framework for private sector involvement. They cover power generation, power sales to the local utility, interaction with the grid, power purchase pricing, fuel use and price, foreign investment, importation of equipment, and environmental and/or safety standards. The *Private Power Projects* and *Cogeneration Projects* sections contain information on projects which have proceeded to some stage of development, such as completion of a feasibility study, application for government clearance, the granting of a letter of intent, or the negotiation of a power purchase agreement with the utility. For both cogeneration and private power projects, an indication of the status of the project is given, i.e., inactive, active or operating. Depending upon a project's status, these sections identify markets for equipment vendors, engineering firms, financiers, and other project development services.

The *Private Power Opportunities* and *Cogeneration Opportunities* sections provide leads on prospective project development opportunities. Cogeneration and private power opportunities are potential projects for which little or no development has occurred. In many cases, there is only limited information available on the location, size and type of power system, since no commitment has been made to the project. The *Government Contacts* list provides names and addresses of key people in the Philippines to contact on private power issues and opportunities. The last section, the *Bibliography* contains an annotated list of relevant publications for additional reading on the subject of private power in developing countries. Finally, we have added *Appendix A*, which contains the official "Rules and Regulations to Implement E.O. 215 on Private Sector Participation in the Power Sector," explaining the process by which a sponsor proposes to develop a project.

The following terms are used in one or more of the private power database profiles. For each term, a brief definition is given and, where appropriate, an explanation of the various abbreviations used.

CAPACITY: Nameplate generating capacity of installation in megawatts (MW).

COMPANY: The name of the company sponsoring a cogeneration project.

CONNECTED TO THE GRID: Whether a project is currently or is expected to interconnect with the existing utility transmission system. "Y" - yes; "N" - no; and a blank indicates no interconnection information.

CONSULTANT: The consulting engineering company responsible for conducting the cogeneration or private power project feasibility study.

CONTACT: A point of contact for more information on a cogeneration or private power project.

DATE OF POLICY: The date a given private power policy was issued.

DATE UPDATED: The last date for which information was input into the private power database.

DESCRIPTION: Any information on the project technical details, the project sponsors, the project status, or any other pertinent details.

DESIGN DATE: The date on which the engineering design of a cogeneration or private power project was completed.

ELECTRICITY USAGE: The use of the electricity generated by a private power project (e.g., sell to the grid, self-use).

ENGINEERING FIRM: The company responsible for preparing the engineering design of a cogeneration or private power project.

EQUIPMENT TYPE: The specific power generating equipment which a vendor (see **SUPPLIER**) supplied to a cogeneration or private power project.

EXPECTED COMMISSIONING DATE: The date, past or expected, on which a cogeneration or private power project begins operations.

EXCHANGE RATE: The currency exchange rate between U.S. dollars and the local currency, including the year in which the exchange rate is given. The rate is based on the average market rate that year as published by the International Monetary Fund.

EXPORT EXCESS ELECTRICITY: Whether or not the project is designed to sell excess power to the grid. "Y" - yes ; "N" - no; and a blank space means no information.

FEASIBILITY STUDY DATE: The date of completion for a cogeneration or private power project feasibility study.

FUEL: The fuel(s) used in the power generating system (i.e., coal, oil, natural gas, diesel, wood, agricultural waste, solid waste, bio-methane, other biomass, waste heat, solar, wind, water, geothermal, ocean energy).

FUEL SUPPLY SOURCES: The source of fuel for the project if known. A blank indicates unknown source of fuel supply.

GOVERNMENT/UTILITY CLEARANCE: Any indication whether the local utility has given a private power project clearance to interconnect with the grid.

INTERCONNECTION ISSUES: Any details pertaining to the interconnection of the installation with the existing grid. A blank indicates no information is available.

LOCATION: The geographic location of the project, including distance to major cities.

MAIN FEATURES: The main provisions of a given private power policy.

NEW INSTALLATION/RETROFIT: "N" - New; "R" - Retrofit.

OWNERSHIP: Information on the rights to develop the site of a specific private power or cogeneration opportunity. This information is incorporated in the "description" of the database reports.

PROJECT COST: The installed cost of a cogeneration or private power project, including the currency and the year in which the cost is given. Costs are given in exponential terms (e.g., 5000 = 5E3), and are divided into foreign exchange and local currency components.

PROJECT FINANCING: Any details pertaining to the financing of the project, including cost estimates.

STATUS: Current status of a cogeneration or private power project. "INACTIVE", "ACTIVE" or "OPERATING" indicate inactive or discontinued development, active development, or operating, respectively.

SUPPLIER: The company responsible for supplying all or part of the power generating equipment used in a project (see EQUIPMENT TYPE).

TITLE: The title of a government policy (in English).

TYPE OF POLICY: The areas covered in a specific government policy. Options include power generation, power sales, interaction with the grid, power purchase pricing, fuel use/price, environment/safety, foreign investment and equipment import. "X" denotes the specific provisions covered under the policy; "-" indicates not covered.

TYPE OF PLANT: The type of industry and commercial operation at the site of the installation in a cogeneration project (e.g., oil refinery, sugar mill).

TYPE OF POWER SYSTEM: The technology employed in the power generating system (i.e., boiler/steam turbine, combined cycle, combustion turbine, diesel generator, hydroelectric, non-conventional).

USE OF HEAT: The application in which the thermal energy output of a cogeneration system is used (e.g., food processing, space heating).

UTILITY/OWNER AGREEMENT: "Y" - indicates that a power purchase agreement exists; "N" indicates that no agreement exists; a blank space indicates that there is no information as to the existence of such an agreement. The year in which a power purchase agreement was signed is listed as the "DATE".

GOVERNMENTAL POLICIES

2.5

15

TITLE: Rules and Regulations to Implement Executive Order 215

DATE OF POLICY: 06/01/89

TYPE OF POLICY:

POWER GENERATION:	X	ENVIRONMENT/SAFETY:	X
POWER SALE:	X	EQUIPMENT IMPORT:	-
INTERACTION WITH THE GRID:	X	POWER PURCHASE PRICE:	X
FUEL USE/PRICE:	X	FOREIGN INVESTMENT/OWNERSHIP:	X

RESPONSIBLE ORGANIZATION: Office of Energy Affairs

OBJECTIVE:

These rules and regulations implement Executive Order 215, providing the framework for private power generation and the provisions for accredited private sector generating facilities.

MAIN FEATURES:

The rules and regulations are divided into six parts. Part I contains the general provisions including definitions of terms; a statement of policy; qualifications with respect to ownership, facility classification, size and economic criteria; the process of accreditation; power purchase, sale and interconnection obligations; rates for purchase and sale; operating standards; environmental concerns; contract terms and other matters. Part II contains specific provisions for mini-Private Sector Generation Facilities (PSGFs) with generating capacities of less than 1000 kW. Part III contains specific provisions for cogeneration and renewable resource PSGFs. Part IV contains provisions for Block Power Production Facilities (BPPF). Part V contains rules governing generating facilities owned, constructed, operated and maintained by utilities other than the National Power Corporation (NPC). Part VI contains general provisions for the implementation and revision of the rules and regulations. The rules govern private entities, including foreign investors teaming up with Filipino corporations, cooperatives, or similar associations. Qualified PSGFs will be under the jurisdiction of either NPC (for those operating within NPC's grid) or the National Electrification Administration. The guidelines allow the connecting utility to review the design and monitor the construction of any PSGF. The connecting utility must interconnect the accredited PSGF and purchase both energy (expressed in kWh) and capacity (expressed in kW) made available by the owner of the PSGF. The cost of interconnection and maintenance for a mini-PSGF shall be shouldered by NPC or the affected utility. PSGFs of greater than 1000 kW capacity must operate in a cogeneration mode, or rely on renewable resources or indigenous fuel sources. PSGFs shall be limited to the size of the largest NPC unit in a grid or 10 percent of the peak demand or as allowed by NPC. The larger PSGFs must bear the cost of interconnection and will be reimbursed according to some agreed upon schedule of payments. A BPPF can only sell its output to NPC, and may include the participation of other electric utilities. BPPFs must follow the technical specifications of a particular plant in the National Power Development Program (i.e., NPC's power expansion plan) and must have a lower or equal investment and/or production cost than that of NPC for the same plant. OEA will act as arbiter in resolving disputes between the PSGF and NPC. The rules and regulations took effect June 1, 1989.

DATE UPDATED: 05/23/89

GOVERNMENTAL POLICIES

2.7

TITLE: Executive Order No. 215

DATE OF POLICY: 07/10/87

TYPE OF POLICY:

POWER GENERATION:	X	ENVIRONMENT/SAFETY:	-
POWER SALE:	X	EQUIPMENT IMPORT:	-
INTERACTION WITH THE GRID:	X	POWER PURCHASE PRICE:	-
FUEL USE/PRICE:	X	FOREIGN INVESTMENT/OWNERSHIP:	-

RESPONSIBLE ORGANIZATION: President Aquino

OBJECTIVE:

This Executive Order amends Presidential Directive No. 40 which gives the state-owned National Power Corporation (NPC) sole authority to construct generating facilities and transmission lines.

MAIN FEATURES:

Section 1 of the order gives the National Power Corporation (NPC) primary responsibility for the development of the country's power grids and the development of the associated generating facilities in Luzon, Visayas and Mindanao, including the major islands of the country. Private corporations, cooperatives or similar institutions may construct and operate cogeneration units or other electric generating facilities to sell power to the grid. They may also construct electric generating facilities intended for internal use but which will sell excess to the grid and electric generating facilities which will not connect directly to the grid but which will sell directly or indirectly to end-users. Section 2 states that NPC will formulate rules and regulations to govern private sector involvement in power generation, where generated electricity is to be connected to the grid. The National Electrification Administration will be responsible for facilities which are not to be connected to the grid. Section 3 appoints the Office of Energy Affairs to ensure that the provisions of this order are made effective.

DATE UPDATED: 02/14/89

TITLE: Creation of the Energy Coordinating Council

DATE OF POLICY: 1968

TYPE OF POLICY:

POWER GENERATION:	X	ENVIRONMENT/SAFETY:	-
POWER SALE:	-	EQUIPMENT IMPORT:	-
INTERACTION WITH THE GRID:	-	POWER PURCHASE PRICE:	-
FUEL USE/PRICE:	-	FOREIGN INVESTMENT/OWNERSHIP:	-

RESPONSIBLE ORGANIZATION: Government of the Philippines

OBJECTIVE:

The objective of creating the Energy Coordinating Council (ECC) is to coordinate the activities of the principal energy implementing agencies in the Philippines.

MAIN FEATURES:

The organizations affected by the Economic Coordinating Council include the Philippine National Oil Corporation, the National Power Corporation, the National Electrification Administration, and the Office of Energy Affairs. The Council is chaired by the Executive Secretary of the Government of the Philippines.

DATE UPDATED: 02/15/89

GOVERNMENTAL POLICIES

2.8

TITLE: Omnibus Investments Code of 1987 (E.O. 226)

DATE OF POLICY: 1987

TYPE OF POLICY:

POWER GENERATION:	-	ENVIRONMENT/SAFETY:	-
POWER SALE:	-	EQUIPMENT IMPORT:	-
INTERACTION WITH THE GRID:	-	POWER PURCHASE PRICE:	-
FUEL USE/PRICE:	-	FOREIGN INVESTMENT/OWNERSHIP:	X

RESPONSIBLE ORGANIZATION: Board of Investments

OBJECTIVE:

To regulate and provide incentives for foreign investment in Philippine enterprises.

MAIN FEATURES:

Book I of the Omnibus Investments Code offers a comprehensive scheme of benefits for registered enterprises in priority areas of economic activity. Foreign investments are allowed up to 40 percent of the outstanding voting capital stock of a registered enterprise in any area declared as preferred "non-pioneer" in the Investment Priority Plan (IPP). This priority may be waived if 70 percent of production is for export. Enterprises in preferred "pioneer" areas under the IPP may be owned 100 percent by foreign nationals, subject to constitutional and/or statutory limitations. Book II regulates the entry of foreign investments in excess of 40 percent. In granting approval under Book II, the Board of Investments assesses whether the enterprise (1) is consistent with the IPP; (2) contributes sound and balanced development of the economy on a sustainable basis; (3) does not conflict with the Constitution or any other laws; (4) is not already adequately exploited by Filipinos; and (5) does not promote monopolies or combinations which restrain trade.

DATE UPDATED: 12/15/89

TITLE: Privatization Plan of Meralco; Memorandum of Agreement

DATE OF POLICY: 06/23/88

TYPE OF POLICY:

POWER GENERATION:	-	ENVIRONMENT/SAFETY:	-
POWER SALE:	-	EQUIPMENT IMPORT:	-
INTERACTION WITH THE GRID:	-	POWER PURCHASE PRICE:	-
FUEL USE/PRICE:	-	FOREIGN INVESTMENT/OWNERSHIP:	-

RESPONSIBLE ORGANIZATION: Committee on Privatization

OBJECTIVE:

The objective is to privatize Manila Electric Corp., a public utility serving the metro-Manila area.

MAIN FEATURES:

The Memorandum of Agreement formalizes the Government of the Philippines' intentions to privatize the Manila Electric Corporation (Meralco). Under the Agreement, the Government will sell shares in the utility to a consortium led by the Bank of the Philippine Islands and Morgan Guarantee Trust. Under the second phase of the scheme, Meralco shares will be sold to small investors through the stock exchange. The first of three stages in the divestiture, the offering of three million common shares from the unissued portion of capital stock to the power utility's regular employees and retirees, was conducted in October 1989. The second stage involves the distribution of eleven million shares to residential customers. The final stage involves selling 7.5 million shares to the general public.

