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PRIVATE SECTOR ENERGY DEVELOPMENT PROGRAM

DELIVERY ORDER #06

DOMINICAN REPUBLIC - BUY-IN

MID-PROJECT STATUS REPORT

SEPTEMBER, 1993 - MAY, 1994

Submitted by:

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To:

Office of Energy and Infrastructure
U.S. Agency for International Development

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Attachments:

1. Cost Summary
2. Preliminary Fuel Pricing Study - Issue Paper
3. Pre-qualification Document for Selection of a Sponsor to develop 250 MW fossil fired power station in the Dominican Republic on a Build, Own, and Operate (BOO) Basis.
4. Draft Load Profile

Private Sector Energy Development Program
Delivery Order #6 --Dominican Republic - Buy-In
Mid-Project Status Report
September, 1993 - May, 1994

I. Executive Summary:

This report summarizes the activities of K&M Engineering and Consulting Corporation to provide technical assistance to the USAID Mission in Santo Domingo, Dominican Republic, through a delivery order under the USAID Office of Energy and Infrastructure's G/E/E&I, Private Sector Energy Development (PSED) Program, during the period September, 1993, through May, 1994 exclusive. This technical assistance involves conducting a fuel price study and the preparation of private power bidding documents.

During said period, K&M performed a review of fuel pricing practices and prepared a discussion paper providing options the Government of the Dominican Republic (GODR) may wish to consider. Work on the pre-qualification documents was finalized, and the announcement of pre-qualification of potential bidders is scheduled to be released May 31st, 1994.

In addition, the compilation and preparation of the Request for Proposals from private bidders of the planned plant is well underway. The K&M team visited the Dominican Republic to meet with USAID/Santo Domingo, Corporacion Dominicana d'Electricidade (CDE), and Comite Nacional de Energia (CNE) officials to gather data and discuss the various factors effecting the proposed plant. These factors include site selection, load factors, dispatchability, fuel supply, etc.

II. Background and Overview:

USAID Mission in Santo Domingo has been working diligently over the past five years in defining and implementing solutions to the energy problems in the Dominican Republic. In particular, USAID Mission has been promoting private enterprise involvement in the electric power sector as a key component for resolving the Dominican Republic's electric power crisis. Joint meetings were held involving representatives of the Government of the Dominican Republic (GODR), the World

Bank, the InterAmerican Development Bank (IDB), and technical experts provided by USAID. USAID Mission firmly believes that donor agency coordination, especially among USAID, the World Bank, and InterAmerican Development Bank, (IDB) will play a key role in the successful resolution of the energy problems prevalent in the Dominican Republic.

In support of this cooperative effort, many of the necessary activities identified by the participants are now in progress. USAID Mission has agreed to focus on two specific products which will help the action plan desired by the GODR move forward while also serving U.S. private power interests. Specifically, the USAID Mission in Santo Domingo requested the assistance of the Office of Energy and Infrastructure's Private Sector Energy Development (PSED) Project in the preparation of private power bidding documents and performance of a fuel price study. The work is being performed by K&M Engineering and Consulting Corporation under a PSED Delivery Order (or "buy-in").

III. Objective:

The objective of this project is to assist the GODR in developing an appropriate plan and strategy to resolve the persisting electric power shortages in the Dominican Republic. A work plan was adopted that calls for developing new laws and regulations necessary to facilitate the assessment of private power projects, the structural reorganization of CDE, and developing the procurement procedures for new generating facilities. This plan includes coordinated inputs of USAID, the World Bank, the (IDB), and other pertinent donor agencies. The effort will pay particular attention to issues and activities dealing with the role that the private sector may play in the resolution of the electric power crisis in the Dominican Republic. The long-term objective of this assistance is to help the development of private power projects in the Dominican Republic and to provide information about these project opportunities to foreign private investors and developers.

IV. Activities Performed To Date:

A. Review of Fuel Pricing Practices.

K&M's initial activities were to work closely with the USAID Mission and GODR power sector officials to develop a Preliminary Fuel Pricing Study. The USAID Mission made arrangements for a series of formal meetings which were held at several locations in Santo Domingo. As a result of these meetings, K&M agreed to

prepare an Issue Paper which would discuss the fuel pricing practices and optional applicable scenarios that would allow the GODR to decide on the best solutions.

The purpose of these meetings and the resulting Issue Paper was to present a preliminary, draft discussion of the various scenarios and alternative options on fuel-related issues. This discussion paper provides an impartial summary of the options that may be available to the GODR in its ongoing formulation of a new Electricity Law, based upon an initial survey of conditions in the country.

The discussion paper was confined to the three types of fuel that are more likely to be used in the Dominican Republic to generate electricity: petroleum residual fuels, gas oil, and coal.

The paper also discussed briefly the influence that environmental constraints could have on the choice of quality, the price of the fuels to be used, and how these constraints may affect the existing production and importation patterns for petroleum products.

The background issues addressed in the paper are: the selection of the plant (and its fuel) that would be more advantageous to the Dominican Republic economy, the decision as to whether all fuels used for the generation of electricity should be given equal fiscal treatment, and the value of having an agency of the GODR that has a monopoly to coordinate and carry out the importation of petroleum products.

The paper also outlined several options and principles that need to be decided to assure the orderly implementation of adequate policies to safeguard the non-discriminatory pricing of fuels used for electricity generation. However, such orderly implementation should be based on facts and figures, and this data may not readily be available. Establishing the methods to maintain and analyze the data may be the subject of further studies.

The Issue Paper was delivered to the GODR National Energy Commission in time for their October, 1993, meeting. The Issue Paper was well received and some of its observations are included in the new Electricity Law submitted to the Congress in January, 1994.

B. <u>The Pre-qualification Documents.</u>

K&M prepared the Pre-qualification Bidding Documents for the GODR's Solicitation of the proposed projects.

The Bidding Documents consist of the following forms and annexes that would be submitted by all applicants interested in participating in a given project:

Form I	Affidavit
Form II	Applicant's Organization
Form III	Information to be furnished by Corporations
Form IV	Information to be furnished by Unincorporated Associations
Form V	Financial Capability
Form VI	Litigation History
Form VII	Detailed Information to be furnished by Applicant:
Annex A	Articles of Incorporation, etc.
Annex B	Privilege Tax Receipts
Annex C	Curriculum Vitae of Key Technical personnel
Annex D	Certificates of Registration
Annex E	Technical Capabilities
Annex F	Experience
Annex G	Power Station Performance
Annex H	Proposed Organization and Implementation Plan

The first draft of the above documents were released the first week of December, 1993, during K&M participation in meetings with officials of USAID Mission, the World Bank, the IDB, CDE, and GODR to coordinate the Dominican Republic energy sector reform activities. The status, content, and schedule for the RFP documents were also discussed and finalized with the participants in these meetings.

Upon receipt of comments from CDE, the World Bank, and IDB to the draft of the pre-qualification documents, a review was conducted to incorporate these comments into the documents after coordination with CDE and other agencies. Notice of pre-qualification will not be published until the Electricity Law is enacted. (The GODR Electric Sector Law has been finalized by the Energy Committee and submitted to the President. The promulgation of the Law is now totally under the control of the government. Any delay will raise questions concerning the proposed timing for the entire range of energy sector restructuring activities).

K&M is proceeding with the preparation of the RFP documents including three preliminary private power bidding documents: an Implementation Agreement (IA), a Power Purchase Agreement (PPA), including tariff adjustment and indexation, and a Land Lease Agreement (LLA).

K&M met with both CDE and CNE officials to review all additional comments received on said documents. As a result of these discussions, a revised draft of these documents was submitted to the World Bank and IDB officials on the evening of April 5. Concurrently, a new schedule was also developed for the preparation and finalization of the RFP documents. K&M submitted a list of information, required for the completion of the RFP, to CDE on April 14, 1994.

K&M also attended and participated in a working session, headed by Hector Guiliani, to review the final version of pre-qualification Documents, after the incorporation of all the participants comments. It was agreed during this session that the pre-qualification process of interested applicants should begin. Notice of pre-qualification is scheduled to be released on May 31st, 1994. Documentation for this process will be released to interested applicants, including the last version of the D.R. Electricity law. Furthermore, the status, content, and schedule of the completion of the RFP documents were reviewed and approved. The law firm of Troncoso & Caceres reviewed samples of the Implementation Agreements (IA), Power Purchase Agreements (PPA), including tariff adjustment and indexation, Land Lease Agreement (LLA), Fuel Supply Agreement (FSA), and Operations and Maintenance (O&M) Agreement. The scope of the firm's services includes review of these document with respect to conformity to new electricity law.

C. Preparation of the Request for Proposal (RFP)

In an effort to commence work on the RFP documents as scheduled, K&M met with CDE officials to discuss some of the required information involved in the RFP. The following is an outline of the discussion:

- A preliminary report from the DECON Load Study was provided after the need and importance of disseminating this information to potential bidders was discussed;
- All potential sites were discussed in light of site conditions and regional load factors. From the discussion it was apparent that CDE has some site preferences, specifically San Pedro.
- Even though the plant will technically be dispatchable, it is anticipated that it will be base-loaded at least in the first years of operations. The gap between supply and demand will require all available power until more plants come on line.
- Since it is anticipated that the supply and demand gap will be closed, the proposed plant must have Automatic

Generation Controls (AGCs) to ensure its dispatchability at some future date

There is currently an RFP out for the construction of a new Supervision, Control, and Data Acquisition (SCADA) System. The system is envisioned to have state-of-the-art equipment to allow for economic dispatching of plants. It is not expected, however, that all CDE plants in the grid will initially be connected to the Center.