DATE UPDATED: 12/15/89

TITLE: Investment Priority Plan of 1989

DATE OF POLICY: 1989

TYPE OF POLICY:

POWER GENERATION:	X	ENVIRONMENT/SAFETY:	-
POWER SALE:	-	EQUIPMENT IMPORT:	X
INTERACTION WITH THE GRID:	-	POWER PURCHASE PRICE:	-
FUEL USE/PRICE:	X	FOREIGN INVESTMENT/OWNERSHIP:	X

RESPONSIBLE ORGANIZATION: Board of Investments

OBJECTIVE:

To promote foreign and local investment in energy projects in the Philippines.

MAIN FEATURES:

Under the Investment Priority Plan of 1989 the following energy-related projects have been assigned pioneer status (P), i.e., allowing 100 percent foreign ownership; and/or non-pioneer (NP), i.e., less than 100 percent foreign ownership. The qualified energy project activities are: production of ethanol for fuel (P); production of fuel or energy through conversion of biomass, coal or charcoal (P/NP); installation of plants using coal, geothermal, or other non-conventional fuels (or the conversion of existing manufacturing plants/equipment for the use of coal or non-conventional fuel) (P); cogeneration plants (P/NP); power generating plants (P/NP); waste heat recovery plants (NP); manufacturing equipment for the production and/or utilization of solar energy, power, alcohol, biogas, geothermal steam or hot water, wind, coal-derived fuels, or other non-conventional fuels (P/NP). Pioneer enterprises are required to have 60 percent Filipino ownership within a prescribed number of years. Incentives under the Investment Priority Plan include income tax holiday (P-6 years, NP-4 years), import duty exemption, tax credit on domestic capital equipment, 50 percent deduction of local labor costs, contractor tax exemption, simplified customs procedures, extended period for use of foreign nationals, and exemption from wharfage dues and export tax.

DATE UPDATED: 12/15/89

PRIVATE POWER PROJECTS

2.10

PROJECT NAME: Hopewell Gas Turbine Power Plant

LOCATION: Navotas Shipping Complex, Metro Manila
CONTACT: Hopewell Energy, c/o SGV & Co., Ayala Ave., Makati, Metro Manila
STATUS: OPERATING

TECHNICAL DETAILS

FINANCIAL DETAILS

CAPACITY (MW): 200.	PROJECT COST (1988) IN US \$: 4.1E7
TYPE OF POWER PLANT: Gas turbine	FOREIGN EXCHANGE COST:
FUEL: OIL	DOMESTIC CURRENCY COST:
SYNCHRONIZED WITH THE GRID: Y	EXCHANGE RATE (1988): U.S. \$1.00 = 21.

PROJECT DEVELOPMENT INFORMATION

PROPOSAL DATE: 1988	DESIGN DATE:
FEASIBILITY STUDY DATE:	ENGINEERING FIRM:
CONSULTANT:	EQUIPMENT TYPE: Gas Turbine
UTILITY/OWNER AGREEMENT: (Y) DATE: 11/88	SUPPLIER: Westinghouse
UTILITY: National Power Corporation	

EXPECTED COMMISSIONING DATE: August 1990

DESCRIPTION:

In April 1988, Hopewell Holdings Ltd., signed a Letter of Intent issued by the National Power Corporation to negotiate the development on a build-operate-transfer (BOT) basis a 200 MW gas turbine power plant, using second-hand Westinghouse gas turbines. The Power Purchase Agreement and the project agreement were signed in November of the same year. On February 6, 1989 the Philippine Monetary Board approved the 12 year BOT contract between NPC and Hopewell Project Management Co. Ltd. of Hong Kong. The 200 MW generating capacity plant will be used as a peaking facility, with all electricity being purchased by NPC. NPC will pay Hopewell a capacity fee plus an energy fee for actual purchases. NPC will also provide the site and all fuel for generation of electricity at no cost. The Philippine government must guarantee all aspects of NPC purchases and payment. The total project cost is estimated to be US \$41 million. To finance the project Hopewell has borrowed a total of \$30 million from the Asian Development Bank (ADB) and International Finance Corporation (IFC), and other commercial foreign and domestic lenders. The total equity of the project is US \$11 million. The shareholders of the project are Hopewell (US \$6.611 million), Citicorp (US \$2.189 million), ADB (US \$1.1 million), IFC (US\$ 1.1). As of July 1989, all of the project financing had been finalized and the only remaining item is board approval of the ADB loan. Citicorp is serving as financial advisor to Hopewell. The first turbine began operating in July 1990. Some of the power generation equipment was damaged in a storm while being shipped to the Philippines. The project is registered on a "Pioneer" basis (100% foreign ownership) with the Board of Investments.

DATE UPDATED: 07/01/90

PROJECT NAME: Calacca Coal-fired Plant

LOCATION: Calacca, Luzon
CONTACT: National Power Corporation
STATUS: ACTIVE

TECHNICAL DETAILS	FINANCIAL DETAILS
CAPACITY (MW): 300.	PROJECT COST (1989) IN :
TYPE OF POWER PLANT: Boiler/steam turbine	FOREIGN EXCHANGE COST:
FUEL: Coal	DOMESTIC CURRENCY COST:
SYNCHRONIZED WITH THE GRID: Y	EXCHANGE RATE (1989): U.S. \$1.00 = 21.6

PROJECT DEVELOPMENT INFORMATION

PROPOSAL DATE:	DESIGN DATE:
FEASIBILITY STUDY DATE:	ENGINEERING FIRM:
CONSULTANT:	EQUIPMENT TYPE:
UTILITY/OWNER AGREEMENT: () DATE:	SUPPLIER:
UTILITY:	

EXPECTED COMMISSIONING DATE:

DESCRIPTION:

This project was initially intended to be a 300 MW coal plant, built and operated by the National Power Corporation (NPC). NPC then reconsidered its plans and solicited proposals for a minimum of one 300 MW unit to be developed by the private sector on a BOT basis. The proposals could for more than one unit, each with a capacity of up to 350 MW. The project will be located in either Bataan, Zambales or Batangas. The units are to be operational by 1993. A bidders conference was held April 20, 1989, in Manila. NPC issued a request for proposals on November 5, 1989. NPC sought international bids in an effort to negotiate a lower price for the plant. A total of 30 firms responded to the RFP. Of these, 14 firms received pre-qualification notification. Currently, NPC is negotiating with the sponsors of two proposed 350 MW coal-fired power plants in response to this solicitation. Hopewell Energy (Hong Kong) and Asea Brown Boveri (Sweden) are the sponsors of one of the proposed projects. The other is sponsored by Mitsubishi (Japan).

DATE UPDATED: 06/06/90

PROJECT NAME: Smokey Mountain Project

LOCATION: Metro Manila

CONTACT: Jesus Francisco, MERALCO, Ortiga Ave., Pasig, Metro Manila

STATUS: ACTIVE

TECHNICAL DETAILS

FINANCIAL DETAILS

CAPACITY (MW): 30.	PROJECT COST (1989) IN :
TYPE OF POWER PLANT: Boiler/steam turbine	FOREIGN EXCHANGE COST:
FUEL: Solid waste	DOMESTIC CURRENCY COST:
SYNCHRONIZED WITH THE GRID: Y	EXCHANGE RATE (1989): U.S. \$1.00 = 21.6

PROJECT DEVELOPMENT INFORMATION

PROPOSAL DATE:	DESIGN DATE:
FEASIBILITY STUDY DATE:	ENGINEERING FIRM: Lohning Brothers Philippines
CONSULTANT:	EQUIPMENT TYPE:
UTILITY/OWNER AGREEMENT: () DATE:	SUPPLIER:
UTILITY: Manila Electric Co. (MERALCO)	

EXPECTED COMMISSIONING DATE: 1991

DESCRIPTION:

Lohning Brothers Philippines (Australia) received temporary accreditation to build a 30 MW solid waste-fired power project at the Smokey Mountain landfill in Metro Manila. Lohning Brothers are negotiating a power purchase agreement with Manila Electric Co. (MERALCO) at 90 percent of MERALCO's average selling price. NPC has tentatively agreed to purchase the project's electricity if an agreement is not reached with MERALCO. The city government issued a permit in August 1989 to Lohning Brothers to begin clearing 40,000 square meters of the Smokey Mountain dumpsite and erect a waste incinerator and generator unit. The project will be run privately for 30 years, after which it will be turned over to the Manila government.

DATE UPDATED: 01/31/90

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PROJECT NAME: Union Ajinomoto Project

LOCATION: 80, Ugong, Pasig, Metro Manila

CONTACT: Mr. Leonard Ty, Union Ajinomoto, 331 Sen. Gil Puyat Ave., Makati, M.M.

STATUS: ACTIVE

TECHNICAL DETAILS

FINANCIAL DETAILS

CAPACITY (MW):	PROJECT COST (1990) IN P	:	1.07E8
TYPE OF POWER PLANT: Boiler/steam turbine	FOREIGN EXCHANGE COST:		
FUEL:	DOMESTIC CURRENCY COST:		
SYNCHRONIZED WITH THE GRID:	EXCHANGE RATE (1990): U.S. \$1.00 =		22.5

PROJECT DEVELOPMENT INFORMATION

PROPOSAL DATE:	DESIGN DATE:
FEASIBILITY STUDY DATE:	ENGINEERING FIRM:
CONSULTANT:	EQUIPMENT TYPE:
UTILITY/OWNER AGREEMENT: () DATE:	SUPPLIER:
UTILITY:	

EXPECTED COMMISSIONING DATE: April 1990

DESCRIPTION:

Union Ajinomoto received accreditation as a private sector generating facility (PSGF). The venture is registered with the Board of Investment on a "non-pioneer" basis with ownership split 50/50 by Filipino and Japanese partners.

DATE UPDATED: 01/31/90

PRIVATE POWER OPPORTUNITIES

2.15

v

PROJECT NAME: PNOC Geothermal Projects

LOCATION:

STATUS: ACTIVE

CONTACT: Samson Javellana, PNOC, Meritt Road, Fort Bonifacio, Metro Manila

CAPACITY (MW): 730.

FUEL: Steam

POWER SYSTEM: Geothermal

FUEL SOURCES: Indigenous wells

ELECTRICITY USAGE: Sales to the grid

GOVERNMENT/UTILITY CLEARANCE:

OWNERSHIP: The Philippines National Oil Corporation (PNOC) is seeking joint venture partners to develop numerous sites. PNOC would retain a 60 percent share of resource development, as required by the Philippine Constitution.

PROJECT COST/FINANCING:

The projected costs of developing the Mt. Pinatubo and Mt. Natib geothermal sites for power generation is between \$200 million and \$250 million. Some financing may be available through the \$390 million World Bank energy sector loan.

DESCRIPTION:

The Philippine National Oil Corporation (PNOC) has advertised its plans to invite foreign and local joint venture partners to develop geothermal wells, build and operate geothermal power plants, and sell power to the National Power Corp. PNOC has identified 22 sites, five of which have a proven capacity of 730 MW. The remaining sites have an estimated potential capacity of between 380 and 1880 MW. The detailed framework for the arrangements is expected in 1990.

DATE UPDATED: 12/27/89

COGENERATION PROJECTS

2.17

PROJECT NAME: Caltex-Cogentrix Project

COMPANY: Batangas Cogeneration Co. - formerly Cogentrix Philippines
 CONTACT: Cogentrix, Inc.
 TYPE OF PLANT: Refinery
 LOCATION: San Pascual, Batangas
 STATUS: ACTIVE

CAPACITY (MW): 220.	PROJECT COST (1989 IN US \$): 3.4E8
POWER SYSTEM: Boiler/steam turbine	FOREIGN EXCHANGE:
FUEL: Coal	DOMESTIC CURRENCY:
USE OF HEAT: Refinery	EXCHANGE RATE (1989): US \$1.00 = 21.6
HEATING MEDIUM: Steam	
CONNECTED TO THE GRID: Y	
EXPORT EXCESS ELECTRICITY: Y	

PROJECT DEVELOPMENT STATUS:

FEASIBILITY STUDY DATE:	DESIGN DATE:
CONSULTANT:	ENGINEERING FIRM:
UTILITY/OWNER AGREEMENT () DATE:	EQUIPMENT TYPE: Boiler, steam turbine
UTILITY: NPC	SUPPLIER: Detroit Stoker, G.E., Detroit Stoker,

EXPECTED COMMISSIONING DATE:

DESCRIPTION:

Batangas Cogeneration Co. ("Batangas"), formerly Cogentrix Philippines, will be composed of Cogentrix inc. (USA), General Electric (USA), Detroit Stoker (USA), Foster Wheeler (USA) and other major U.S. manufacturing companies. Batangas is the local project company. Cogentrix, Inc. is the overall project management company and will be responsible, contractually, for management of Batangas, during construction and after the project becomes operational. The facility is to be located in the province of Batangas, on property owned by Caltex-Philippines ("Caltex"). The facility will produce electricity which will be sold to the National Power Corporation ("NAPOCOR") pursuant to a Power Purchase Agreement which is currently being finalized, and which will reflect terms of a signed Letter of Understanding between Cogentrix and NAPOCOR. Process steam will be sold to Caltex. The 220MW project will burn foreign coal in eight 250,000 lb/hr boilers supplying steam to four 55 MW steam turbines. The proposed project is estimated to cost US \$340 million. The plant has been accredited as a private sector generating facility (PSGF). The project is on hold pending commitments by additional investors. Cogentrix is considering selling the rights to the project to interested developers.

DATE UPDATED: 07/13/90

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PROJECT NAME: EBASCO International Cogeneration Projects

COMPANY: EBASCO International
CONTACT: Carl F. Whitehead, Senior Vice President, EBASCO
TYPE OF PLANT: Various
LOCATION: Luzon
STATUS: ACTIVE

CAPACITY (MW):	PROJECT COST (19 IN):
POWER SYSTEM: Boiler/steam turbine	FOREIGN EXCHANGE:
FUEL:	DOMESTIC CURRENCY:
USE OF HEAT: Process heating	EXCHANGE RATE (19): US \$1.00 =
HEATING MEDIUM: Steam	
CONNECTED TO THE GRID: Y	
EXPORT EXCESS ELECTRICITY: Y	

PROJECT DEVELOPMENT STATUS:

FEASIBILITY STUDY DATE: September 1988	DESIGN DATE: January '89
CONSULTANT: EBASCO	ENGINEERING FIRM:
UTILITY/OWNER AGREEMENT (N) DATE:	EQUIPMENT TYPE: Waste heat boilers
UTILITY: NPC	SUPPLIER:

EXPECTED COMMISSIONING DATE:

DESCRIPTION:

EBASCO International has had initial discussions with the Office of Energy Affairs (OEA) to develop a series of packaged cogeneration projects. Four or five industrial sites are considered feasible for installing cogeneration systems and selling the excess power to the Luzon grid. There have been no recent developments on this project.

DATE UPDATED: 11/10/88

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PROJECT NAME: Nestle's Philippines Cogeneration

COMPANY: Nestle's Philippines
CONTACT:
TYPE OF PLANT: Food Processing
LOCATION: Laguana, southern Luzon
STATUS: ACTIVE

CAPACITY (MW): 4.	PROJECT COST (19 IN): :
POWER SYSTEM: Diesel generator	FOREIGN EXCHANGE:
FUEL: oil	DOMESTIC CURRENCY:
USE OF HEAT: Food processing	EXCHANGE RATE (19): US \$1.00 =
HEATING MEDIUM:	
CONNECTED TO THE GRID: N	
EXPORT EXCESS ELECTRICITY: N	

PROJECT DEVELOPMENT STATUS:

FEASIBILITY STUDY DATE:	DESIGN DATE:
CONSULTANT:	ENGINEERING FIRM:
UTILITY/OWNER AGREEMENT () DATE:	EQUIPMENT TYPE:
UTILITY: MERALCO	SUPPLIER:

EXPECTED COMMISSIONING DATE:

DESCRIPTION:

Nestle's Philippines received temporary accreditation as a private sector generating facility (PSGF) for a 4 MW cogeneration system at its food processing facility in southern Luzon. The project will be fueled by bunker "C" fuel oil for normal operations and diesel fuel for start-up. The Nestle's plant will continue to purchase 11.3 MW from Manila Electric Company (MERALCO).

DATE UPDATED: 01/31/90

PROJECT NAME: P&G-PMC Project

COMPANY: Proctor and Gamble, Philippines Manufacturing Corp.
 CONTACT: Mr. Alex Keller, P&G-PMC, 777 Paseo de Roxas, Makati, Metro Manila
 TYPE OF PLANT: Manufacturing
 LOCATION: Tondo, Metro Manila
 STATUS: OPERATING

CAPACITY (MW): 4.	PROJECT COST (1989 IN P): 5.695E7
POWER SYSTEM: Boiler/steam turbine	FOREIGN EXCHANGE:
FUEL: Ag. waste	DOMESTIC CURRENCY:
USE OF HEAT: Process heat	EXCHANGE RATE (1989): US \$1.00 = 21.6
HEATING MEDIUM: Steam	
CONNECTED TO THE GRID: Y	
EXPORT EXCESS ELECTRICITY: N	

PROJECT DEVELOPMENT STATUS:

FEASIBILITY STUDY DATE: 1985	DESIGN DATE: 1985
CONSULTANT: Stanley Consultants	ENGINEERING FIRM:
UTILITY/OWNER AGREEMENT (N) DATE:	EQUIPMENT TYPE: Steam turbine
UTILITY: MERALCO	SUPPLIER:

EXPECTED COMMISSIONING DATE: March 1986

DESCRIPTION:

This cogeneration demonstration project was funded by the U.S. Agency for International Development (USAID), as part of the Philippines Ministry of Energy, Bureau of Energy Development project, "Cogeneration System and Interconnection of Independent Power Producer to the National Grid." The project included conversion of an oil-fired boiler as a demonstration system in 1985 by the Proctor & Gamble Philippine Manufacturing Corporation (P&G-PMC). It was intended to be a full scale demonstration of biomass-fired cogeneration and interconnection with the utility grid. The system was completed in March 1986, but has operated at less than full capacity. An agreement was never finalized between P&G-PMC and MERALCO (the local utility) regarding interconnection and sales of excess electricity, since P&G did not have any excess electricity to sell to the grid. The project is registered with the Board of Investments on a Pioneer (100% foreign ownership) basis.

DATE UPDATED: 01/04/89

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PROJECT NAME: Philippine Refinery Co. Cogeneration Project

COMPANY: Philippine Refinery Company, Inc.

CONTACT:

TYPE OF PLANT: Chemical manufacturing

LOCATION: Raco, Metro Manila

STATUS: ACTIVE

CAPACITY (MW):	PROJECT COST (19 IN):
POWER SYSTEM: Boiler/steam turbine	FOREIGN EXCHANGE:
FUEL: Oil	DOMESTIC CURRENCY:
USE OF HEAT: Chemical manufacturing	EXCHANGE RATE (19): US \$1.00 =
HEATING MEDIUM: Steam	
CONNECTED TO THE GRID:	
EXPORT EXCESS ELECTRICITY:	

PROJECT DEVELOPMENT STATUS:

FEASIBILITY STUDY DATE:	DESIGN DATE:
CONSULTANT:	ENGINEERING FIRM:
UTILITY/OWNER AGREEMENT () DATE:	EQUIPMENT TYPE:
UTILITY:	SUPPLIER:

EXPECTED COMMISSIONING DATE:

DESCRIPTION:

Philippine Refining Company, Inc. (PRC) currently operates a cogeneration system at its chemical plant in Raco, Metro Manila. The project was recently accredited as a private sector generating facility (PSGF), allowing PRC to interconnect the facility with the grid. The project is registered with the Board of Investments on a "non-pioneer" basis.

DATE UPDATED: 01/30/90

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PROJECT NAME: Goodyear Philippines Cogeneration Project**LOCATION:****CONTACT:** Richard Lee, Goodyear, Bo. Almanza, Las Pines, Metro Manila**TYPE OF PLANT:****TYPE OF SYSTEM:****NEW INSTALLATION/RETROFIT:****CAPACITY (MW):****FUEL:** Biomass**USE OF HEAT:****CONNECTED TO THE GRID:****EXPORT EXCESS ELECTRICITY :****INTERCONNECTION ISSUES:** No development**PROJECT FINANCING:** No development**DESCRIPTION:**

The Philippines Office of Energy Affairs identified this project in a survey of energy intensive industries. There has been no development of this project.

DATE UPDATED: 12/28/89**PROJECT NAME: Litton Mills Cogeneration Project****LOCATION:****CONTACT:** Bessie Templo, Litton Mills, CFC Bldg., Pasig, Metro Manila**TYPE OF PLANT:** Textile mill**TYPE OF SYSTEM:** Diesel generator**NEW INSTALLATION/RETROFIT:** n**CAPACITY (MW):** 4.**FUEL:****USE OF HEAT:** Hot water**CONNECTED TO THE GRID:****EXPORT EXCESS ELECTRICITY :****INTERCONNECTION ISSUES:** No development**PROJECT FINANCING:** Project is estimated to cost \$US 4.3 million. Litton Mills has applied for a Technology Transfer for Energy Management (TTEM) project loan.**DESCRIPTION:**

The Philippines Office of Energy Affairs identified this project in a survey of energy intensive industries. There has been no development of this project.

DATE UPDATED: 12/28/89

PROJECT NAME: Republic Flour Mill Cogeneration Project**LOCATION:**

CONTACT: Reynaldo Concepcion, V.P., Republic Flour Mills, Metro Manila, 81

TYPE OF PLANT: Flour milling operation

TYPE OF SYSTEM: Diesel generator

NEW INSTALLATION/RETROFIT: N	USE OF HEAT:
CAPACITY (MW): 4.	CONNECTED TO THE GRID:
FUEL:	EXPORT EXCESS ELECTRICITY :

INTERCONNECTION ISSUES:

PROJECT FINANCING: Republic Flour Mill has applied for a Technology Transfer for Energy Management (TTEM) project loan.

DESCRIPTION:

The Philippines Office of Energy Affairs identified this project in a survey of energy intensive industries. Republic Flour is seeking bids from equipment suppliers for the diesel generator and heat recovery system.

DATE UPDATED: 12/28/89

PROJECT NAME: San Miguel Canlubang Project**LOCATION:** Canlubang

CONTACT: Reynaldo S. Palmario, San Miguel Corp.

TYPE OF PLANT: Manufacturing/beer bottling

TYPE OF SYSTEM: Boiler/steam turbine

NEW INSTALLATION/RETROFIT: N	USE OF HEAT: Process steam
CAPACITY (MW): 15.	CONNECTED TO THE GRID:
FUEL: Diesel	EXPORT EXCESS ELECTRICITY :

INTERCONNECTION ISSUES: The project will distribute power to contiguous SMC industrial facilities.

PROJECT FINANCING: San Miguel is expected to provide partial financing for the project and is looking for other investors.

DESCRIPTION:

In early 1989, the San Miguel Corporation (SMC) issued a request for proposals for a 8-15 MW electric and 75,000-150,000 pounds per hour steam cogeneration plant to be located 50 km south of Manila. The electricity and process steam will be used in nearby SMC industrial facilities including a beer bottling plant, a metal closure and lithography plant, and a flexible tube packaging plant. SMC may increase the size of the facility in later years to sell power to the grid or to other nearby industries. This project is one of three generic RFP's issued by San Miguel for cogeneration projects.

DATE UPDATED: 03/08/90

PROJECT NAME: San Miguel Polo Project

LOCATION: Metro Manila
 CONTACT: Reynaldo S. Palmerio, San Miguel Corp.
 TYPE OF PLANT: Beer brewery
 TYPE OF SYSTEM: Boiler/steam turbine

NEW INSTALLATION/RETROFIT: N	USE OF HEAT: Process steam
CAPACITY (MW): 15.	CONNECTED TO THE GRID:
FUEL:	EXPORT EXCESS ELECTRICITY :

INTERCONNECTION ISSUES: The project will distribute power to contiguous SMC industrial facilities.

PROJECT FINANCING: San Miguel is expected to provide partial financing for the project and is looking for other investors.

DESCRIPTION:

In early 1989, the San Miguel Corporation (SMC) issued a request for proposals for 8-15 electric and 75,000-150,000 pounds per hour steam cogeneration plant to be located in Metro Manila area. The electricity and process steam will be used in a nearby SMC beer brewery. SMC may increase the size of the facility in later years to sell power to the grid or to other nearby industries. This project is one of three generic RFPs issued by San Miguel for cogeneration projects.

DATE UPDATED: 03/08/90

PROJECT NAME: San Miguel San Fernando Project

LOCATION: San Fernando, 110 km north of Manila.
 CONTACT: Reynaldo S. Palmerio, SMC
 TYPE OF PLANT: Food processing/brewery
 TYPE OF SYSTEM: Boiler/steam turbine

NEW INSTALLATION/RETROFIT: N	USE OF HEAT: Process steam
CAPACITY (MW): 15.	CONNECTED TO THE GRID:
FUEL: Diesel, biomass	EXPORT EXCESS ELECTRICITY :

INTERCONNECTION ISSUES: The project will provide electricity and process steam to contiguous SMC industrial operations.

PROJECT FINANCING: San Miguel is expected to provide partial financing for the project and is looking for other investors.

DESCRIPTION:

In early 1989 the San Miguel Corp (SMC) issued a request for proposals for a 8-15 MW electric and 75,00-150,000 pounds per hour steam cogeneration plant to supply electricity and process steam to a beer brewery plant, a poultry processing plant, a fruit puree plant, and a shrimp processing plant in San Fernando. Developers are given the option to propose a cogeneration plant that is either diesel or biomass-fired. This project is one of three generic RFP's issued by San Miguel for cogeneration projects.

DATE UPDATED: 03/08/90

PROJECT NAME: Universal Robina Cogeneration Project

LOCATION:

CONTACT: President, Universal Robina Corp., CFC Bldg, Pasig, Metro Manila

TYPE OF PLANT:

TYPE OF SYSTEM:

NEW INSTALLATION/RETROFIT: N	USE OF HEAT:
CAPACITY (MW): 4.	CONNECTED TO THE GRID:
FUEL:	EXPORT EXCESS ELECTRICITY :

INTERCONNECTION ISSUES: No development

PROJECT FINANCING: Project cost is estimated at P86.625 (\$US 1.88 million).