The K&M Team also visited six potential sites east and west of Santo Domingo:

Haina and Itabo:

- Already has several per plants and sugar mills that are having environmental impacts on the area
- Fuel Coal is stored in open sites
- 138 kV Transmission lines and Fuel handling infrastructure already in place
- Waste ash is stored in an open site that is inclined into the ocean
- There is a number of houses that will have to be relocated for the plant to be built at these sites
- Haina and Itabo are near the main distribution area of CDE where the highest load is located

Puerto Viejo (Azua):

- Site is within half a mile from an LNG handling Facility
- Site and surrounding areas are in pristine environmental conditions
- No significant fishing activities taking place in the bay
- No significant number of inhabitants in the area
- No transmission lines or fuel handling infrastructure in place
- Existing dock that can be expanded to handle coal delivery

Boca Chica:

- Plant site located next to a new wastewater handling facility
- Plant site located next to airport which may create a security hazard

- No existing transmission or fuel handling facilities
- Nearby port is not large enough to handle coal delivery, and there is little room to expand it to accommodate delivery
- Site located next to major resort areas

San Pedro:

- Existing 138 kV transmission lines, but no fuel handling facilities
- Existing barge-mounted heavy oil-fired power plant built by Mitsubishi next to the potential site
- No significant fishing activities in the area
- No significant number of inhabitants to displace
- Nearby town is down-wind from the plant site

K&M also met with CNE and CDE officials. The following is an outline of the discussion:

- If the plant is located in Haina or Itabo, there is a possibility that the operations and maintenance of the existing plants in the area be given to the contractor responsible for the operations and maintenance of the new piant
- MONENCO's Site Study will have information to finalize the DECON Least-Cost Expansion Plan that was discussed with CDE on April 26
- Developer will probably be responsible for all cost involved in site preparation, but CDE will handle relocating any inhabitants of the chosen site
- Fuel importing and purchasing must be according to the articles of the new law, which will be provided to developers, in spanish, with the RFP
- Electrical interconnection, substation, and preliminary layout of the plant is still not determined. It is advisable that CDE provide developers with these as preliminary in order to standardize the bids. After developer selection, these items can be negotiated within the accepted costs
- CNE believes that developers may prefer to pay taxes in the D.R. because of the special tax code provisions that allow front loading of depreciation to reduce the tax liability
- In the first stage of plant operations, CDE will purchase the power, however, as the planned restructuring takes place, that may change
- The issue of government guarantees that would be provided in the

Implementation Agreement is still not determined, especially in the case of privatization

Moreover, K&M met with CNE and CDE officials to further discuss some technical issues outstanding. The following is a brief outline of the discussion:

- There are no significant seasonable changes in demand for the system as whole, therefore, the aggregate demand forecasts can be taken as proxies for seasonal demand
- It is anticipate the commercial operations date of the proposed plant is in the 1997-98 period
- World Bank/InterAmerican Development Bank funds will be dispersed in two tranches to finance most of 2x125 MW plant
- For the sake of calculating the project's discounted cash flow, the developer should assume a minimum of 85% dispatchability regardless of the fact that the plant will probably be base-load initially
- The new Control Center should be mentioned and described in the bidding documents. SCADA systems will be used
- There are no significant problems with telecommunications systems to be used. Currently, Microwave and low frequency radio lines are used.
- Monthly demand information, which was not available in the two DECON Reports provided
- The Tax and Customs Regulations and Labor Law, which were provided, will have an impact on the project and will be provided with the RFP

Finally, K&M met with CNE and CDE officials one last time to receive and discuss load profile data, wage lists for both government and private power industry, technical standards used by the D.R., and some technical specifications for existing power plants. However, site information from MONENCO was still not available.

V. Cost Report:

See the cost summary at Attachment 1. Note that the level of effort to date has been quite restricted during the September-December, 1993 period (11% expended during 30% of the project period). This is due to delays on the part of the GODR Technical Group, the World Bank, and the IDB in providing their comments directing the orientation of this pre-qualification document. The draft of the Electricity Law is complete and in process of being reviewed by GODR.

Work on the RFP commenced as planned despite the fact that no specific site

has been selected yet. It is anticipated that a draft RFP document will be issued for review on May 31st, as planned. This document will serve as a base for completing information gathering and addressing any other relevant open issues.

Attachments:

1. Cost Summary
2. Preliminary Fuel Pricing Study - Issue Paper
3. Pre-qualification Document for Selection of a Sponsor to develop 250 MW fossil fired power station in the Dominican Republic on a Build, Own, and Operate (BOO) Basis.

ATTACHMENTS

ATTACHMENT 1

Project Status Report
ivery Order No.6 – Dominican Republic
of April 22, 1994

ATTACHMENT 1

tegory	Ceiling Price	Pipeline (Remaining)	K&M Gross Expended
oor	$581,891	$451,482	$130,409
DCs	$52,843	$38,098	
irect Travel			$12,317
ffice Expense			$0
ther			$2,427
tal ODCs			$14,745
tals	$634,734	$489,580	$145,154
SS: 5% of labor			$6,520
oiced			$138,633
Used			22.87%

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ATTACHMENT 2

(Preliminary Fuel Pricing Study - Issue Paper)

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1 INTRODUCTION

The purpose of this paper is to present a very initial, draft discussion on the various scenarios, alternatives, and options on fuel-related issues that may be available to the Government of the Dominican Republic (GODR) in its ongoing formulation of a new Electricity Law. This discussion paper is intended to provide an impartial summary of the options on specific issues that may be available to the GODR, based upon an initial survey of conditions in the country.

Our discussion is confined to the three types of fuel that are more likely to be used in the Dominican Republic to generate electricity: (i) petroleum residual fuels, (ii) gas oil, and (iii) coal.

It also discusses briefly the influence that environmental constraints could have on the choice of quality, the price of the fuels to be used, and how these constraints may affect the existing production and importation patterns for petroleum products.

Since this discussion paper has been prepared for USAID/Santo Domingo in less than a week, by necessity, it has had to limit its commentary mostly to qualitative discussions of issues and scenarios, instead of more qualitative evaluations. Further studies and additional time would be required to provide more detailed quantitative analyses of these issues. In the limited cases where qualitative data is used, numeric estimates are derived from what are considered to be reasonably reliable data sources.

GLOSSARY OF TERMS

Crude	Petroleum used to obtain refined products
Fuel	Unless otherwise stated, a fuel used for electricity generation
Fuel Oil	Is made up of the heaviest and most viscous of petroleum products derived from crude oil. Usually contains most of the impurities originally included in the crude. It could also go under the names of Bunker C, # 6, residual, resid, and mazout
Gas oil	A fuel used mainly in diesel engines and combustion turbines. Other similar fuels that can be used for the same purposes are: # 2, kerosene, and Avtur
Price Control	A unilateral process which establishes prices for goods sold to the public
Product	Any of the fuels and chemical products resulting from the process of refining crude petroleum. Examples include: gasoline, gas oil, and fuel oil
Regulation	An impartial multilateral process which establishes the rules for the establishment of prices, conditions of service and return on investment

The focus of this draft discussion paper is intended to discuss two issues presently being evaluated by the GODR in the formulation of its draft Electricity Law. These issues include (i) REFIDOMSA's (the Refinery) present monopoly and control over the pricing and import of petroleum crudes and products in the Dominican Republic (discussion in Section 3), and

(ii) whether private power companies should have the same rights as the Corporación Dominicana de Electricidad (CDE) in the purchase of fuels (discussion in Section 4). To provide an appropriate framework for these discussions, the following Section 2 first briefly discusses several background topics that will have a direct impact upon these two issues.

2 ISSUES

The background issues discussed in this section address: (i) the selection of the plant (and its fuel) that would be more advantageous to the Dominican Republic economy, (ii) the decision of whether all fuels used for the generation of electricity should be given equality of fiscal treatment or not, and (iii) the value of having an agent of the GODR that has a monopoly to coordinate and carry out the importation of petroleum products.

Many of the issues raised in this section address the significant share of the energy market that is represented by the electricity plants. Presently, the Dominican Republic consumes approximately 65 - 80 000 barrels/day (bbl/d) of petroleum products. Of these, about 20 000 bbl/d are used by CDE. An efficient new 100 MW plant would use 2 000 - 2 500 bbl/d or its equivalent in coal. The Refinery can produce 30 - 35 000 bbl/d.

2.1 CHOICES OF ECONOMIC FUELS

It would be useful for the Dominican Republic to give close consideration to what are the probable pricing scenarios for the fuels used in electricity generation. The main focus of this issue relates to what changes can be expected in the difference in prices between petroleum products (especially fuel oil) and coal.

As seen in Figure 1, derived from 1993 CDE records, the price of fuel oil has been 130 to 150% higher than the price of coal. This relationship is valid as long as there are no environmental restrictions for the emissions of sulphur compounds (which are significant contributors to "acid rain"). However, if increased regulation of sulphur compounds contamination were implemented, and a comparison were to be made between coal and low sulphur content fuel oil, this difference would be biased even more towards coal. For example, if CDE, instead of continuing the present use of 2.6 to 3.0% sulphur content fuel oil were compelled to use a product with 0.7 % sulphur, (the sulphur content of Colombian coal), there would be a further increase in the difference between fuel oil and coal prices. Since the price of fuel oil with 0.7% sulphur as compared to 3.0% sulphur (in the US Gulf area) is approximately 40% higher, under equivalent environmental requirements, the price to CDE for low sulphur fuel oil could be somewhere between 75% and 100% higher than coal's.

2.1.1 Likelihood of Residual Petroleum Product Prices Increasing Faster than Coal Prices

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Figure 1
Comparison of CDE's Costs of Gas Oil, Fuel Oil and Coal 1992-1993

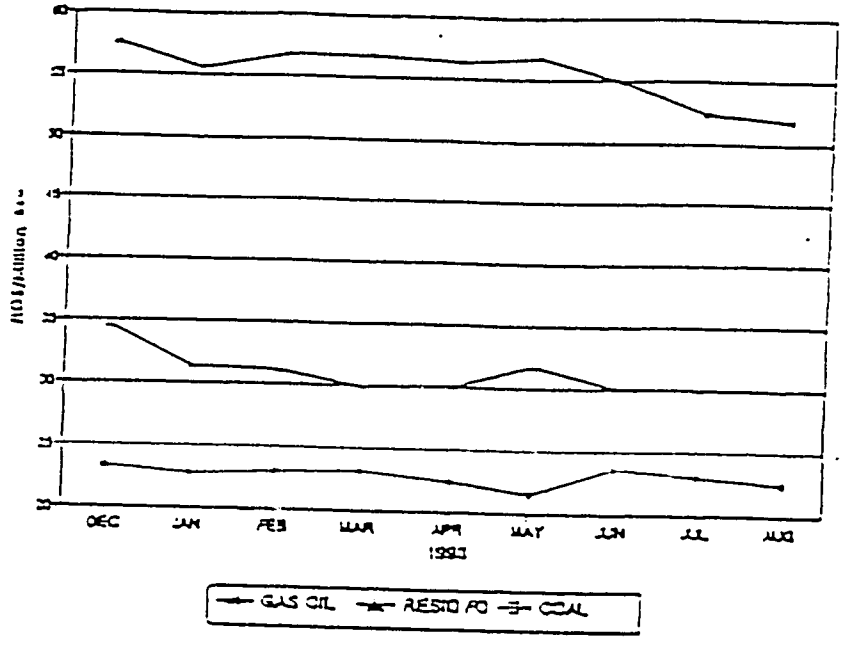


Figure 2 shows the variation of the price of crude imported in the U.S.A. in the years 1976 to 1991. These prices are very volatile and have fluctuated from about US$ 14 to 37 per barrel. Several price "spikes" are observable.

Figure 3 shows historical price data for crude imported in the U.S.A. in the period 1970 to 1991, and the corresponding projections for the years 1991 to 2010. The three future price scenarios show significant variation: the low scenario decreasing from US$ 19 to US$ 18 and the high scenario projecting increasing from US$ 19 to US$ 38! It should be noted that the historical data in this figure have been smoothed and do not show the price "spikes" displayed in Figure 2.

Figure 4 shows the projections (by the same source of the data in Figure 3) of the high and low forecasts of price indices of residuals and coal used for the production of electricity in the U.S.A.. These indices are based on 1990 prices. The projections show that it is expected that the price of coal will increase gradually during the forecast period, while the price of residuals is expected to remain nearly constant,and even decrease for the first two years of the forecast, but increasing rapidly thereafter. The projections show that by the end of the century, the price of residuals is expected to increase more rapidly than the price of coal. It should be noted that the trends shown in this figure are for fuels actually used in generation of electricity, whereas the data in the two previous figures are for crude imported in the U.S.A..

Figure 2

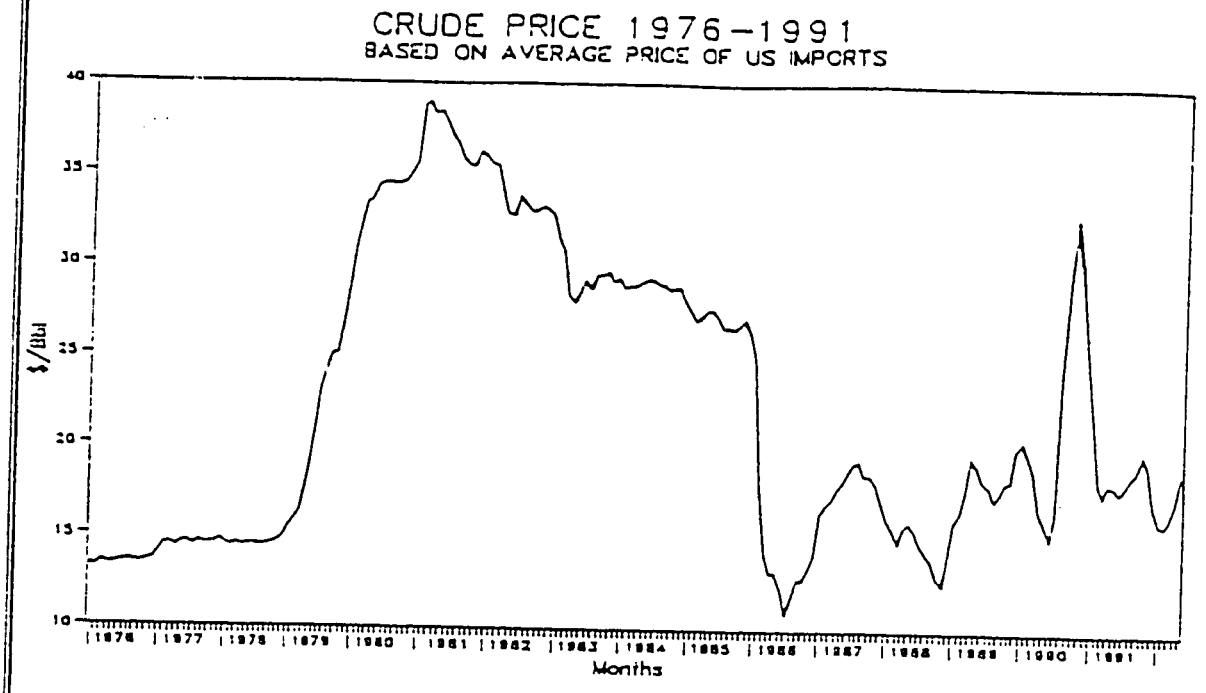
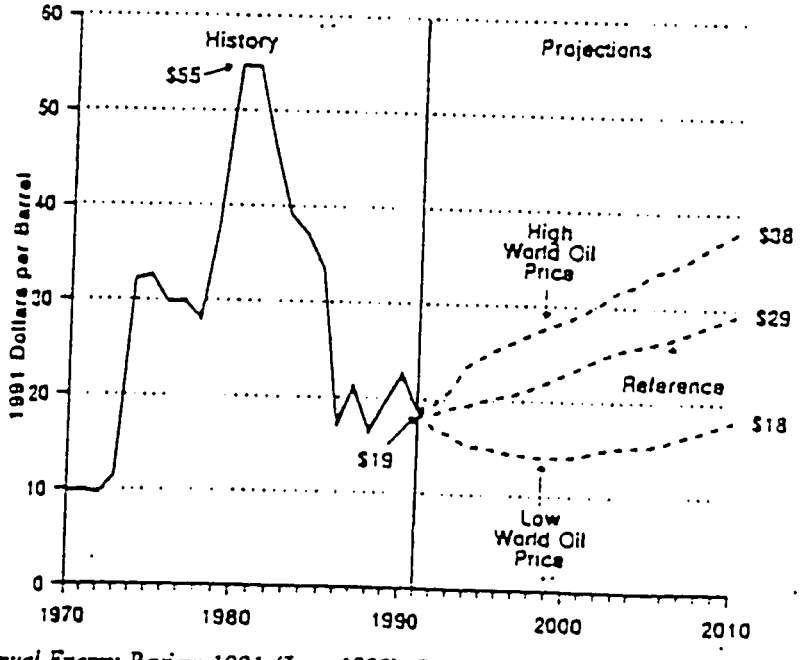


Figure 3

U.S. Refiner's Acquisition Cost of Imported Crude Oil, 1970-2010



Sources: History: *Annual Energy Review* 1991 (June 1992), Projections: EIA *Annual Energy Outlook* 1993

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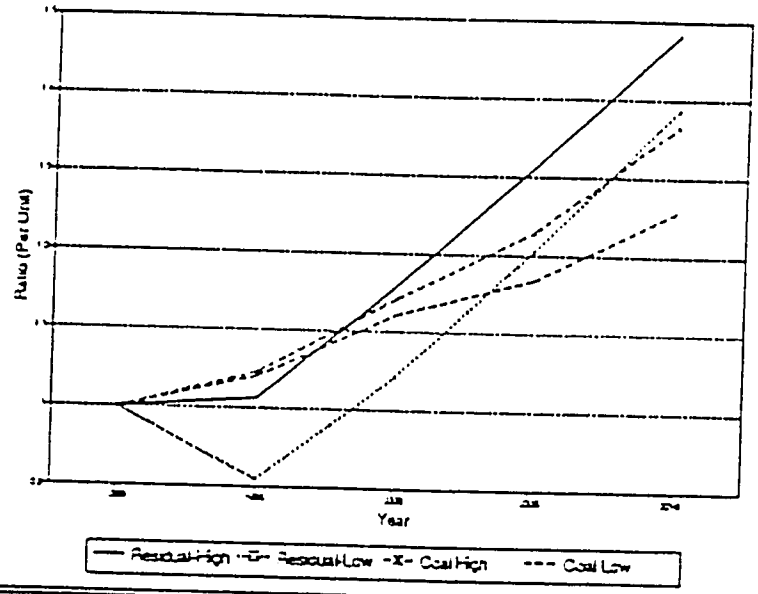
Figure 4
Forecasts of Comparative Changes in
Pricing of Fuel Oil and Coal
Used for Electricity Generation in U.S.A.



2.1.2 The Role of Coal in the Dominican Republic

Presently the Refinery operates efficiently since its whole production of fuel oil can be absorbed by the CDE steam plants located near it in the Haina area. This efficiency is achieved by optimizing the mix of products and of crudes. The remaining CDE steam plants are supplied with imported fuel oil.

The two CDE Itabo units are designed to use either coal or fuel oil, but coal has not been used to its full advantage because of limitations in the plant's coal handling and pulverizing mills equipment. If this equipment were to be placed in continuous and efficient operation, it would be economical to discontinue using fuel oil and to employ coal instead. This increased use of coal would also reduce the emissions of sulphur compounds. (There would be a concomitant increase of carbon dioxide (CO_2) which is inherent to the combustion of coal). If this were to happen, the market for a large proportion of the Refinery's production of fuel oil would cease to exist.

The remaining steam units in the area (those in the Haina plant) are old, and despite frequent rehabilitations, they probably will be retired in the near future since they are approaching the end of their economical life.