DESCRIPTION:

The Philippines Office of Energy Affairs identified this project in a survey of energy intensive industries.

DATE UPDATED: 12/28/89

GOVERNMENT CONTACTS

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GOVERNMENT CONTACTS

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BIBLIOGRAPHY

2.32

TITLE: Cogeneration in Developing Countries**AUTHOR:**

CORPORATE AUTHOR: RCG/Hagler, Bailly, Inc.
SPONSOR: A.I.D./Office of Energy
PUBLISHER: Energy Conservation Services Program
PUBLICATION DATE: May 1986
DOCUMENT HOLDER: RCG/Hagler, Bailly, Inc.

ABSTRACT:

This report analyzes the prospects and problems of cogeneration as an alternative power supply and energy conservation scheme in developing countries. The report first estimates the cogeneration potential in selected A.I.D.-assisted countries; reviews the involvement of international development organizations, and American manufacturers; and discusses the economic, technical, and institutional factors that affect cogeneration development in developing countries. Finally, the report discusses the role of A.I.D. in promoting private sector involvement in cogeneration development as a way to expand power supply and improve fuel efficiency in developing countries.

KEYWORDS: Cogeneration, LDC, private power

TITLE: Cogeneration Potential and Grid Interconnection**AUTHOR:**

CORPORATE AUTHOR: Stanley Consultants
SPONSOR: Philippines Bureau of Energy Development
PUBLISHER:
PUBLICATION DATE: January 1986
DOCUMENT HOLDER: RCG/Hagler, Bailly, Inc.

ABSTRACT:

This study assesses the cogeneration potential, integration of cogeneration utilities, and government policies regarding independent power producers and interconnected utility operations. It includes a case study of the Proctor & Gamble Philippine Manufacturing cogeneration system and discusses the possibility of the project being interconnected with the grid.

KEYWORDS: Cogeneration, Philippines

TITLE: Country Privatization Strategy**AUTHOR:****CORPORATE AUTHOR:** Center for Privatization**SPONSOR:** A.I.D.**PUBLISHER:****PUBLICATION DATE:** June 1987**DOCUMENT HOLDER:** Center for Privatization**ABSTRACT:**

This paper provides a framework and guidelines for use by A.I.D. Missions and governments in less developed countries (LDCs) to: 1) shape and pursue a country privatization strategy; 2) identify and bring about needed policy changes; 3) increase public awareness and understanding; 4) privatize a specific government enterprise/facility/activity; and 5) institutionalize the privatization process within an LDC.

KEYWORDS: Privatization, LDC**TITLE: Financing Private Power Projects****AUTHOR:** William Dykes**CORPORATE AUTHOR:** Citicorp International Ltd. (Hong Kong)**SPONSOR:** U.S. ASEAN Council for Business and Technology, Inc.**PUBLISHER:** Opportunities in Private Electric Power Generation and Energy Conservation in Developing Countries Workshop presentation**PUBLICATION DATE:** July 1989**DOCUMENT HOLDER:** RCG/Hagler, Bailly, Inc.**ABSTRACT:**

The paper lists the advantages of private sector development and ownership of power projects. It also describes the minimum security structure likely to be required by lenders and possible sources of financing. Two case studies are described in detail: 1) the 700 MW Hopewell project at Shajiao, Guangdong, Peoples Republic of China, and 2) 200 MW Hopewell project in Navotas, Metro Manila, Philippines.

KEYWORDS: Private power, financing, Peoples Republic of China, Philippines, Hopewell, Citicorp, S.O.T.

**TITLE: Interim Study Report on the
Build-Operate-Transfer (BOT) Concept in
Implementing Power Projects**

AUTHOR: ASEAN Power Utilities Ad-Hoc Study Team

CORPORATE AUTHOR:

SPONSOR: ASEAN Energy Ministers

PUBLISHER:

PUBLICATION DATE: March 1988

DOCUMENT HOLDER: RCG/Hagler, Bailly, Inc.

ABSTRACT:

This study was undertaken by an Ad-Hoc study team under the direction of the Association of South East Asian Nations (ASEAN) Ministers. The objectives of the paper are 1) to provide a broad understanding on the concept of BOT; 2) to identify and make an objective assessment of its merits and demerits; and 3) to provide a framework for decision making on the applicability of the BOT concept for the region in general as well as for each particular country. The study was conducted by reviewing proposals received by various ASEAN countries to implement power plant projects according to the BOT concept.

KEYWORDS: BOT, ASEAN, Philippines, Indonesia, Thailand, Malaysia, Singapore, Brunei

**TITLE: Power Shortages in Developing Countries:
Magnitude, Impacts, Solutions, and the Role of
the Private Sector**

AUTHOR:

CORPORATE AUTHOR:

SPONSOR: U.S. Agency for International Development

PUBLISHER:

PUBLICATION DATE: March 1988

DOCUMENT HOLDER: RCG/Hagler, Bailly, Inc.

ABSTRACT:

Recognizing that "energy shortfalls are causing a serious constraint to development in over half of all A.I.D.-assisted countries," the Committee on Appropriations of the U.S. House of Representatives requested a report from the U.S. Agency for International Development on the "magnitude of the crisis, its implications for future economic and social development and the potential for U.S. technologies and services to address this problem," including an assessment of "appropriate incentives for private sector participation and the feasibility of an Energy Guaranty Program modeled on A.I.D.'s Housing Guaranty Program." This report analyzes the magnitude, causes, and impacts of power shortages in developing countries, identifies possible solutions, describes a role for the private sector, and identifies an appropriate role for A.I.D.

KEYWORDS: Power sector, LDC, electricity demand, private sector

TITLE: Private Sector Participation in Electric Power

AUTHOR:

CORPORATE AUTHOR: Asian Development Bank

SPONSOR: Asian Development Bank

PUBLISHER:

PUBLICATION DATE: February 1989

DOCUMENT HOLDER: RCG/Magler, Bailly, Inc.

ABSTRACT:

The report surveys the private power activities in India, Indonesia, Malaysia, Pakistan, Philippines, and Thailand. The report addresses issues related to private sector participation in the power sector in terms of the additionality of resources available through the private sector, balance-of-payment implications, resource planning, the role of the national utility, and impacts on tariffs.

KEYWORDS: Asia, India, Pakistan, Philippines, Indonesia, Malaysia, Thailand, private power, privatization, captive power, cogeneration

TITLE: Privatization: A Technical Assessment

AUTHOR: L. Gray Cowen

CORPORATE AUTHOR:

SPONSOR: A.I.D./Office of Policy Development and Program Review

PUBLISHER: Center for Privatization

PUBLICATION DATE: August 1987

DOCUMENT HOLDER: A.I.D./Center for Privatization

ABSTRACT:

This study outlines the advantages of privatization and the barriers that governments in less developed countries (LDCs) face when trying to implement a privatization strategy. The study goes on to define the role that the AID Missions can play in planning the privatization strategy.

KEYWORDS: Privatization, impediments, strategies, LDC

**TITLE: Progress in the ASEAN Region in Overcoming
Barriers to Cogeneration**

AUTHOR: W.K. Foell and R.S. Custodio, Asian Institute of Technology, Bangkok

CORPORATE AUTHOR:

SPONSOR: Asian Institute of Technologies

PUBLISHER: Presented at the Conference on Energy Efficiency Strategies for Thailand

PUBLICATION DATE: March 1988

DOCUMENT HOLDER: RCH/Hagler, Bailly, Inc.

ABSTRACT:

This paper discusses the issues surrounding the potential cogeneration markets in Asia. The paper highlights the key economic/financial and institutional issues of cogeneration, the status of cogeneration development in ASEAN countries, and an assessment of the potential cogeneration market.

KEYWORDS: Cogeneration, ASEAN, Asia, Philippines, Indonesia, Thailand, Singapore, Malaysia, Brunei

**TITLE: The A.I.D. Experience With Independent Power
Generation**

AUTHOR: James B. Sullivan

CORPORATE AUTHOR:

SPONSOR: A.I.D./Office of Energy

PUBLISHER:

PUBLICATION DATE: August 1988

DOCUMENT HOLDER: RCG/Hagler, Bailly, Inc.

ABSTRACT:

This paper, presented at the Central American and Caribbean Workshop on Private Power and Demand Management, discusses A.I.D.'s involvement in energy and energy conservation and demand management, as well as independent power production in developing countries.

KEYWORDS: Caribbean, Central America, private power, A.I.D., LDC

**APPENDIX A: RULES AND REGULATIONS TO IMPLEMENT E.O. 215 ON
PRIVATE SECTOR PARTICIPATION IN THE POWER SECTOR**

**RULES AND REGULATIONS TO IMPLEMENT EXECUTIVE ORDER NO. 215
ON PRIVATE SECTOR PARTICIPATION IN POWER GENERATION**

Pursuant to Section 2 of Executive Order No. 215, the National Power Corporation (NAPOCOR) and the National Electrification Administration (NEA) hereby promulgate the following Rules and Regulations, as approved by the Office of Energy Affairs (OEA).

PART I

GENERAL PROVISIONS OF THE RULES AND REGULATIONS

The succeeding Articles shall include the general provisions to be followed for all types of generating facilities owned by the private sector participating in power generation.

ARTICLE I

**STATEMENT OF POLICY, SCOPE
AND DEFINITION OF TERMS**

SECTION 1. Statement of Policy. The NAPOCOR shall be responsible for the strategic and rational development of the country's power grids including the construction of associated generating facilities and the setting up of transmission line grids in Luzon, Visayas, and Mindanao. However, private corporations, cooperatives or similar associations shall be allowed and encouraged to construct and operate electric generating plants.

SECTION 2. Scope. These Rules and Regulations shall govern the relation between the NAPOCOR, the NEA, and such private corporations, cooperatives or similar associations as may be allowed to acquire, construct and operate electric generating plants and facilities pursuant to Section 1 of the Executive Order.

SECTION 3. Definition of Terms. As used in these Rules and Regulations, the following terms shall have the following respective meanings:

- a. "Avoided Cost" means the incremental investment and/or operating and maintenance and overhead costs that an electric utility would incur, thru putting "no additional capacity and/or operating its own power plants, if such utility does not buy electric energy or capacity or both from a private sector generation facility (PSGF).

- b. "Back-up Power" means electricity supplied by NAPOCOR, or an electric utility to replace electricity ordinarily generated by a private sector generation facility (PSGF) during unscheduled outages of the latter.
- c. "Block Power Production Facility (BPPF)" means a facility which is programmed and included in the NAPOCOR Power Development Program but is owned, constructed and operated by entities from the private sector and whose generated electricity shall be sold solely to NAPOCOR.
- d. "Bottoming-cycle Cogeneration Facility" means a cogeneration facility in which the energy input to the system is first applied to a useful thermal energy process, and the reject heat emerging from the process is then used for power production.
- e. "Capacity" means the load for which a generating unit, generating station, or other electrical apparatus is rated, usually in kilowatts by the manufacturer.
- f. "Cogeneration Facility" means a facility which produces electric energy and forms of useful thermal energy (such as heat or steam), used for industrial, commercial, heating, or cooling purposes, through the sequential use of energy.
- g. "Coincident Maximum Demand" means the maximum demand at the instant of greatest load of NAPOCOR.
- h. "Developmental Plans", refers to and is used interchangeably with the Power Development Program (PDP) of the NAPOCOR.
- i. "Distributing System", means the electric system of an electric utility which delivers electricity from transformation points on the transmission system to the consumers or end-users.
- j. "Electric Cooperative" shall mean a corporation under RA 6038 or PD 269 as amended by PD 1645 or a cooperative supplying or empowered to supply electric service which has heretofore been organized under the Philippine Non-Agricultural Coop. Act. whether converted under P.D. 260 or not.
- k. "Electric Energy", as commonly used in the electric utility industry, means kilowatt-hours.
- l. "Electric Utility System", refers to the distribution system of an electric cooperative, local-government owned and privately-owned electric utility operating within the NAPOCOR and electric utility power grids.

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- m. "Electric Utility", refers to the electric cooperative, local-government-owned and privately-owned electric utility operating within the NAPOCOR grids or other electric systems.
- n. "Franchised Area" shall mean a geographical area franchised to a public service entity, such as: electric cooperative, local government or privately owned electric system.
- o. "Grid" means the electrical system of interconnected transmission lines, substations and generating plants of the National Power Corporation, or the concerned electric utility as the case may be.
- p. "Incremental PSG Power" means electricity supplied by NAPOCOR or an electric utility, regularly used by an owner of a qualified private sector generation facility in addition to that which the latter generates itself. It is the difference between the total electricity requirement of a private sector generator and the amount it generates.
- q. "Interconnection" means the connection of a generating facility or a power distribution facility to an electric utility system or the NAPOCOR grid.
- r. "Interconnection Costs" means the costs of all necessary interconnecting electrical equipment, protective devices and control equipment needed by a private sector generator for its PSGF to permit interconnected operations with NAPOCOR or an electric utility.
- s. "Interruptible Power" means electricity supplied by NAPOCOR or an electric utility to a private sector generator subject to interruption by the former.
- t. "Maintenance Power" means electricity supplied by NAPOCOR or an electric utility, to a private sector generator whose PSGF is undergoing scheduled maintenance work.
- u. "National Electrification Administration or NEA" means the corporation, wholly-owned and controlled by the government, created under the provisions of Presidential Decree No. 269 of 8 October 1979 and tasked primarily to administer the rural electrification program.