If the above two scenarios were to happen, the Refinery would lose most of its local market for fuel oil. Since the process used in the present refinery is more efficient when the proportion of fuel oil produced represents approximately 40 % of the output, under this pessimistic (but possible) scenario, the Refinery would have the following choices:

(a) Construct, at the Refinery, new facilities that would convert the fuel oil into lighter products for which there is an ample local market. This, however, would require a very large investment. Since the Refinery is small, this investment would not be as efficient as in other larger refineries (such as, for example Aruba or Curaçao), and therefore, it is doubtful that the Refinery's products could compete in price with those produced by larger facilities.

(b) Continue producing at the present output patterns and sell the fuel oil at prices that are equivalent to those of coal or try to place the product in the export markets. This would result in much lower margins or even losses for the Refinery.

(c) Reduce the output so that the production of fuel oil would match the reduced local market

(d) Close the refinery and import all the products that are required by the Dominican market. Whereas this would represent shutting down a source of work for many people, the economy as a whole might gain because: (i) there would a considerable saving in foreign exchange by substituting the importation of expensive petroleum-derived products and/or crude oil with coal, which is cheaper, and (ii) the cost of electricity would be cheaper, since it would be produced by a lower priced fuel.

2.2 ENVIRONMENTAL IMPACT

It could be expected that a new power plant built in the Dominican Republic would have to meet more stringent air emission constraints than existing facilities. These constraints would be imposed by either, or both, the Environment Protection law (which is expected to be presented to Congress very shortly) and/or multi-lateral financing agencies which are expected to provide part of the funding for new facilities.

2.2.1 Emissions - Sulphur

Whereas the extent of the environmental constraints is not presently know, undoubtedly there will be some limits on the amount of sulphur compounds emitted by new plants. These sulphur emissions are directly related to the sulphur content of the fuels that are used in the electrical plants. Thus, the power producer has three options of how to control these emissions:

(a) Use fuels with low sulphur content. The cost of these fuels is higher than their high sulphur content counterparts (It should be noted that the petroleum derived fuels presently used in the Dominican Republic are considered to contain a high proportion of sulphur, while the coal used at the Itabo power plant has a low sulphur content).

(b) Use fuels with high sulphur content and install equipment to reduce the sulphur emissions of the plant. This option would require an increase in the investment for the facilities (which would be reflected as an increase of the electric tariffs) and a more complex operation, which also adds to the operating costs and requires a concomitant increase in the electric tariff.

(c) Use a combination of the above two options.

Another issue that could arise from the proposed Environmental Protection law is whether sulphur emission limitations would be imposed on the existing plants. If such limitations are imposed, probably the easiest and fastest solution will be to use low sulphur content fuels.

2.2.2 Emissions - Nitrogen Oxides

The emissions of nitrogen oxides (NO_x) are mainly caused by the combustion temperature and the type of plant being used and are hardly influenced by the fuel that is used. Thus, for example, low speed diesel motors will produce more NO_x than an equivalent steam plant. Depending on the environmental constraints established by future legislation, these emissions may dictate the type of plant used, but they may not necessarily influence the fuel that would be used.

2.2.3 Emissions - Others

The main emissions in this category are: particulates and solid waste products.

(a) Particulates are mainly unburnt carbon. The amount of particulates produced depends on the combination of type of equipment used (for example: steam boilers or diesel engines), the fuel used, and the filtering methods used in the exhaust. The designers of the new plants will have to select the most economical combination of these factors.

(b) Some of types of plants and fuels produce more solid waste products than others. Since solid waste disposal can be a costly process, the designers of the plant will have to select the most economical solution for their particular installations.

2.2.4 Availability of Low Emission Fuels in the Dominican Republic

Presently, the petroleum products normally available in the Dominican Republic market have a high sulphur content because they are mainly derived from Mexican crude, which itself has a high sulphur content (smaller proportions of other low-sulphur crudes or products are blended with high-sulphur products, in order to reduce the element's content). If lower sulphur content fuels were mandated for environmental reasons the following alternatives would be available:

(a) Low-sulphur products could be imported, at a higher cost than their high-sulphur content counterparts presently available.

(b) The refinery could use low-sulphur crude (which is more expensive and probably could not be sourced from the San José Agreement countries of Mexico and Venezuela.

(c) The refinery could install desulfurization equipment to remove the sulphur from the fuels. This alternative would require a sizable investment and increase the operating costs; and therefore it would also increase the costs of producing the respective products.

2.3 THE SAN JOSE AGREEMENT

Under the terms of the San José Agreement, Mexico and Venezuela have established a quota system whereby the Dominican Republic can purchase up to 13 000 bbl/d of crude from Mexico and 13 000 bbl/d of crude and/or products from Venezuela. From the proceeds of these purchases, Mexico and Venezuela make available development loans to the Dominican Republic, for up to twenty percent (20%) of the value of the crude or products sold. The crudes originating from Mexico and Venezuela have a high content of sulphur; additionally, crudes from Venezuela have a very high proportion of metals (especially vanadium and nickel) which make them unattractive for electricity generation.

These development loans are granted to the Dominican Republic at an interest rate of 6%, for a period of 12 years. Restrictions are placed on the nature of the projects that can be financed. Venezuela's restrictions are less stringent than Mexico's since Venezuela admits cover a wider range of goods and services (including petroleum products) than Mexico, and it requires only a Venezuelan added value content of 60%. Mexico requires a value added component of 80%. It is reported that the approval process for these loans is sometimes cumbersome.

The feasibility of continuing to continue using the benefits of the San José Agreement will hinge on whether the new environmental standards require that low-sulphur fuels be used. This would make high-sulphur residual uncompetitive with coal. Thus, the GODR may be called to decide on several associated issues, which could include:

(a) Are the interest rates and maturity periods for the loans granted by the Agreement competitive with similar loans that could be obtained elsewhere?

(b) Is there going to be a sufficient market for high-sulphur products?

(c) Do the goods and services that can be financed with the loans satisfy the national interest and are they attractively priced?

(d) Do the financial benefits that are gained by the use of these loans exceed either the environmental costs associate with use of fuels or the additional cost of using these fuels vs. purchasing oil in other markets?

2.4 LEVIES ON FUELS (FONDO DIFERENCIAL)

The GODR has decreed that certain levies shall be imposed on given products to create a fund to be used to make payments towards the amortization of the foreign debt. Theoretically there are no such levies imposed on petroleum products used by CDE for electricity generation but, in practice, there could be other types of subsidies or levies, depending on the world market petroleum prices and the exchange rate of the RD$ with respect to hard currencies.

2.4.1 Price Controls

The National Secretariat of Commerce and Industry has the legal authority and responsibility of establishing and controlling the prices of petroleum products (but not of crudes) in the Dominican markets. It establishes, by Resolution, the following tiers of prices for each product:

(a) Ex-Refinery Price - Is meant to reflect the price the products should have when they are delivered at the Refinery gate. It is the established controlled price for the sale of products to the distributors. The method by which this price is calculated is not transparent. In practice, this price does not represent the real cost of the products at the Refinery gate.

(b) Price to the Retailer - Reflects the price the distributors charge the retail outlets. It is the established controlled price which results from adding to the Ex-Refinery price the following: (i) the distributor's margin (which should contain the

distributor's profit), (ii) transportation and terminal costs, when applicable, and (iii) a levy to each gallon sold (the levy is different for each product or category of product, and the method to calculate it is determined by Resolution of the Secretariat of Commerce and Industry). The methods used to calculate the cost of each of the components of this price are not transparent, and they are often subject to negotiations among the interested parties.

(c) Price to Retail User - Reflects the price retail outlets charge the ultimate user. It is the controlled price which results from adding the dealer's margin to the price to the retailer. The methods used to calculate the dealer's margin are not transparent and are usually subject to negotiations among the interested parties.

Ex-Refinery, Distributor and User Retail prices are all payable in RD$.

2.4.2 Product Prices Prior to reaching the Refinery Gate

This price, denominated "Parity Price", is the equivalent of the CIF price of imported products plus sea terminal fees. The Refinery is paid the Parity Price for all the products it handles, regardless of whether they are imported or produced by its local facilities.

Normally the Parity Price is the average of the product's price as quoted by the Venezuelan oil company and the average of the maximum and minimum US Gulf Coast Waterborne prices quoted by Platt's Oilgram Price Report. Definite rules are outlined to calculate the resulting price if the relationship between the Venezuelan and Gulf Coast price exceeds certain stated limits. This method of calculating product prices is common in the oil business, and, it has the advantage of smoothing out the variations in prices that would result from using the spot or futures markets as the basis for the establishment of the fuels' pricing. However, it would be desirable to further investigate the existing method of pricing to determine if it is an equitable manner of determining the Parity Price.

The Central Bank of the Republic supplies the foreign exchange to pay for the Parity Price imports. Thus, except for the price component to cover terminal costs (which is not transparent), the Parity Price is affected by fluctuations of: (i) the international oil market prices, and (ii) of the exchange rate for the RD$. The GODR assumes the risks associated with the coverage of these fluctuations.

It should be noted that the Parity Price includes the refiner's margins. Since the Refinery sells its products at the Parity Price (which is an international price), it must compete with other refineries abroad. Thus, the operation of the Refinery is strictly a commercial operation and is not subsidized by the GODR.

2.4.3 Differentials

The name "Differential" is indistinctly applied to two completely different pricing elements: there is a "Differential" which is an amount stated by Resolution of the Secretariat of Commerce and Industry, and changed from time to time, and a "Differential" which is the difference between the Parity and the Ex-Refinery prices, which is changing at all times. The first "Differential" has all the characteristics of a product tax, while the second "Differential", has the characteristics of a variable cross-subsidy and it usually results in a reduction of the amounts assigned to the differential fund. Table 1 shows the amounts of these "differentials" in July, 1993.