- v. "National Power Corporation or NPC" means the corporation, wholly-owned and controlled by the government, formed under the provisions of Republic Act No. 6395 of 10 September 1971 and tasked primarily to undertake the development of hydroelectric generation of power and the production of electricity from nuclear, geothermal and other sources, as well as the transmission of electric power on a nationwide basis.
- w. "Office of Energy Affairs or OEA" means the government agency formed under the provisions of Executive Order No. 193 of 10 June 1987 and be primarily responsible for the formulation, planning, monitoring, implementation of, and coordination of policies and programs in the field of energy. By virtue of Executive Order No. 215, the OEA was given the mandate to review and approve the draft Rules and Regulations to implement the Executive Order No. 215, initially drafted and submitted to the OEA by the NAPOCOR and NEA, after appropriate public consultation with concerned parties including the private sector.
- x. "Peak Demand" means the maximum integrated load demand occurring for thirty (30) minutes continuously.
- y. "Person" means any natural person, firm, association, corporation, business trust and partnership.
- z. "Primary Energy Source" means the fuel used for the generation of electricity, except that such terms do not include:
 - 1. The minimum amounts of fuel required for ignition, start up, testing, flame stabilization, and control uses, and
 - 2. The minimum amounts of fuel required to alleviate or prevent:
 - i. unanticipated equipment outages, and
 - ii. emergencies, directly affecting the public health, safety or welfare, which would result from electric power outages.
- a.1. "Private Sector Generation Facility, (PSGF)" means:
 - 1. any cogeneration and renewable resource power production facility, or
 - 2. any electric generating facility, particularly a Block Power Production Facility (BPPF), intended primarily to sell all its production to the NAPOCOR grids, consistent with the developmental plans formulated by the National Power Corp., or

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3. any electric generating facility that shall use indigenous energy resources as its primary fuel.
- b.1. "Private Sector Generator" refers to the owner and operator of the accredited PSGF.
- c.1. "Purchase" means the purchase of electricity by NAPOCOR or an electric utility from a private sector generator.
- d.1. "Rate" means any price, tariff or charge, as classified by NAPOCOR or the electric utility with respect to the sale or purchase of electricity.
- e.1. "Renewable Energy Sources" means sources of energy that are regenerative or virtually inexhaustible such as biomass, solar, wind, geothermal or hydro, and also means by-product materials that but for their use as a source of energy would be considered waste.
- f.1. "Rules on Sale of Electricity" refers to the procedures set by NAPOCOR for its customers to follow regarding matters on direct connection, billing, billing protest, adjustment clause, payment of bills, and other matters relative to customers' service.
- g.1. "Renewable Resource Power Production Facility (RRPPF)" means a facility which produces electricity by the use of renewable energy resources as its primary energy source.
- h.1. "Sale" means the sale of electricity by NAPOCOR or an electric utility to a private sector generator.
- i.1. "Spinning Reserve" means generating capacity that is on-line and ready to take load, but in excess of the current load of the electric system.
- j.1. "System Emergency" means a condition on NAPOCOR's or an electric utility's system which is likely to result in imminent significant disruption of service to customers or is imminently likely to endanger life or property.
- k.1. "Topping-cycle Cogeneration Facility" means a cogeneration facility in which the energy input to the facility is first used to produce useful power with the reject heat recovered from power production then used to provide useful thermal energy.

- 1.1. "Uncontrollable Forces" mean any occurrence beyond the control of a party which causes that party to be unable to perform its obligations and which the party has been unable to overcome by the exercise of due diligence, including but not limited to flood, drought, earthquake, storm, fire, pestilence, lightning and other natural catastrophes, epidemic, war, riot, civil disturbance or disobedience, action or inaction of legislature, judicial or regulatory agencies, or other proper authority affecting the operation of the PSGFs, failure or sabotage of facilities which have been maintained in accordance with good engineering and operating practices in the Philippines.
- m.1. "Wheeling" means the provision of electric energy transmission services by NAPOCOR or an electric utility for the purpose of enabling the owner of an accredited PSGF to transmit power to another system or end-user.

ARTICLE II

QUALIFICATIONS OF A PRIVATE SECTOR GENERATION FACILITY

SECTION 1. Ownership. Qualifications as to ownership of a PSGF shall be any of the following:

- a. A PSGF may be constructed, owned and operated by private persons, private corporations, cooperatives or similar associations not primarily engaged in the generation or sale of electricity and shall be governed by applicable Philippine Laws on corporations or similar associations as to registration, independent auditing, taxation and other related matters as provided by said laws. Foreign entities may participate in electricity generation subject to applicable Philippine laws.
- b. Private corporations, cooperatives and similar associations primarily engaged in the generation or sale of electric power, referred to in these implementing rules as electric utilities, may own, construct and operate generating facilities but shall be subject to electric utility regulations concerning rates, financial limitations, taxes and other laws applicable to their operations as electric utilities.

For entities availing of the government's Investment Priorities Program, such entities shall be guided by relevant legislation thereto.

SECTION 2. Facility Classification. A Private Sector Generation Facility referred in this Part of these Rules and Regulation shall include the following electric generating plants: -

- a. Cogeneration facilities such as topping-cycle, bottoming-cycle and fossil fuel cogeneration units meeting engineering, operating and efficiency standards as prescribed in Section 5 of this Article;
- b. Renewable Resource Power Production Facilities such as those using biomass, solar, wind, geothermal, hydro or wastes as the primary source of energy; and
- c. Electric generating facilities that shall use indigenous energy resources as their primary fuels.

SECTION 3. Jurisdiction of NAPOCOR and NEA. NAPOCOR shall have jurisdiction over all private power production in areas served by the NAPOCOR grids. NEA shall have jurisdiction over all other areas not served by the NAPOCOR grids.

SECTION 4. Size of Generating Units. The maximum size of a generating unit of a PSGF shall be limited to the existing largest generating unit size or 10% of the coincident maximum demand of the concerned NAPOCOR grid or as allowed by NAPOCOR. Further, for areas within the jurisdiction of NEA, the size of generating units allowed by NEA shall be based on the demand of the electric cooperative in accordance with the Power Expansion Program as approved by NEA.

SECTION 5. Engineering, Operating and Efficiency Standards. A PSGF shall be guided by international-accepted standards in engineering, operations and reliability.

SECTION 6. Economic Criteria. Any proposed electric generating facility can qualify as a PSGF if it can provide a net foreign exchange savings to the nation, by virtue of:

- a. generating electric energy more efficiently or cheaper than can otherwise be generated by existing plants;
- b. using indigenous and/or renewable energy sources; and
- c. accessing lower costs of capital and/or cheaper plant investment.

ARTICLE III

PROCEDURES FOR APPLYING FOR ACCREDITATION AND INTERCONNECTION OF A COGENERATION AND A RENEWABLE RESOURCE POWER PRODUCTION FACILITY AS A PRIVATE SECTOR GENERATION FACILITY

SECTION 1. Accreditation. A Private Sector Generation Facility (PSGF) which meets the qualifications for accreditation set forth in Article II is a qualified PSGF.

SECTION 2. Accreditation by NAPOCOR. The owner or operator of a proposed PSGF within the jurisdiction of NAPOCOR, whether solely for internal use or not and whether the facility is existing or shall be constructed, and whose generating unit is subject to the limitations under Article II hereof, shall apply for accreditation as a qualified PSGF to NAPOCOR. For facilities whose generation is not solely for internal use of the owner, but also for sale to NAPOCOR or electric utilities, NAPOCOR shall determine the franchised electric utility with the nearest distribution facilities to which the PSGF shall be obligated to interconnect. If the nearest electric utility distribution facilities are such that the interconnection would not be cost-effective, NAPOCOR may seek the approval of the OEA to directly connect the PSGF itself.

SECTION 3. Accreditation by the NEA. The owner of a proposed PSGF within the jurisdiction of NEA shall apply for certification and accreditation to the NEA, which shall determine whether the accredited PSGF shall be directly connected to any electric cooperative. In which case the qualified PSGF shall follow the procedures and technical and operational requirements of NEA.

SECTION 4. OEA Monitoring of Accredited PSGFs. A copy of the certificate of accreditation issued by NAPOCOR and NEA relative to foregoing Sections 2 or 3 together with the corresponding technical description shall be promptly forwarded to OEA for monitoring purposes.

SECTION 5. Generation by Electric Utilities. Facilities owned by an electric utility and whose generation is solely for the internal use of the owner electric utility shall be further guided by Part V of these Rules and Regulations.

SECTION 6. Generation by Non-utilities Primarily for Internal Use. Facilities whose generation is intended, primarily for the internal use of the non-utility owner but also plans to sell excess production to the NAPOCOR grid/concerned electric utility shall be further guided by either Part II or Part III as applicable, of these Rules and Regulations when such plan to sell is effected.

SECTION 7. Representation During Accreditation/Negotiation. Where proposals for PSGFs are submitted by persons or entities, foreign or local, other than the organization which is or will be set up to construct, own and operate the facilities, agreement made during any negotiation after accreditation shall not legally bind parties involved thereto until such time when a final contract is agreed upon and signed. Documentary support such as Letters of Intent and Memorandum of Agreement made and signed during any negotiation shall be used as bases in the preparation of the actual contract between NAPOCOR or the electric utility and the Organization, existing or newly created, owning the PSGF.

SECTION 8. Revocation of Qualified Status. NAPOCOR or NEA may revoke the qualified status of a PSGF which has been accredited under this Article if such facility fails to comply with the requirements of these Rules and Regulations or any of the statements contained in its application for certification. Decision of revocation of qualified status shall be done only upon approval of OEA and after the owner of the qualified PSGF has been given due process or the opportunity to explain failure of compliance.

SECTION 9. Application and Negotiation for Interconnection within NAPOCOR grids. In cases where NAPOCOR determines that the generation of an accredited PSGF within the NAPOCOR's jurisdiction should be sold to a concerned electric utility, the owner of said qualified PSGF shall apply and negotiate with the concerned electric utility for interconnection with the latter. If interconnection is hindered by any disagreement, the owner of the PSGF may negotiate with NAPOCOR for the latter to purchase the PSGF's generation itself. NAPOCOR shall then treat the PSGF generation site as a delivery point of NAPOCOR to the electric utility operating near the site where the PSGF is located. If neither NAPOCOR nor any concerned electric utility shall interconnect with the qualified PSGF, then the owner of the PSGF may elevate his case to the OEA for settlement.

Upon accreditation of a PSGF within NAPOCOR's jurisdiction and whose generation is also for sale to NAPOCOR, the owner of said qualified PSGF shall apply and negotiate with NAPOCOR. Any disagreement on any matter that hinders the interconnection of the PSGF with NAPOCOR shall be settled by OEA.

Accredited PSGF whose generation is solely for the owners' internal use, need not apply for interconnection, but may do so if in the future there is a likelihood that sale to NAPOCOR or electric utilities would occur following the provisions of Parts I and either II or III of these Rules and Regulations.

A privately owned electric utility connecting with a PSGF shall submit to the ERB and OEA a copy of any interconnection agreement reached with said PSGF for review and monitoring purposes. An electric cooperative connecting with a PSGF shall submit a copy of any interconnection agreement with said PSGF to the NEA and OEA for review and monitoring purposes. The NAPOCOR shall only furnish OEA a copy of any interconnection agreement with a PSGF for review and monitoring purposes.

It shall mean that the interconnection agreement, in this instance, already includes the agreement reached between the electric utility/NAPOCOR and the owner of the PSGF on matters pertaining to rates of purchase and sales, operating and maintenance schedules, procedures for dispatch, protective and metering devices and other items that are important to both parties.

SECTION 10. Action on Modification of a PSGF. Prior to undertaking any substantial alteration or modification of a PSGF which has been certified under these Rules and Regulations, the owner or operator of such qualified PSGF shall apply to NAPOCOR, or to NEA as the case may be, for a ruling that the proposed alteration would not result in a revocation of the facility's qualified status. The term "substantial alteration or modification of a qualified PSGF" means such alteration, modification or other changes as will materially affect the accuracy of the information submitted pursuant to Section 4 of this Article.

ARTICLE IV

OBLIGATIONS OF NAPOCOR, NEA, ELECTRIC UTILITIES, AND OWNERS OF QUALIFIED PRIVATE SECTOR GENERATION FACILITIES

SECTION 1. Purchase Electricity Energy from Qualified PSGF. NAPOCOR, or concerned electric utilities shall purchase, at rates to be established in accordance with Article V, hereof, any electric energy and capacity which is made available by the owner of a qualified PSGF.

SECTION 2. Purchase by Electric Utility of Power Already Contracted. Any electric utility, with the agreement of the owner of a qualified PSGF and the NAPOCOR or another concerned electric utility, may purchase any electricity that the NAPOCOR or the concerned electric utility is contracted to purchase from said owner of the PSGF under the provision of these Rules and Regulations.

SECTION 3. Sale of Electricity to a Qualified PSGF. NAPOCOR or any concerned electric utility shall sell to any owner of a qualified PSGF electricity requested by the latter, in accordance with Article VI, hereof.

SECTION 4. Interconnection within NAPOCOR grids. The NAPOCOR or any concerned electric utility shall allow such interconnection with any qualified PSGF as may be necessary to accomplish purchases or sales under these Rules and Regulations. Upon approval of the application and effectivity of an agreement for interconnection by the owner of a qualified PSGF and NAPOCOR or any concerned electric utility, the NAPOCOR or the concerned electric utility may issue an order requiring the physical connection of the qualified PSGF to the transmission facilities of NAPOCOR or NEA, or to the distribution system of the concerned electric utility.

SECTION 5. Interconnection within NEA jurisdiction. The NEA shall allow such interconnections with any qualified PSGF as may be necessary to accomplish purchases or sales under these Rules and Regulations. Upon application for interconnection of any qualified PSGF to NEA, the NEA may issue an order requiring:

- a. The physical connection of any qualified PSGF to the distribution facilities of any concerned electric cooperative;
- b. The qualified PSGF to provide at its own expense the necessary interconnecting electrical equipment and devices including associated distribution facilities, melting equipment, protective relays and communication, in accordance with appropriate electrical plans approved by NEA to make an effective physical/electrical interconnection to the system of the electric utility concerned.

SECTION 6. Transmission to Other Electric Utilities (Wheeling). The owner of a qualified PSGF may arrange with the NAPOCOR/any concerned electric utility, to transmit the electricity of the former to a third party (electric utility or end-user). Any third party electric utility or end-user to which such electricity is transmitted shall purchase the same under this Section. The rate for purchase by the third party (electric utility or end-user) to which such electricity is transmitted shall be adjusted to reflect line losses and shall include charges for transmission. A tariff structure for wheeling shall be applied by NAPOCOR or a concerned electric utility to the owner of the PSGF for the use of transmission facilities.

SECTION 7. Safety Requirements. The owner of the PSGF shall provide and install protective devices in their facilities as a safeguard from any NAPOCOR or NEA or electric utility system disturbances.

SECTION 8. Periodic Reporting to NAPOCOR and NEA. The own of the PSGFs shall regularly submit to NAPOCOR or NEA in prescribed form, operating and other information as may be required by NAPOCOR or NEA for monitoring and planning purposes.

ARTICLE V

RATES FOR PURCHASES

SECTION 1. General Provision. NAPOCOR or any electric utility shall not be required to pay more than their avoided cost

SECTION 2. Purchase Rates Qualification. Rates for purchase shall:

- a. Be just and reasonable to the electric customers of NAPOCOR or concerned electric utilities, and in the public interest;
- b. Be in accordance with the guidelines set by NEA, for electric cooperatives, and ERB, for privately owned electric utilities, on this matter for qualified PSGFs where full and/or excess production shall be sold to the systems of concerned electric utilities.

SECTION 3. Adjustments in Financial Accounting. The NAPOCOR or and concerned electric utilities shall accordingly adjust their financial accounting systems and procedures resulting from purchases of electricity from private sector generators. The rate of return on rate base levels shall then be determined after all adjustments have been made and set in place.

SECTION 4. Determination of Avoided Cost. The NAPOCOR and any other utility that purchases PSGF power under these Rules and Regulations shall calculate their avoided costs, not later than three (3) months from the date of effectivity of these Rules and Regulations, and shall make available to the Office of Energy Affairs the data and methodology from which avoided costs have been derived. These data and methodology shall be updated as may be required.

ARTICLE VI

Rates for Sales.

SECTION 1. General Rules. Except for back-up power, rates for sales of NAPOCOR or the concerned electric utility to the qualified PSGF, shall be based on the net interchange of energy between the said qualified PSGF and NAPOCOR or the

electric utility. If said interchange of energy results in requiring the PSGF to pay for electricity used, the applicable rates in this case shall not discriminate against the PSGF in comparison to rates for sales to other customers served by NAPOCOR or the concerned electric utility.

SECTION 2. Services to be Provided to any Qualified PSGF.

a. As contracted with the owner of a qualified PSGF, NAPOCOR or the concerned electric utility shall provide on "as available basis":

1. Incremental PSG power;
2. Back-up power;
3. Maintenance power; and
4. Interruptible power.

b. The NAPOCOR and concerned electric utilities may waive the requirement of the preceding Subsection (2a) if, after notice in the area served by NAPOCOR or NEA or the electric utility, NAPOCOR or NEA or the electric utility demonstrates and finds that compliance with such requirement shall:

1. Impair NAPOCOR's or the electric utility's ability to render adequate service to its customers; or
2. Place a harsh and undue burden on NAPOCOR or the affected electric utility.

SECTION 3. Rates for Back-up Power. Rates for sales of back-up power to PSGF shall be at a rate mutually agreed upon and stipulated in a contract between the owner/proponent of the PSGF and NAPOCOR or the concerned electric utility.

ARTICLE VII

OPERATING STANDARDS, ENVIRONMENTAL CONCERNS
AND OTHER MATTERS

SECTION 1. Standards for Operations and Reliability. The NAPOCOR and the concerned electric utility shall follow established internationally-accepted engineering standard, to ensure safety, system-security and reliability for interconnected system operations. Furthermore, NAPOCOR or NEA and the concerned electric utility shall evaluate and approve the system.

design, adhere to Electrical and Mechanical Engineering standards, as well as physically inspect the power installations and witness the testing and commissioning of the PSGF that will be interconnected to the system to ensure that all necessary equipment are in place and functioning properly.

SECTION 2. Environmental Concerns. Qualified PSGFs shall meet standards on environmental management, including, among others, those on air quality, noise levels, water quality, solid waste, emission balances and controls, land use and esthetics as required by law through appropriate government agencies.

SECTION 3. Contents of Contract. Consistent with these rules and regulations, all contracts between the owners of PSGFs, and NAPOCOR or the concerned electric utility shall include, among others, the following:

- a. Identification of Parties;
- b. Recitals (rationale of contract);
- c. Considerations (general agreements);
- d. Purchase and Sale (stipulation of power purchase and sale);
- e. Conditions of Delivery:
 1. Point of Delivery
 2. Character of Service (technical specifications for expected power output)
 3. Power Factor
 4. Continuity/reliability
- f. Rates for Purchase from Facility and Adjustment clauses;
- g. Rates for Sale to Facility and Adjustment clauses;
- h. Billing Periods and Payment Terms;
- i. Penalty and Discount Clauses;
- j. Rights and Obligations of NAPOCOR/Electric Utility and PSGF;
 1. Ownership, Design, Operation and Maintenance
 2. Construction Requirements
 3. Plans and Specifications

4. Inspection and Tests
 5. Change of Equipment
 - 6. Costs
 7. Control and Protective Apparatus
 8. Location
 9. Delivery and Amount of Production
 10. Notices
 11. Land Rights
 12. Regulatory Approvals
 13. Codes and Standards
 14. Removal of Equipment
 15. Provisions for Contract Violation
- k. Operations;
1. Date of Operation
 2. Operating Procedure
 3. Sell-back Conditions
- l. Safety Requirements;
- m. Force Majeure;
- n. Meter Provisions and Metering Arrangements;
- o. Right to Access for Inspection, etc.;
- p. Liability of Each Party with Respect to Operations;
- q. Duration of Contract and Conditions for Contract Cancellation;
- r. Provision for Security; and
- s. Additional Provisions.

SECTION 4. Force Majeure. Neither party to a contract shall be in default if failure of performance of the terms of the contract is caused by factors due to acts of God, nature or uncontrollable forces.

PART II

SPECIFIC PROVISIONS FOR MINI-PRIVATE SECTOR GENERATION FACILITIES WITH CAPACITY LESS THAN 1000 KILOWATTS

In addition to Article I; Sections 1, 2, 3 and 6 of Article II; Sections 1, 4, 7, 8, 9 and 10 of Article III; Sections 1, 3, 4, 5, 6 and 7 of Article IV; Articles V, VI and VII of Part I of these Rules and Regulations, the following Articles shall guide proponents/owners of PSGFs whose plant capacity is 1000 kilowatts or below.

ARTICLE I

PROCEDURES FOR APPLYING FOR ACCREDITATION AS A PRIVATE SECTOR GENERATION FACILITY

SECTION 1. Accreditation of Mini-PSGFs. All mini-PSGFs served by the NAPOCOR grids shall be accredited by NAPOCOR. For applicants in the provinces, accreditation shall be done by the regional office of NAPOCOR where the proposed facility shall be situated. Accreditation by the NEA for applicants situated in areas not served by the NAPOCOR grids shall follow the provisions set on this matter in Section 3, Article III of Part I of these Rules and Regulations.

SECTION 2. NAPOCOR or NEA Assistance. The NAPOCOR or NEA shall assist the owners of the mini-PSGF in securing/meeting requirements set by various government agencies on matters regarding construction and operation of generating plants.

SECTION 3. Contents of Application. The contents for application for accreditation for a qualified mini-PSGF shall contain the following information:

- a) Name and address of the applicant and locality of the facility;
- b) Facility classification/Plant description;
- c) Plant capacity and generating capability;
- d) Fuel usage;
- e) Equity ownership, and
- f) Any other information that may be needed in the evaluation of proposed mini-PSGF.

SECTION 4. Period of processing. NAPOCOR and NEA shall take action to approve or deny any application for accreditation for qualified mini-PSGF within one (1) month from date of application. Provided all needed information and government approvals have been submitted then.

ARTICLE II

INTERCONNECTION COSTS, SYSTEM EMERGENCIES, AND OPERATING STANDARDS AND OTHER MATTERS

SECTION 1. Interconnection Costs within NAPOCOR grids. NAPOCOR, or the concerned electric utility shall shoulder all costs needed for the realization of the physical connection of the mini-PSGF to the former's transmission facilities. Maintenance costs for the interconnection facilities shall also be borne by NAPOCOR or the concerned electric utility.

SECTION 2. Standards for Operations and Reliability. Notwithstanding the evaluation, approval and inspection described in Section 1 of Article VII, Part I of these Rules and Regulations, NAPOCOR, NEA and concerned electric utility make no representation as to the economic, technical and operational capability or reliability of the PSGF.

SECTION 3. Operating Structure. The mini-PSGF directly connected to the NAPOCOR, or concerned electric utility grid, if required, shall be operated by its owner in accordance with arrangements scheduled by the NAPOCOR load dispatchers. The generating units shall be so designed and provided, if required, with controls to adequately operate on load - follow mode or on automatic load frequency control regulation under the dispatching system of NAPOCOR. Mini-PSGF connected to concerned electric utility shall be operated following the latter's dispatching/distribution system.

SECTION 4. System Emergencies. Private sector generators shall be obligated to provide power to NAPOCOR or the concerned electric utility during system emergencies to the extent provided by the agreement between the mini-PSGFs owners and NAPOCOR or the affected electric utility.

SECTION 5. Operation on "As-available" Basis. The electricity supplied by a mini-PSGF to NAPOCOR or an electric utility on an "as-available" basis shall follow a schedule provided by the owner of the mini-PSGF as to the time and period, and agreed to by NAPOCOR or the concerned electric utility.

PART III

SPECIFIC PROVISIONS FOR COGENERATION AND RENEWABLE RESOURCE POWER PRODUCTION FACILITIES AS PRIVATE SECTOR GENERATION FACILITIES

In addition to the provisions of Part I of these Rules and Regulations, the following Articles shall guide proponents/owner of Private Sector Generation Facility (PSGF) whose plant capacity is over 1000 kilowatts.

ARTICLE I

PROCEDURES FOR APPLYING FOR ACCREDITATION AND INTERCONNECTION OF A COGENERATION AND A RENEWABLE RESOURCE POWER PRODUCTION FACILITY AS A PRIVATE SECTOR GENERATION FACILITY

SECTION 1. Contents of Application. The application for accreditation for a qualified PSGF status shall contain, among others, the following information:

- a. The name and address of the applicant and the location of the facility;
- b. A description of the facility, including a statement indicating whether such facility is a renewable resource power production facility or a cogeneration facility;
- c. The power production capacity and energy (kw and kwh) of the facility;
- d. The primary energy source (fuel) of the facility;
- e. The projected mode of operation of the facility, (i.e., whether solely for internal use, or all its production to be sold to NAPOCOR grid/electric utility or just the excess) including plans for interconnection with the NAPOCOR grids, or electric utility operating at the site where facility is located;
- f. A description of the equity ownership of the facility including the percentage of ownership by NAPOCOR and/or any electric utility, or by any organization or person;
- g. The period of construction, installation and commissioning of the facility; and

- h. Any other information to be presented in forms as the concerned electric utility and/or the NAPOCOR may require.

SECTION 2. Period of Processing. Provided all requirements shall have been complied with, NAPOCOR or NEA shall approve or deny any application for accreditation for qualified PSGF status within three (3) months from the date of the application, unless NAPOCOR or NEA shall have required the submission of additional information, or postponement of final action on an application or other reasonable grounds. Any order postponing final action on an application shall state specifically the grounds for postponement, and the date on which a final ruling shall be issued. Any unresolved issue between NAPOCOR or concerned electric utility and qualifying PSGF shall be settled upon arbitration by the OEA.

ARTICLE II

RIGHTS OF NAPOCOR/NEA/CONCERNED ELECTRIC UTILITY ON THE DESIGN AND CONSTRUCTION OF THE PRIVATE SECTOR GENERATION FACILITY

SECTION 1. Rationale. For the protection and reliability of NAPOCOR's, or the concerned electric utility's power system, NAPOCOR or the concerned electric utility reserves the right to review the design and monitor the construction, operation and maintenance of the PSGF. By reviewing and monitoring, NAPOCOR or the electric utility makes no representations as to the economic and technical feasibility, operational capability or reliability of the PSGF. The owner of the PSGF is solely responsible for the economic and technical feasibility, operational capability and reliability thereof.