Table 1
Contributions (Subsidies) of Each Type of Fuel
July, 1993

Product	Fixed Differential (1)	Variable Differential (2)	Net Amount to Fund (3)
	RDS/Gallon	RDS/Gallon	RDS/Gallon
LPG - Domestic	(6.1300)	(1.8536)	(7.9836)
LPG - Industrial	0.0000	(1.8536)	(1.8536)
Gasoline - Leaded	10.010	(0.7370)	9.2730
Gasoline - Unleaded	10.010	(0.7370)	9.2730
Kerosene	7.9300	(0.3426)	7.6074
Avtur	3.3700	(0.5126)	3.1874
Gas oil - General use	4.3700	(0.1543)	4.2157
Gas oil - CDE\others special	0.0000	(0.4943)	(0.4943)
Gasoil - Merc	0.0000	0.0000	0.0000
Fuel Oil General use	2.4600	(1.2695)	1.1905
Fuel Oil - Others Special	0.0000	(0.6795)	(0.6795)
Fuel Oil - CDE	0.0000	(0.6995)	(0.6795)

As seen in Table 1, the variable differential (Column 2) resulting from the difference between the July 1993 "Ex-Refinery" and "Parity" prices was negative in all cases. In other words, the fixed amounts contributed by each product towards the payment of the foreign loan (Column 3) were reduced by the fact that it cost more to purchase the

products than what the basis for the controlled price (the Ex-Refinery price) allows for. It should be further noted that LPG, the gas oil, and fuel oil used by CDE, and the fuel oil used by other special users (Metaldom, Punta Cana, etc) receive a contribution from the fund. This is seen in Column 3 where these fuels produce a negative contribution to the fund.

As a result of the "variable" differential, it is very difficult for the GODR to budget the revenues from the application of levies to fuels; and, therefore, for it to develop long terms plans to amortize its foreign debt. The volatility of these revenues is reflected by the fact that the Central Bank estimates that an increase of one RD$ in the international price of oil results in a loss of revenue to the GODR of RD$ 100 000 000!

2.4.4 Special Pricing to Large Customers

Some large users receive special treatment in the pricing of the fuels they consume. In most cases, part of this fuel is used to generate electricity. Some of these special treatments were granted many years ago, so that it is difficult to ascertain their details. We recommended that a study of the methods used to grant these special treatments and of their impact in the country's fuel scenario be carried out. As a general principle, the Refinery does not sell directly to the special customers, and the transaction should also be carried through a distributor, although there appear to be exceptions to this rule.

We were informed that some form of special treatment is granted to the following: CDE, Falconbridge Dominicana, the Wartsila Plants, Metaldom, Punta Cana, Cementos Nacionales, and Central La Romana. However the details of the special arrangements are somewhat sketchy and even contradictory. Some of the details of these arrangements deserve further discussion:

(a) <u>CDE -Petroleum Products</u> - Indications are that it pays the parity price for the fuels it uses for the production of electricity and the normal market prices for fuels used in its transportation equipment. However there are three sets of data that throw doubts as to the accuracy of this appreciation: (i) if the purchase of the fuel is through distributors, and the parity price is used, does the distributor get a margin to carry out the transaction?, (ii) In Table 1, Column 2, it is seen that CDE has negative variable differentials, which means that the Ex-Refinery price established for it is less than the parity price, which seems to contradict the statement in (i), and (iii) in Figure 1, CDE shows unit prices for Gas oil and residual that fluctuate from month to month and appear to follow the general trends of the oil market - this could be an indication that the parity price is used.

(b) Wartsila and Wartsilita Plants - These plants use # 5 fuel oil, which differs from the fuel oil used in the steam plants (which approaches # 6). # 5 fuel oil is not in the list of products supplied through the Refinery. The Plants import this fuel directly and have made arrangements that its price be established in accordance with the New York market (instead of the methods used to establish the Parity price). We could not determine if these fuels are invoiced by Distributors.

(c) Falconbridge Dominicana - Uses a special type of kerosene to supply its own refinery, which produces residuals that are used by the mining company to generate its own requirements of electricity. It is reported that the electricity generated by Falconbridge for CDE uses fuel oil supplied by CDE. We could not obtain information as to what controls are used to separate the consumption of fuel for self generation and for sale to CDE.

(d) Central La Romana - Apparently, it imports its fuel requirements directly, but no details were available. The special fuel supply agreement expires next year.

(e) Other users - With the exception of Metaldom, their electricity generation capacity is relatively small. Metaldom uses only about 1/4 of its installed capacity. It is not known whether these firms use the majority of the fuels they purchase for electricity generation or industrial purposes.

Box A

Assume that the Government has a foreign debt of 10 000 and wants to pay it off in 10 years. Thus, not including interest, the yearly payments for this amount would be 1 000. Based on the existing price of petroleum, the exchange rate and a forecast of the consumption of each product, the Government calculates the "Fixed Differential" that are needed to produce a revenue of 1 000 to cover the yearly debt amortization amounts. However, in the second year there is a sudden increase of the oil prices and a lowering of the exchange rate, so that a negative "variable differential" of 300 is needed to maintain the prices to the consumers. This amount of 300 is deducted from the revenues from the "fixed differential" and thus only 700 are available yearly to reduce the foreign loan. At this rate it will take nearly 14 years[1] (instead of 10) to pay the 10 000 (the interest payments for 14 years instead of 10 years will also be considerably higher).

Note 1
Years = first year (1) + (10 000 - 1 000)/700

2.4.5 Effect of the Differentials on Fuel Consumer Prices

The fixed differential has a direct bearing on the price charged to the consumers. Whereas the variable differential is not directly felt by the consumers, it influences the time the

fixed differential must be applied. Box A is an oversimplified hypothetical example of the impact of these two charges.

2.4.6 Options Available for Contributions to the Differential Fund

The main characteristics of the existing Dominican price setting structure are:

> *The user prices do not fluctuate continuously, but the revenue to the GODR does fluctuate with the changes of world oil market prices and foreign exchange rate variations*

If the GODR desires to obtain steadier revenues, it could eliminate the variable differential (as shown in Column 2 of Table 1), while maintaining a fixed differential (as shown in Column 1 of Table 1). Thus, the main characteristics of the alternative pricing structure could be:

> *The user prices would fluctuate continuously with the changes of world oil market prices and foreign exchange rate variations, but the revenue to the GODR would remain steady*

2.4.7 The Present Pricing Structure and its Market Signals to the Consumer

Paragraph 2.4.1 describes operation of the price control mechanisms. In order to simplify the explanation of this operation we neglected the distributor and retailers margins and limited our discussion to the largest components of the consumer price: the sum of the ex-Refinery price and the "Fixed Differential". We then compare this sum the July 1993 "Parity" price. Table 2 shows these comparisons for some of the most significant fuels.

Column 5 in Table 2 shows the ratio of the sum of major components of the selling price, compared to the international cost (parity price) of each of the fuels. The higher the ratio in Column 5, the more revenue the GODR will gain from levies on the fuel. Conversely, the lower the ratio, the more the product's selling price will be subsidized by the other products. Thus, Table 2 illustrates that gasoline pays the highest share and LPG is heavily subsidized.

It is the prerogative of all governments to tax or subsidize any kind of product or service. Taxation/subsidization of fuels is universally accepted as a means of obtaining government revenue or to give signals to the consumer to change its utilization patterns for certain fuels. These signals may have political, economic or environmental justifications.

An incomplete discussion of the comparison of the controlled prices for gas oil and gasoline may show the need of further studying the consequences of not having the price reflect the cost of the goods. It will be noted that the parity price of gas oil is 95% of

Table 2
Comparison of Fuels' Price Components
July 1993
All prices RD$/bbl

Fuel	Parity Price (1)	Ex-Refin Price (2)	Fixed Differ/ (3)	Total (2)+(3) (4)	Ratio (4)/(1) (5)
Gasoline-Leaded	7.7270	6.9900	10.0100	17.000	2.34
Kerosene	7.5826	7.3400	7.9300	15.270	1.99
Gas oil	7.3343	7.1800	4.3700	11.550	1.57
Gas oil-CDE	7.2043	6.7100	0.0000	6.710	0.93
Fuel Oil-CDE	4.8095	4.110	0.0000	4.110	0.85
LPG-Domestic	6.3364	8.1900	-6.1300	2.060	0.33

the parity price of gasoline and yet the major components of its selling price are only 68% of gasoline's. This could be interpreted by the unsophisticated consumer that it would be better to use gas oil instead of gasoline. Whereas this decision would be politically attractive to some sectors of the economy (especially agriculture and transportation) because it decreases their costs, it may be very unattractive to the economy as a whole, because it would require the importation of more expensive vehicles or tractors. It might also be uneconomical to the agricultural or transportation user who does not operate his equipment for a large portion of the time (because he does not use many gallons of fuel and the saving in fuel costs could be by the financial costs associated with more expensive equipment).

Thus, *the GODR may wish to reappraise the amount of taxation and cross-subsidies applicable to each type of fuel to determine their impact on government revenues and the corresponding costs to the Dominican economy and environment.*

2.4.8 The Usefulness of a Levy Being Placed on the Prices of Fuels Used by CDE for the Production of Electricity

The GODR may be called to decide whether fuels used by CDE (or any other producer) to generate electricity should be taxed or not. This tax would have a direct effect on the

electricity tariffs. If this tax were to become a reality, thought could be given to the best method to collect it. The methods that could be used to collect this tax include:

(a) A direct levy to the fuels delivered to CDE. This methodology would be similar to that used now to collect the levies from fuels that include such charges. This levy would be reflected in the cost of electricity to the final consumers through the electric tariffs.

(b) A tax charged to the electricity sold by each utility (either as a fixed charge per kWh or as a percentage of the electric bill). This tax could be designed to render the same revenue as the previous method. The main disadvantage of this method is that, in order to be effective, CDE should be able to collect nearly 100% of the invoices it issues - which is not the case now.

3 THE REFINERY MONOPOLY ON THE IMPORTATION OF PETROLEUM PRODUCTS

Except for the few exceptions of large users, the Refinery imports all the petroleum crudes and products used in the Dominican Republic. This exclusive responsibility has advantages and disadvantages to the economy as a whole and the eventual independent power producers that might participate in the production of electricity from thermal plants.