SECTION 2. Right to Review. NAPOCOR, NEA or the concerned electric utility shall have the right to review the drawings pertaining to the design of the PSGF and its interconnection facilities. Any flaws perceived by NAPOCOR, NEA or the electric utility in the design shall be described in writing. Internationally accepted engineering standards shall be utilized as reference in this review process.

SECTION 3. Right to Monitor. NAPOCOR, NEA or the concerned electric utility shall have the right to monitor the construction work and construction schedule, start-up, operation and maintenance of the PSGF and shall have the right to consult with and make recommendations to the owner of the PSGF.

ARTICLE III

OBLIGATIONS OF NAPOCOR, NEA, ELECTRIC UTILITIES,
AND OWNERS OF QUALIFIED PRIVATE SECTOR GENERATION FACILITIES

Section 1. Interconnection within NAPOCOR grids. In addition to the provisions of Section 4, Article IV of Part I of these Rules and Regulations, upon the approval of the application and effectivity of the agreement for interconnection by the owner of a qualified PSGF and NAPOCOR or any concerned electric utility, the NAPOCOR or the concerned electric utility may issue an order requiring the owner of a qualified PSGF to advance investments for the necessary interconnecting electrical equipment and devices in accordance with appropriate electrical plans approved by NAPOCOR or the concerned electric utility. Payment for the investment on these facilities shall be made following arrangements as mutually agreed upon by contracting parties.

SECTION 2. Rate Satisfaction. A rate for purchases satisfies the requirements of Section 2 of Article V, Part I if such purchase rate equals or does not exceed the cost determined after consideration of the factors set forth in Section 5 of this Article.

SECTION 3. Case with Different Costs. In the case in which the rates for purchases are based upon estimates of costs over the specific period of a contract, the rates for such purchases do not violate this Article if the rates for such purchases differ from costs at the time of delivery.

SECTION 4. Purchases "as available". The rates for purchases of energy and capacity on an "as available" basis shall be based on the NAPOCOR's or the purchasing electric utility's costs calculated at the time of delivery or costs calculated and stipulated in a contract to purchase. Energy and capacity on an "as available" basis shall mean electricity supplied by a PSGF to NAPOCOR or an electric utility following a schedule provided by the owner of the PSGF as to time and period and agreed to by NAPOCOR or concerned electric utility.

Section 5. Factors Affecting Rates for Purchases. The NAPOCOR and a concerned electric utility may require that specific factors mentioned below shall, to the extent practicable, be taken into account in the determination of costs:

- a. The data on avoided costs of NAPOCOR or the affected electric utility as submitted to the OEA in accordance with Section 4, Article V, Part I of these Rules and Regulations.

- b. The availability of capacity and energy from a qualified PSGF during the system daily and seasonal peak periods, including:
1. The ability of the NAPOCOR or the concerned electric utility to dispatch the qualified PSGF;
 2. The expected or demonstrated reliability of the qualified PSGF;
 3. The terms of any contract including the duration of the obligations, termination, notice requirement and sanctions for non-compliance;
 4. The extent to which scheduled outages of the qualified PSGF can be usefully coordinated with scheduled outages of the NAPOCOR or the electric utility's facilities;
 5. The usefulness of energy and capacity supplied from a qualified PSGF during system emergencies, including its ability to separate its load from its generation;
 6. The individual and aggregate value of energy and capacity from qualified PSGFs on NAPOCOR's or the electric utility's system;
 7. The smaller capacity increments and the shorter lead times available with additions of capacity from qualified PSGFs.
- c. The relationship of the availability of electric energy and capacity from the qualified PSGF to the ability of NAPOCOR or the affected electric utility to avoid costs, including the deferral of capacity additions and the reduction of fossil fuel use.
- d. The costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a qualified PSGF if NAPOCOR or the purchasing electric utility generated an equivalent amount of energy itself or purchased an equivalent amount of electric energy and capacity.

ARTICLE IV

INTERCONNECTION COSTS, SYSTEM EMERGENCIES AND OPERATING STANDARDS AND OTHER MATTERS

SECTION 1. Interconnection Costs within NAPOCOR grids. Consistent with the provision in Section 1 of Article III of Part III of these Rules and Regulations, the owner of a qualified PSGF shall advance all costs needed for the realization of the physical connection of the former to the transmission facilities of NAPOCOR or any concerned electric utility. Repayment on these investment costs shall be done in accordance with arrangements mutually agreed upon by the contracting parties. Maintenance costs for the interconnection facilities shall be borne by NAPOCOR or concerned electric utility.

SECTION 2. Operating Structure. The PSGF directly connected to the NAPOCOR or concerned electric utility grid, if required, shall be operated by its owner to carry its share of the system load demand and capacity reserve margin in accordance with the hourly, daily, weekly, monthly and/or yearly dictates/arrangements scheduled by the NAPOCOR Power Management Center's Load Dispatchers. The generating units shall be so designed and provided with electronic/automatic controls, if required, to adequately operate on load - follow mode or on automatic load frequency control regulation under the dispatching system of NAPOCOR. PSGF connected to concerned electric utility shall be operated following the latter's dispatching/distribution system.

SECTION 3. System Emergencies. Private sector generators shall be obligated to provide power to NAPOCOR or the concerned electric utility during system emergencies to the extent provided by the agreement between the qualified PSGF's owners and NAPOCOR or the affected electric utility.

PART IV

SPECIFIC PROVISIONS ON BLOCK POWER PRODUCTION FACILITIES

In addition to the provisions of Article I; Sections 1 and 5 of Article II; Sections 4 and 7 of Article III, Section 3 of Article VI; Section IV of Article VII of Part I of these Rules and Regulations, the following Articles shall guide proponents/owners of Block Power Production Facilities (BPPF) from the private sector. Electricity generated by BPPFs shall be sold only to NAPOCOR.

ARTICLE 1

QUALIFICATIONS FOR A BLOCK POWER PRODUCTION FACILITY AS A PSGF

SECTION 1. Ownership. Qualifications as to ownership of a PSGF provided in Section 1, Article II of Part I of these Rules and Regulations shall be applicable to ownership of a BPPF. In addition, the following qualifications shall be allowed for owners of a BPPF.

- a. Consistent with the development plans formulated by NAPOCOR, a BPPF may be constructed and operated by a NAPOCOR subsidiary corporation solely created for the purpose of owning the facility. Majority interest of the NAPOCOR subsidiary on the equity of the BPPF shall be considered as ownership by an electric utility and shall be subject to the applicable laws.
- b. A proponent/owner of a BPPF in which NAPOCOR has a minority interest and in which the majority interest is being held by the private sector shall be governed by applicable laws other than for electric utilities.

SECTION 2. Conformance of BPPFs with NAPOCOR Development Plans. Block Power Production facilities shall follow the Power Development Program of NAPOCOR as to the plant type, capacity, number, size, location and other technical requirements of generating units or facilities programmed thereat. Exception to this provision shall be subject to the evaluation and approval by the NAPOCOR.

SECTION 3. Economic Criteria. A qualifying BPPF shall have a lower or equal investment cost and/or production cost as NAPOCOR.

ARTICLE II

PROCEDURES FOR APPLYING FOR ACCREDITATION AS A BLOCK POWER PRODUCTION FACILITY

SECTION 1. Accreditation. A private sector generation facility which meets the criteria for accreditation set forth in the preceding Article is a qualified BPPF.

SECTION 2. Accreditation Procedures of a BPPF. The NAPOCOR shall treat BPPF applicants from the private sector on a case to case basis. Accreditation shall commence upon public announcement of NAPOCOR for applicants from the private sector to construct and operate large generating facilities as included and programmed in the NAPOCOR Power Development Program. The

application period shall be set by NAPOCOR. Evaluation and negotiation activities, and approval/disapproval of applications filed shall be completed within a reasonable period as determined by NAPOCOR. In case no applicant is chosen to construct and operate a specific block power generation project, ample time shall be given to NAPOCOR to undertake pre-construction and construction activities itself.

A facility not in conformity with NAPOCOR's Power Development Program may be proposed and its feasibility be submitted for consideration as a BPPF. NAPOCOR shall subject such proposal to a thorough evaluation and shall compare it with other BPPF applicants.

SECTION 3. Contents of Application. The application for accreditation for a qualifying BPPF shall contain, among others the following:

- a. The name and address of the applicant, name of the BPPF project, and plant type;
- b. Technical description of the BPPF citing, among others, the following:
 1. Installed capacity
 2. Annual Generation
 3. Forced Outage Rate
 4. Heat Rate
 5. Maintenance Days
 6. Dependable Capacity
 7. Station Use
 8. Economic Life
 9. Primary energy source (fuel)
 10. Mode of Operation (base or peaking)
- c. Description of the equity ownership of the facility including the percentage of ownership, if applicable, of NAPOCOR and/or any electric utility;
- d. Dates of construction, installation and commissioning of the BPPF;

- e. The project feasibility report, source and terms of foreign and local financing, operating capital budget, plans of obtaining manpower complement, qualification and training of personnel to run the facility;
- f. The provisions of adequate equipment for protective relaying coordinated with the power system, direct communications, telemetering controls to the grid load dispatch center of NAPOCOR; and
- g. Any other information as may be required by the National Power Corporation.

SECTION 4. Period of Processing. NAPOCOR shall take action to approve or deny any application for accrediting a qualified BPPF within a predetermined period.

SECTION 5. Interconnection After Accreditation. others, provisions on interconnection after accreditation of a BPPF shall be included in a contract between NAPOCOR and the owner of the BPPF.

SECTION 7. Revocation of Accredited Status. Instances or causes that may force NAPOCOR to revoke the qualified status of BPPF shall be clearly stated in the contract between NAPOCOR and the owner of the BPPF.

ARTICLE III

RIGHTS OF NAPOCOR ON THE DESIGN AND CONSTRUCTION OF THE BLOCK POWER GENERATION FACILITY

SECTION 1. Rationale. For the protection and reliability of NAPOCOR'S power system, NAPOCOR reserves the right to review the design and monitor the construction, operation and maintenance of the BPPF. By reviewing and monitoring, NAPOCOR makes no representations as to the economic and technical feasibility, operational capability or reliability of the BPPF. The owner of the BPPF is solely responsible for the economic and technical feasibility, operational capability and reliability thereof.

SECTION 2. Right to Review. NAPOCOR shall have the right to review the drawings pertaining to the design of the BPPF and its interconnection facilities. Such review may include, among others, the building structure, generator, governor, excitation system, synchronizing equipment, protective relays, communication devices and metering system. Any flaws perceived by NAPOCOR in the design shall be described in writing. Internationally accepted engineering standards shall be utilized as reference in this review process.

SECTION 3. Right to Monitor. NAPOCOR shall have the right to monitor the construction and construction schedule, start-up, operation and maintenance of the BPPF and shall have the right to consult with and make recommendations to the owner of the BPPF.

ARTICLE IV

OBLIGATIONS OF NAPOCOR AND OWNER OF BLOCK_POWER_PRODUCTION_FACILITIES

SECTION 1. Obligation to Purchase Electric Energy from the Qualified BPPF. The NAPOCOR shall purchase, at rates to be agreed upon in accordance with the succeeding Article, hereof, electric energy and capacity which is made available by the owner of the qualified BPPF.

SECTION 2. Obligation to Sell to a Qualified BPPF. NAPOCOR shall sell to the owner of a qualified BPPF maintenance power consistent with its maintenance schedule submitted to NAPOCOR, and back-up power.

SECTION 3. Obligation to Interconnect. NAPOCOR shall interconnect with a qualified BPPF to accomplish purchases or sales under these Rules and Regulations and following stipulations in the contract between NAPOCOR and the owner of the BPPF on this matter.

ARTICLE V

RATES FOR PURCHASES AND SALES

SECTION 1. Purchase Rate. NAPOCOR's purchase rate from a BPPF shall be on a case to case basis and shall not exceed the avoided cost of NAPOCOR.

SECTION 2. Factors Affecting Purchase Rates. In the calculation of the cost for a BPPF, NAPOCOR shall consider, to the extent practicable, the following factors that may be affecting rates for purchases:

- a. The data on the avoided costs of NAPOCOR as submitted to the OEA in accordance with Section 4, Article V, Part I of these Rules and Regulations.
- b. The availability of capacity and energy from the qualified BPPF during the system daily and seasonal peak periods, including:
 1. The ability of the NAPOCOR to dispatch the qualified BPPF;

2. The expected or demonstrated reliability of the qualified BPPF;
 3. The terms of any contract including the duration of the obligations, termination, notice requirement and sanctions for non-compliance;
 4. The extent to which scheduled outages of the qualified BPPF can be usefully coordinated with scheduled outages of the NAPOCOR;
 5. The usefulness of energy and capacity supplied from the qualified BPPF during system emergencies, including its ability to separate its load from its generation;
 6. The individual and aggregate value of energy and capacity from qualified BPPFs on NAPOCOR's system.
 7. The capacity increments and the lead times available with additions of capacity from qualified BPPFs.
 8. The corresponding value of the reserve capacity being carried by NAPOCOR and to be shared by the BPPFs and the NAPOCOR customers.
- c. The relationship of the availability of electric energy and capacity from the qualified BPPF to the ability of NAPOCOR to avoid costs, including the deferral of capacity additions and the reduction of fossil fuel use.
 - d. The costs of savings resulting from variations in line losses from those that would have existed in the absence of purchases from a qualified BPPF if NAPOCOR generated an equivalent amount of energy itself or purchased an equivalent amount of electric energy and capacity.