3.1 ADVANTAGES AND DISADVANTAGES TO THE DOMINICAN REPUBLIC ECONOMY

3.1.1 Advantages

(a) Coordination of the needs of the market. This function is extremely important if the utilization of the Refinery is to be optimized. However, as the local market requirements increase, the output of the Refinery will be insufficient to meet the full market for most products (with the possible exception of fuel oil, which could be replaced by coal), and therefore, the extra needs would have to be imported. This would change the optimization patterns and justifications, and it may increase the need of the Refinery to adjust its production to varying patterns of consumption.

(b) As a whole, the Refinery should be able to obtain better pricing terms for the products it purchases in the international markets, because its purchases are about 30 times the needs of even the largest individual consumer (excepting CDE)[1].

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1 There are some petroleum companies that are heavily involved in electricity generation. Since these companies are much larger than the Refinery, and they are also accustomed to deal in the international petroleum markets, they could obtain better economies of scale than the Refinery

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(c) Because of the volume of petroleum products the Refinery handles, it can use larger ships, thereby reducing its transportation costs [2]

(d) The methods used to establish parity prices for the products that are now available in the Dominican market appear to be fair and to provide the lowest overall prices for these fuels.

(e) Again, because of the larger volumes handled and the wide area of distribution, the Refinery can locate its terminals and storage tank facilities where it is the most efficient, thereby reducing its net investment and operating costs[2].

(f) With the existing price differential structure, the Refinery can maintain a rigorous control of the quantities of the various products that are imported. Thus, there is also a better control of the calculations to compute the "Fixed" and "Variable" differentials previously described.

3.1.2 Disadvantages

(a) If new types of fuels are to be imported by the Refinery, it would be necessary to establish new methods and indexing for their parity prices. This could introduce costly delays and produce unfair pricing practices.

(b) The Refinery is not necessarily equipped to deal with the acquisition of coal. Yet, coal may become a major player in the generation of electricity.

3.2 ADVANTAGES AND DISADVANTAGES TO THE PRIVATE POWER PRODUCER

3.2.1 Advantages

(a) Since the Refinery is given preferential treatment in obtaining foreign currency when there are shortages of it, the products it sells through distributors are payable in RD$. Since private power producers will be paid in local currency, this would be an efficient way of reducing the amounts of their revenues that need to be converted into hard currency.

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2 There are some petroleum companies that are heavily involved in electricity generation. Since these companies are much larger than the Refinery, and they are also accustomed to deal in the international petroleum markets, they could obtain better economies of scale than the Refinery

3.2.2 Disadvantages

(a) The Refinery may not be interested in importing relatively small quantities of fuels not found in the local market. These special fuels may be essential to the operation of new private plants, and their use would be dictated by the type of equipment used or environmental requirements.

(b) It is claimed that the Refinery does not obtain any profit from the fuels it imports to cover the market requirements over and above the its own production. Thus, it may not be interested in obtaining the best deal for the fuels used by private electricity producers. Whereas these fuels might constitute a small part of the total country's needs, they represent a major component of the private power producer's costs, who would be interested in having a more direct say in their acquisition.

(c) The large users would not have an immediate and direct control of the quality of the fuels, if these are produced or imported by the Refinery. Since the control of fuel quality is a very important function of power plant's operation, some potential private producers may not be interested in participating in the Dominican Republic, unless they had direct control of the quality of the fuel when it is purchased.

(d) Since the Refinery would be interested in using large transportation facilities for all the fuels it imports, it may not be able to meet the delivery needs of some consumers. Private power producers may not be interested in participating if they do not have a direct control on the punctual delivery of fuel.

(e) Some private producers may be interested in risking purchasing their fuel in the spot and futures markets, in order to maximize their profits. These transactions would not have a bearing in the price of electricity since normally the fuel component of the price of electricity is indexed to an international marker (similar to the way the "Parity" price is established), and not to the actual cost of the fuel. If the Refinery has the monopoly on the purchase of fuels, these producers may not be interested in participating in the Dominican Republic.

3.3 EFFECT OF THE REFINERY'S CONTROL (MONOPOLY) ON PETROLEUM CRUDES AND PRODUCTS

3.3.1 The Refinery concerns

It is claimed that the Refinery has a monopoly for the import of petroleum products. Whereas this is true for the great majority of products, it cannot be said that it is valid for the fuels that would be used for the production of electricity. The circumstances that place the latter fuels in a separate category are:

(a) There are several large users of fuel oil and gas oil, other than CDE that either import their own fuels or are given special considerations in their pricing.

(b) In the future, coal may take a predominant place in the production of electricity, thus detracting from the monopolistic role of the refinery.

(c) Mainly for environmental reasons, some of the future power producers may need to use special fuels which now are not available in the local market or that will have to come from sources outside the San José Agreement. It may not be in the best interest of the Refinery to deal with these relatively small quantities of products and it could be preferable to let the final users import them.

(d) Unless the electric plants in the Haina area change drastically their pattern of fuel usage, the Refinery would have to import the future needs of petroleum products by electric power producers. The Refinery would not profit or lose from these transactions.

On the other hand, as outlined in Paragraphs 3.1 and 3.2, the Refinery provides so many advantages (especially payment in RD$ and possibilities for better prices) towards the purchase of products from its distributors that it would be difficult, for many power producers, to justify the purchase of products elsewhere.

3.3.2 The GODR concerns

The continuance of the Refinery's virtual monopoly would accrue the following advantages and disadvantages to the GODR:

(a) In prior discussions it has been shown that the GODR's revenues for the Differential Fund are diminished because of the methods used to price the fuels employed by CDE. Thus, unless the methods used to obtain these revenues are modified, it would be advantageous for the GODR if the fuels used by CDE were purchased directly by the user.

(b) The GODR is concerned that it would lose control of the collection of levies and differentials that should be paid by fuels imported for power generation. These revenues (which are zero because the fuels are charged a zero differential) are now controlled through information supplied by the Refinery. It should be pointed out that there is a high probability that practical considerations will dictate that nearly all petroleum products imported directly by power producers will be delivered through the Refinery terminal. Thus, these fuels will be metered in the same manner that all received fuels are metered now. If the delivery of the fuels were through terminals owned by the power producers, there would be no difficulty in installing and using suitable metering equipment and to establish elementary controls to insure that all deliveries are metered. It must remembered that these deliveries would be relatively large and few in number.

(c) Since coal could become the prevalent fuel for electricity generation, the GODR could establish policies regarding levies or subsidies to be applied to coal. These policies could also establish the methods to be used to measure and account for any levies or subsidies arising from these policies. There are very effective means of controlling and auditing the quantities of coal that are either delivered at the dock-side or at the plants' storage areas. It should be pointed out that coal now is not a contributor to the Differential Fund.

There may be advantages at maintaining formally the monopoly of the Refinery for the importation of petroleum crudes and products to be used by the domestic, commercial, transportation and small industry sectors. However, there is no need to establish such a monopoly for the fuels used by producers of electricity because: (i) there are precedents of existing large users of petroleum fuels being exempted from this restriction, (ii) many power producers would find that it would be advantageous for them to acquire their fuel requirements from the Refinery, (iii) the importation of relatively small quantities of special fuels required by individual power producers may be unattractive to the Refinery, (iv) coal may become the most important fuel for electricity generation and even supplant the existing consumption of fuel oil used for this purpose, and (v) easily implemented assurances could be implemented to assure to the GODR the collection of any levies that could be charged to fuels imported directly.

4 EQUALITY OF CONDITIONS FOR THE PURCHASE OF FUEL BY CDE AND PRIVATE POWER PRODUCERS

The question has arisen as to whether a preferential treatment in pricing should be granted to the fuels used by CDE, as compared to the fuel used by other producers.

It is not clear if CDE presently has a preferential treatment for the fuels it purchases, as compared to other significant producers such as Falconbridge Dominicana, Wartsila or Metaldom. However, there are indications are that such preference may exist. Nonetheless, it has been

5 OTHER STUDIES

This paper outlines several options and principles that need to be decided in order to assure the orderly implementation of adequate policies that would safeguard the non-discriminatory pricing of fuels used for electricity generation. However, such orderly implementation should be based on facts and figures that would assure that the desired results would be obtained. Obtaining such facts and figures, and establishing the methods to maintain and analyze the data, may be the subject of further studies.

ATTACHMENT 3

(Pre-qualification Document)

THE GOVERNMENT OF THE DOMINICAN REPUBLIC

PREQUALIFICATION DOCUMENT

FOR

SELECTION OF A SPONSOR
TO DEVELOP 250 MW FOSSIL FIRED POWER STATION

IN THE DOMINICAN REPUBLIC
ON A BUILD, OWN AND OPERATE (BOO) BASIS

Prepared by:

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November, 1993

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SECTION I

INVITATION FOR PREQUALIFICATION TO SUBMIT A PROPOSAL FOR A 250 MW FOSSIL FIRED POWER PLANT IN THE DOMINICAN REPUBLIC

The Government of The Dominican Republic (GODR), represented by the Corporación Dominicana de Electricidad (CDE) invites interested Applicants to submit Prequalification Statements for the right to develop a 250 MW Fossil Fired Power Station consisting of two units of 125 MW each, or any equivalent combination of Fossil Fired Units which will provide a 250 MW power station at ambient site conditions and all support facilities (the Project) at a location to be decided, in the North Shore of the Dominican Republic, between the city of Puerto Plata and the Bay of Luperón. CDE reserves the right to limit the construction of the initial stage of the project to one 125 MW unit, and to follow said construction with a subsequent 125 MW unit. The Project Sponsor selected from the prequalified Applicants will be required to arrange the necessary financing; negotiate the power purchase, construction, fuel supply, and other contracts required for implementation of the Project and construct and operate the Project.

Only prequalified Applicants will be invited by GODR, represented by CDE., to participate in the forthcoming Request for Proposals (RFP).

The closing date for receipt by CDE of completed Prequalification Statements will be Hours, _____ time on

_____. Completed Prequalification Statements and any requests for additional information and/or questions concerning the Prequalification Document may be submitted in writing to:

Corporación Dominicana de Electricidad (CDE)

Attention: Mr.
Telephone:
Telex:
Fax No.:

SECTION II

PREQUALIFICATION DOCUMENT FOR SELECTION OF A SPONSOR TO DEVELOP A 250 MW FOSSIL FIRED POWER STATION IN THE DOMINICAN REPUBLIC

A. BACKGROUND

1 The Government of the Dominican Republic (GODR) has recently adopted a strategy for the development of the power sector, which envisages a large role for the private sector in the operation of the sector. As part of that strategy, the Government has decided that all new generation capacity will be installed, owned and operated by the private sector and procured through competitive solicitations. GODR has established the administrative mechanisms and policy framework to facilitate the solicitation of private investors to develop generating facilities.

2 In support of its efforts to attract private investment in power generation, GODR has requested funding from the World Bank and Inter-American Development Bank to be onlent to the private entity selected to develop the 250 MW power plant on the north shore of the Dominican Republic between the city of Puerto Plata and the Bay of Luperón. Funding may also be available, through the Government, from other multi- and bilateral sources. It is expected that this funding would cover a portion of the financing requirements of the Project, and would be available with an extended maturity and grace period. The balance of the financing would be mobilized by the selected developer from both equity and debt sources.

B. PROJECT DEVELOPMENT PROCESS

1 The process for the development of the Project, including selection of the Project Sponsor, shall include the following elements:

1.1 GODR intends to develop the Project on a build-own-operate (BOO) basis. BOO refers to an arrangement whereby a Project Company to be established by a Sponsor(s) undertakes to finance, design, construct, own, operate, and maintain an electric power producing facility. The power generated will be sold to CDE or to its successors, pursuant to a mutually agreed Power Purchase Agreement (PPA), salient features of which are summarized in Appendix "A" of this document. The expected validity of the PPA is twenty (20) years.

1.2 On the basis of the prequalification process as set forth herein, CDE will qualify Applicants. Those Applicants who submit a completed Prequalification Statement as contained in Appendix "C" of this document will be selected and evaluated in accordance with the criteria outlined in Section II H. CDE intends to select all

applicants that will meet the scoring threshold specified in Section H. The prequalified Applicants will then be requested to submit proposals for the exclusive right to develop the Project. The Project Sponsor will be selected based upon the proposals received in response to the RFP.

1.3 The Project Sponsor will negotiate and sign the Implementation Agreement (IA), salient features of which are summarized in Appendix "A", the Power Purchase Agreement (PPA) and other agreements. Furthermore, the Project Sponsor will incorporate any Project Company, in The Dominican Republic if so required by Dominican laws.

1.4 The Sponsor will only have to ensure that goods and services are procured from World Bank and IDB member countries, and the construction contract would be approved by both Banks.

1.5 The Sponsor will be responsible for the arrangement of the financing for the Project. The Project should be funded on a 75/25 debt/equity ratio. The Sponsor will invest at least 35% of the equity on its own account, and will be responsible for raising the remaining 65% (or less) of the equity. Alternative financing plans which minimize the amount of GODR-guaranteed debt will be encouraged and considered during the evaluation of the proposals received in response to a Request for Proposals to be issued to all prequalified bidders.

C. SCOPE OF WORK

1 The Project Sponsor will be responsible for selecting the technology dictating the design and fuel usage of the plant and to carry out the plant's design, construction and commissioning, at its own risk. The Project Sponsor will also have to demonstrate that the technology used will has been applied, in commercial operations, for no less than four (4) years.

2 The project Sponsor will be required to arrange the necessary financing, negotiate the Project agreements, tender for the construction of the power station, provide plant operations, fuel supply and overall project management as required to develop, construct and operate the Project. The Project Sponsor, with the support of GODR shall also obtain necessary permits for importation of materials and equipment, construction of the Project and for the Project's operations. In addition, the Project Sponsor shall perform the following additional tasks:

2.1 Soils testing and studies of cooling and process water needs

2.2 Studies to show compliance to environmental impact studies performed by others.

2.3 Meet the pre-agreed commitments for the Project at the end of the contractual period.

D. PHYSICAL FACILITIES OF THE PROJECT

1 The Project consists of a complete 250 MW (or any equivalent combination) Fossil Fired Power Station and all support facilities which would include, among other things, the following:

1.1 Complete Fossil Fired Generation Units with a total power generation capacity of 250 MW at ambient site conditions, to operate as a base-loaded plant with an Equivalent Availability factor of 85% [1];

1.2 An electric substation to connect the plant to the 138 kV transmission lines to be brought adjacent to the plant site.

1.3 All required site support facilities including, but not be limited to, the administration buildings, warehouses, workshops, fuel delivery and storage facilities, and cooling and process water systems; and

1.4 All necessary site infrastructure such as roads, parking areas, lighting, security fencing, workers living quarters, etc.

2 Site: CDE shall suggest alternate locations for the site for the Project, depending on results of on-going siting studies.

3 Fuel Supply: The plant will be operated with fuel or fuels procured and purchased by the Project Sponsor.

E. PROPOSED PROJECT TIMETABLE

The proposed project timetable is as follows:

Activity	Completion Date
• Submittal of Prequalification Statements by interested Applicants	February 18, 1994
• Selection of qualified Applicants	April 15, 1994
• Issue RFP Document to qualified Applicants	April 22, 1994
• Pre-Bid conference	May 9, 1994
• Submittal of proposals by qualified Applicants	August 12, 1994
• Selection of the successful Project Sponsor	October 7, 1994

[1] As defined in ANSI/IEEE Standard 762-1987, Appendix C, Equation c7

F. INSTRUCTIONS TO APPLICANTS

1 General Rules

(a) All information requested shall be provided in the English language.

(b) Answers must be provided to all Annexes in the Prequalification Statement. If necessary, additional sheets may be attached.

(c) Each sheet should be signed by a person or persons duly authorized to sign on behalf of the Applicant and any associated individuals or companies. Such authorization shall be indicated by one or more written powers-of-attorney accompanying the Prequalification Statements.

(d) CDE will not enter into any correspondence with Applicants except to seek clarification, when necessary.

(e) All documents submitted by the Applicants will be treated as confidential and will not be returned.

2 Prequalification Documents:

(a) Applicants are required to use the prescribed "Applicant's Prequalification Statement" as contained in Appendix "B" to signify their intention to prequalify to submit a RFP. This Prequalification Statement consists of the following forms and annexes:

Form I	Affidavit
Form II	Applicant's Organization
Form III	Information to be furnished by corporations
Form IV	Information to be furnished by unincorporated associations
Form V	Financial Capability
Form VI	Litigation History
Form VII	Detailed Information to be furnished by Applicant:

Annex A	Articles of Incorporation, etc.
Annex B	Privilege Tax Receipts
Annex C	Curriculum Vitae of Key Technical personnel
Annex D	Certificates of Registration
Annex E	Technical Capabilities
Annex F	Experience
Annex G	Power Station Performance
Annex H	Proposed Organization and Implementation Plan

(b) For determining the experience and technical capability of an unincorporated association, the experience and technical capability of each member shall be combined on the respective forms and evaluated.

(c) For determining the combined financial capability of an unincorporated association, each member shall complete and submit "Annex I - Audited Financial Statements" for evaluation.

3 Procedures and Timing

(a) Submission of Applicant's Prequalification Statement

An original and five (5) copies of the Applicant's Qualification Statement (Appendix "B") shall be submitted on or before 17:00 hours, local time, on February 18, 1994.

(b) Applications shall be submitted to:

Corporación Dominicana de Electricidad (CDE)

Attention:

Tel No.:
Fax No:
Telex:

(c) Prequalification Statements which are received after the deadline will not be considered and the Applicant will be so notified. The Prequalification Statement may be mailed, couriered, faxed or telexed to CDE. In case the document is faxed or telexed, the original and five (5) copies shall be received no later than three (3) business days after the submission date of the faxed or telexed copy.

4 Disposition of Applications:

CDE will inform each Applicant of the disposition of its proposal for prequalification. CDE reserves the right to accept or reject any Applicant's Prequalification Statement and to reject all applications, without thereby incurring any liability to the affected Applicants or any obligation to inform the Applicants of the grounds for the action of CDE. CDE reserves the right not to award or enter into any contract or agreements with any Applicants, and may terminate the prequalification process at any time without thereby incurring any liability to any Applicant.

G. PREQUALIFICATION CRITERIA

The Applicants must demonstrate its experience in the development, financing, design, construction and operation of an Fossil Fire Power Plant of size similar to the proposed Project. If the Applicant has insufficient experience in a specific area, it may associate itself with other individuals or companies, whose experience may be demonstrated in the application. The following criteria shall be considered in the evaluation of Prequalification Statements:

1 Ability to Raise Equity and Administer Project Financing:

The Applicant must indicate its previous experience in raising equity, either internally or from other sources for projects. The Applicant must provide audited financial statements for the past 3 years. If Applicant associates with other individuals or companies, then the names, background information and financial statements for these individuals or companies must be provided.

2 Technical Capability and Qualification:

The Applicant shall provide evidence of having within its organization the technical capability to design, engineer and manage the construction of an international project of similar size. A Project organization chart and a list of key personnel (lead personnel in the areas of engineering, construction, finance, legal and project management) which the Applicant proposes to employ during the development of the Project shall be submitted. In lieu of the above, the Applicant may associate with or engage a reputable engineering firm with an acceptable background in international engineering, design, construction and management to provide the required technical capability. The Applicants are expected to provide a detailed implementation plan which supports the Proposed Project Timetable shown in Section II-E.

3 Project Development Experience:

The Applicant shall provide evidence of its experience in the development of: (i) fossil fired power projects, and (ii) privately owned projects (not limited to power generation) in developing countries.