SECTION 3. Rates for Sales. NAPOCOR shall sell power to the BPPF for maintenance purposes at rates mutually agreed upon by NAPOCOR and the owner of the BPPF.

SECTION 4. Rates to BPPF for Electric Power. NAPOCOR shall sell electric power to the BPPFs during unscheduled outages, as available, for their consumption at a rate mutually agreed upon by NAPOCOR and the owner of the BPPF. Back-up power for capacity unserved by BPPFs due to their unscheduled outages shall be provided by NAPOCOR's reserve units. Penalty due to the inability of the BPPF to provide contracted power during its unscheduled outage shall be stipulated in the contract between NAPOCOR and owner of the BPPF.

SECTION 5. Adjustments in Financial Accounting. NAPOCOR shall accordingly adjust its financial accounting systems and procedures resulting from purchases of electricity from the BPPF. The rate of return on rate base levels shall then be determined after all adjustments have been made and set in place.

ARTICLE VI

OPERATING SYSTEMS AND PROCEDURES

SECTION 1. Standards for Operations and Reliability. NAPOCOR shall ascertain that the owner of the BPPF follows established internationally-accepted engineering standards to ensure safety, system-security and reliability for interconnected system operations. NAPOCOR shall evaluate and approve the system design, adhere to electrical and mechanical engineering standards, physically inspect the BPPF installations and witness the testing and commissioning of the BPPF that will be interconnected to the NAPOCOR grid to ensure that all equipment are in place and functioning properly.

SECTION 2. Operating Structure. The BPPF as a PSGF directly connected to the NAPOCOR grid shall be operated by its owner to carry its share of the system load demand and capacity reserve margin in accordance with the hourly, daily, weekly, monthly and/or yearly arrangements scheduled by the NAPOCOR Power Management Center's Load Dispatchers. Although, the BPPF generating units may have been conceived as a base load plant, these generating units shall be so designed and provided with electronic or automatic controls to operate adequately on load-follow mode or on automatic load frequency control regulation by the SCADA (dispatching) system of NAPOCOR.

SECTION 3. Environmental Concerns. The BPPF shall consider the environmental impact/effect of its operations. The owner of the BPPF shall ascertain that environmental management standards as required by law through appropriate governmental agencies are met in the construction, operation and maintenance of the BPPF.

ARTICLE VII

OTHER PROVISIONS ON BPPF

SECTION 1. Interconnection Costs. The owner of a BPPF shall advance investments needed in interconnecting the BPPF with the NAPOCOR grid. Repayment shall be made in accordance with mutually agreed upon arrangements of the contracting parties. Maintenance costs for the interconnection facilities shall also be agreed upon by the NAPOCOR and the owner of the BPPF.

SECTION 2. BPPF Contract. A contract with the owner of a BPPF shall be prepared by NAPOCOR on a case to case basis. However, the basic contents of this contract shall include, among others, the items enumerated in Section 3, Article VII of Part I of these Rules and Regulations.

SECTION 3. Security of BPPF. For emergency situations, NAPOCOR, with the assistance of the military, shall take over the operations of the BPPFs to ensure continuity of electric service and/or to prevent brownouts.

SECTION 4. Power Planning. The NAPOCOR shall provide interested parties its Power Development Program for their reference. Same Power Development Program shall be followed by NAPOCOR in considering the private sector entities to participate in power generation activities. The NAPOCOR may include in the PDP schedules the following:

- a. Period of application for the private sector to construct and operate the power plant stated in the PDP;
- b. Period of evaluation of application;
- c. Period of negotiation with qualified applicants for the BPPF activity; and
- d. Period for approval and other matters relative to the BPPF activity.

PART V

RULES GOVERNING GENERATING FACILITIES SOLELY FOR THE INTERNAL USE OF ELECTRIC UTILITIES

In addition to the provisions of Article I; Sections 5 and 6 of Article II; Section 6 of Article III, the following Articles shall guide electric utilities engaged in power generation solely for internal use.

ARTICLE I

QUALIFICATIONS AS A PRIVATE SECTOR GENERATION FACILITY (PSGF)

SECTION 1. Ownership. Electric utilities other than NAPOCOR shall be allowed to construct, operate and maintain generating facilities, (whether already existing or still to be installed) solely for their internal use. They shall be subject to electric utility regulations concerning rates, financial limitations, taxes and other laws applicable to their operations

as electric utilities. The term "internal use" as utilized in this Part of the Rules and Regulations shall mean that electric utilities could use for plant maintenance and/or sell the electricity they generate directly to their customers.

SECTION 2. Size of Generating Units. The limitation on maximum size of generating units as stipulated in Section 4 of Article II, Part I of these Rules and Regulations shall be encouraged in order to facilitate possible NAPOCOR service to these generating plants during breakdown or maintenance periods.

ARTICLE II

PROCEDURES FOR APPLYING FOR ACCREDITATION AS A PRIVATE SECTOR GENERATION FACILITY

SECTION 1. Accreditation. An electric utility's generating facility which meets the criteria for accreditation set forth in the preceding Article is a qualified PSGF.

SECTION 2. Accreditation by NAPOCOR or NEA. The electric utility shall apply for accreditation as a qualified PSGF to NAPOCOR or NEA, as the case may be. The electric utility concerned shall also submit to NAPOCOR or NEA the technical description and the operating data of its generating units, as well as the units' respective annual maintenance schedules for planning and monitoring purposes.

SECTION 3. Contents of Application. The application for accreditation for a qualified PSGF status shall contain, among others, the following information:

- a. The name and address of the applicant and the location of the facility;
- b. A description of the facility, including a statement indicating whether such facility is a renewable resource power production facility, a cogeneration facility, or any other electric power generating facility;
- c. The power production capacity and energy (kw and kwh) of the facility;
- d. The primary energy source (fuel) used or to be used by the facility;
- e. A description of the equity ownership of the facility;
- f. The date of construction, installation and commissioning of the facility; and

- g. Any other information to be presented in forms as the National Power Corporation or NEA may require.

SECTION 4. Period of Processing. Provided all requirements shall have been complied with, the NAPOCOR or NEA, as the case may be, shall take action to approve or deny any application for accreditation within three (3) months from the date of the application, unless NAPOCOR or NEA shall have required the submission of additional information, or postponement of final action on an application or other reasonable grounds. Any order postponing final action on an application shall state specifically the grounds for postponement, and the date on which a final ruling shall be issued. Any unresolved issue between the NAPOCOR or NEA and electric utility owning the qualifying PSGF may be settled upon hearing by the Office of Energy Affairs.

SECTION 5. Assumption on Interconnection. It shall be assumed that the electric utilities owning generating units for their internal use are already interconnected with the NAPOCOR grid. Any possible interchange of electricity to and from NAPOCOR shall be coursed through said interconnection facilities. This provision does not apply electric utilities not served by the NAPOCOR grids and are under NEA's jurisdiction.

ARTICLE III

NAPOCOR'S OR NEA'S OPERATIONAL RELATIONSHIP WITH ELECTRIC UTILITIES OWNING GENERATING FACILITIES SOLELY FOR INTERNAL USAGE

SECTION 1. Provision on Reserve Capacity. NAPOCOR shall maintain a reserve capacity in the NAPOCOR grid system considering all generating facilities existing and operating therein. A minimal annual reserve capacity carrying fee as determined by NAPOCOR, shall be paid by all electric utilities with generating facilities for their internal use to NAPOCOR. Such payment shall make NAPOCOR obligated to serve the affected electric utilities maintenance and back-up power.

SECTION 2. Provision On Incremental Power. NAPOCOR shall supply incremental PSG power to the electric utility owning generating facilities for its internal use to the extent provided in a contract for this purpose. The selling rate of NAPOCOR for this incremental power shall be the rate mutually agreed upon by NAPOCOR and the owner of the PSGF.

SECTION 3. Rate of Back-Up/Maintenance Power. The rate of NAPOCOR to generating facilities solely for the internal use of an electric utility of maintenance power shall be the rate mutually agreed upon by NAPOCOR and the PSGF which shall be stipulated in a contract between NAPOCOR and the PSGF.

SECTION 4. Provision for System Emergencies. Electric utilities generating power solely for its internal use may arrange with NAPOCOR to provide the electric utilities or vice-versa electric power during system emergencies to the extent possible and under terms to be agreed upon by both parties.

SECTION 5. Dispatchability. Generating facilities solely for internal use by an electric utility shall not be obligated to be under the Dispatch Management System (DMS) of the NAPOCOR.

SECTION 6. Production Cost Higher than NAPOCOR's . At a time when production cost from the generating units solely for internal use of an electric utility is higher than buying from NAPOCOR, and the electric utility decides to get power from NAPOCOR to replace its own generation, NAPOCOR shall sell to said electric utility provided that: NAPOCOR's unit production cost would remain the same with the added load; NAPOCOR's system operations would not be hampered; NAPOCOR's service to other customers would not be unduly affected; and NAPOCOR would not be pressured to add new capacities to meet the new load. At this time also, NAPOCOR shall not be obligated to purchase the generating facilities of the electric utility as this may be detrimental to the interest of NAPOCOR's regular customers.

SECTION 7. Excess Production of PSGF. In instances when the generating units of electric utilities are capable of producing electricity in excess of their requirement, NAPOCOR shall not be obligated to purchase such excess power.

In instances when NAPOCOR may opt to purchase power from said electric utility, purchase rate shall not exceed the cost of NAPOCOR had it generated the power itself at the time of delivery.

SECTION 8. Change of Status. An electric utility with an accredited generating facility solely for its internal use may decide to sell excess production on a regular basis to NAPOCOR. Terms and conditions of purchase by NAPOCOR shall be consistent with the applicable provisions given in Parts I and III of these Rules and Regulations and shall be stipulated in a Contract.

SECTION 9. Periodic Reporting to NAPOCOR or NEA. The electric utility owning generating facility for internal use shall regularly submit to NAPOCOR or NEA, in a prescribed form, operating and other information as may be required by NAPOCOR or NEA for monitoring and planning purposes.

PART VI

GENERAL PROVISIONS

SECTION 1. Implementation_of_the_Rules_and_Regulations. The OEA shall take all the necessary and reasonable measures to ensure that the provisions of these Rules and Regulations are made effective.

SECTION 2. OEA_Revision_of_the_Rules_and_Regulations. The OEA shall prescribe and, from time to time thereafter, revise such Rules as it determines necessary to encourage private sector participation in power production. Such Rules shall be prescribed after consultation with the private sector and appropriate government agencies.

SECTION 3. Publication. These Rules and Regulations shall take effect thirty (30) days after publication thereof in the Official Gazette.

The Office of Energy

The Agency for International Development's Office of Energy plays an increasingly important role in providing innovative approaches to solving the continuing energy crisis in developing countries. Three problems drive the Office's assistance programs: high rates of energy and economic growth accompanied by a lack of energy, especially power in rural areas; severe financial problems, including a lack of investment capital, especially in the electricity sector; and growing energy-related environmental threats, including global climate change, acid rain, and urban air pollution.

To address these problems, the Office of Energy leverages financial resources of multilateral development banks such as The World Bank and the InterAmerican Development Bank, the private sector, and bilateral donors to increase energy efficiency and expand energy supplies, enhance the role of private power, and implement novel approaches through research, adaptation, and innovation. These approaches include improving power sector investment planning ("least-cost" planning) and encouraging the application of cleaner technologies that use both conventional fossil fuels and renewable energy sources. Promotion of greater private sector participation in the power sector and a wide-ranging training program also help to build the institutional infrastructure necessary to sustain cost-effective, reliable, and environmentally-sound energy systems integral to broad-based economic growth.

Much of the Office's strategic focus has anticipated and supports recently-enacted congressional legislation directing the Office and A.I.D. to undertake a "Global Warming Initiative" to mitigate the increasing contribution of key developing countries to greenhouse gas emissions. This strategy includes expanding least-cost planning activities to incorporate additional countries and environmental concerns, increasing support for feasibility studies in renewable and cleaner fossil energy technologies that focus on site-specific commercial applications, launching a multilateral global energy efficiency initiative, and improving the training of host country nationals and overseas A.I.D. staff in areas of energy that can help to reduce expected global warming and other environmental problems.

To pursue these activities, the Office of Energy implements the following seven projects: (1) The Energy Policy Development and Conservation Project (EPDAC); (2) The Biomass Energy Systems and Technology Project (BEST); (3) The Renewable Energy Applications and Training Project (REAT); (4) The Private Sector Energy Development Project (PSED); (5) The Energy Training Project (ETP); (6) The Conventional Energy Technical Assistance Project (CETA); and (7) its follow-on Energy Technology Innovation Project (ETIP).

The Office of Energy helps set energy policy direction for the Agency, making its projects available to meet generic needs (such as training), and responding to short-term needs of A.I.D.'s field offices in assisted countries.

Further information regarding the Office of Energy's projects and activities is available in our Program Plan, which can be requested by contacting:

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