H. EVALUATION PROCEDURE

1 Prequalification will be based on each Applicant's Prequalification Statement meeting all the following minimum pass/fail criteria regarding the Applicant's ability to raise equity and administer project financing, technical capability and qualifications and project development experience, as demonstrated by the Applicant's responses in the forms attached to the "Applicant's Qualification Statement." The GODR reserves the right to waive minor deviations, if they do not materially affect the capability of an Applicant to perform the project. Experience and resources of Subcontractors shall not be taken into account in determining the Applicant's compliance with the prequalification criteria:

1.1 Ability to Raise Equity and Administer Project Financing

(a) Financial statements and other supporting data and information from at least three (3) projects which confirms that Applicant arranged US$ 30 million in equity for each project listed. Yes_____ No_____

(b) Financial statements and other supporting data and information from at least three (3) projects which confirms that Applicant arranged US$ 100 million in debt financing for each project listed. Yes_____ No_____

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(c) The audited balance sheets for the last three years should be submitted and must demonstrate the soundness of the Applicant's financial position, showing long-term profitability where necessary, the GODR will make inquires with the Applicant's bankers.

The Applicant will supply information (résumés) on prime candidates which meet the above experience requirements. Yes_____ No_____

Table 1.1(d)

Position	Total Experience	In Similar Work	As Manager of Similar Work
Chief Financial Officer	10 years	5 years	5 years
Manager Project Finance	10 years	5 years	5 years
Loan Administrator	6 years	3 years	3 years

(d) Current capability to manage and administer financing of the Project based upon qualified personnel to fill the following positions:

The Applicant will supply information (resumes) on prime candidates which meet the above experience requirements.

1.2 Technical Qualifications:

(a) Current capability to design, engineer and manage the construction of the project based upon qualified personnel to fill the following positions:
Yes_____ No_____

(b) Applicant shall furnish a written description of its existing facilities for the design, engineering and management of the project to include building floor plans and equipment lists to show that it owns/leases the proper facilities and equipment to perform the work.
Yes_____ No_____

(c) Applicant shall furnish a detailed written narrative which will outline its proposed organization both onshore and offshore to perform the project and its proposed approach to implementing the project. The proposed

Table 1.2(a)

Position	Total Experience	In Similar Work	As Manager of Similar Work
Vice President Operations	10 years	5 years	5 years
Manager of Engineering	10 years	5 years	5 years
Chief Mechanical Engineer	10 years	5 years	5 years
Chief Electrical Engineer	10 years	5 years	5 years
Chief Financial Officer	10 years	5 years	5 years
Manager Project Finance	10 years	5 years	5 years
Loan Administrator	6 years	3 years	3 years

organization plan and implementation plan must address the following three project phases:

(i) Preconstruction/Financing Phase

(ii) Construction/Start-up/Commissioning Phase

(iii) Operation and Maintenance Phase

Yes_____ No_____

(d) Litigation History. The Applicant shall provide accurate information on any litigation or arbitration from contracts completed or under execution by him over the past five years. A consistent history of awards against the Applicant or any partner of a joint venture may result in failure of the Applicant.

1.3 Project Development Experience

(a) Applicant shall indicate successful project development experience on at least two (2) fossil fired power generating projects of 75 MW or larger and having reliable operating units for at least one (1) year as a minimum.

Yes_____ No_____

(b) Applicant shall indicate successful project development experience on at least one (1) project in a developing country.

Yes_____ No_____

2 GODR intends to select all Prequalified Applicants meeting the above pass/fail criteria.

3 Applicants can be disqualified from the prequalification process and dropped from further consideration, for the following reasons among others:

(a) Receipt of Prequalification Statement after the required deadline.

(b) Failure to submit required support documentation within the required time frame.

(c) Failure to submit a Prequalification Statement with all forms completed and information and data provided, as required by CDE.

(d) Material inconsistencies in the information submitted.

(e) Willful misrepresentations in the completed Prequalification Statement and supporting documentation.

APPENDIX A

SUMMARY OF THE PROPOSED IMPLEMENTATION AND POWER PURCHASE AGREEMENT

IMPLEMENTATION AGREEMENT

Summary of Terms and Conditions

The Project Sponsor will enter into an Implementation Agreement (the "IA") with GODR on or before financial closing. Pursuant to the IA, GODR will grant to the Sponsor the exclusive right to design, build, own, and operate a 250 MW (or any equivalent combination) Fossil Fired Power Station (the "Complex"). In addition, GODR will offer certain assistance to the Sponsor in order to facilitate the construction and operation of the Complex. A summary of the principal assistance offered by GODR follows:

- GODR, through the Bank of Dominican Republic, will permit the maintenance of foreign currency bank accounts in Dominican Republic, will make foreign currency available, and will permit the free transfer abroad of funds necessary for the project.
- The lenders will have the right to nominate a new Sponsor prior to foreclosure in certain defined circumstances.
- GODR will expedite, and ensure the approval of, the Sponsor's applications for certain specified regulatory approvals.
- GODR will grant work permits, passes, visa, etc. to persons involved in the project, subject to GODR's right to deny individual applications.

In addition, the IA contains certain other provisions, including:

- The transfer of shares in the project company by the initial shareholders will be restricted for a number of years.
- Either party may terminate the IA under certain specified conditions. GODR may terminate the IA for, among other things, failure of the Sponsor to achieve certain milestone dates, abandonment of construction or operation of the Complex, assignment of the IA without consent, or the appointment of an operations and maintenance contractor without consent.

POWER PURCHASE AGREEMENT

Summary of Terms and Conditions

The Project Sponsor will enter into a Power Purchase Agreement (the "PPA") with CDE or its SUCCESSORS on or before financial closing. Pursuant to the PPA, the Sponsor will build, own and operate a 250 MW (or any equivalent combination) Fossil Fired Power Station (the "Complex") and will sell all of the capacity and energy from the Complex to CDE or its SUCCESSORS. The terms and conditions governing the conditions of the sale are as follows:

- The term of the PPA will be 20 years from the date of the commissioning of the Complex and may be extended for an additional period.

- The Complex will be fueled with (name fuel or fuels) to be purchased by the Complex .

- The Complex will be fully dispatchable by CDE or its SUCCESSORS, subject to the approved scheduled outages and maintenance outages.

- The capacity of the Complex will be tested at regular intervals, and CDE or its SUCCESSORS will pay the Sponsor a fixed amount per kW of tested capacity which is subject to periodic indexation. The capacity payment will cover all fixed costs, including the cost of construction, debt service, fixed operation and maintenance costs, and a return on equity.

- Energy generated by the Complex will be metered by CDE or its SUCCESSORS at regular intervals, and CDE or its SUCCESSORS will pay the Sponsor a fixed amount per kWh for such measured energy which is subject to periodic indexation. The energy payment will cover only variable costs, including the cost of fuel and variable operation and maintenance costs.

- CDE or its SUCCESSORS will establish a revolving letter of credit to ensure the timely payment of amounts due to the Sponsor.

- Liquidated damages will be assessed against the Sponsor delays in completion, initial shortfalls in capacity, subsequent shortfalls in capacity, and failure to deliver energy in accordance with CDE or its SUCCESSORS's despatch requests.

- The Sponsor be required to provide a security deposit during the construction period and a security deposit during the operations period.

- Either party may terminate the PPA under certain specified conditions. CDE or its SUCCESSORS may terminate the PPA for, among other things, failure of the Sponsor to achieve certain milestone dates, abandonment of construction or operation, assignment of the PPA without consent, or the appointment of an operations and maintenance contractor without consent.

- Upon termination of the PPA or upon one year's notice, CDE or its SUCCESSORS will have an option to purchase the Complex.

APPENDIX B

APPLICANT'S QUALIFICATION STATEMENT

SUBMITTED BY : _____

ADDRESS : _____

TELEPHONE : _____

SV

AFFIDAVIT

The undersigned, _____, of legal age, and residing
(Name of Applicant)

at _____ after having been duly sworn
(Address)

deposes and states:

1. That he is the _____ of the
(Official Capacity)

_____, corporation/association/individual,
(Name of Firm)

duly organized under the law of _____.
(Name of County)

2. That personally, and as _____ for and
(Official Capacity)

in behalf of the corporation/association/individual, he hereby certifies;

a. That all statements made in this Project Applicant's Qualification Statement and in the required attachments are true and correct;

b. That this Statement is made for the express purpose of prequalifying him as a responsible Sponsor by the Government of Dominican Republic for a 250 MW Fossil Fired Power Station in The Dominican Republic;

c. The Applicant will make available to the Government of The Dominican Republic or its authorized agency any information they may find necessary to verify any item in this statement or regarding his competence and general reputation;

d. That the undersigned is duly authorized by the corporation/association/individual to make these representations and to sign this Statement.

_____
Secretary / General Partner / Individual Contractor / Applicant

WITNESSES:

1. _____ 2. _____

SUBSCRIBED AND SWORN TO before me this _____ day of _____ 19__

at _____

_____
Notary Public

APPLICANTS ORGANIZATION

Date of Submission:

1. Firm's Name and Country Incorporated

2. Year Organized:

3. Type of Organization:

4. Local Address:

5. Home Address:

Cable Address:
Telefax No.:
Telex No.:

6. Objectives or purposes of each associated firm (Attached organizational documents):

7. Name and Address of load and associated firms:

8. Corporate Record:

Names, Nationality and Construction Experience and Associated Firms

CORPORATION/ ASSOCIATION OF NAME*	NATIONALITY	ADDRESS OF OFFICE	YEARS OF EXPERIENCE**	MAGNITUDE & TYPE WORK**

* If applicable, this item should include experience record of each member in the organization to implement the project.

** If applicable, this may refer to the main activity or business of each member of the organization, i.e. construction, design, project management, utility operations, and finance.

Note: Submit one form for each associated firm.

INFORMATION TO BE FURNISHED BY CORPORATIONS**

List below all stockholders and/or other financially interested in your organization owning 5% or more of stock or other interest.

NAME	TYPES OF INTEREST OR NO. OF SHARES OWNED	VALUE	EXTENT OF CONTROL (%)*
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

*Equity holdings

OFFICIALS OF THE CORPORATION
MEMBERS OF THE BOARD OF DIRECTORS

NAME	DESIGNATION
1.	
2.	
3.	
4.	
5.	

Who is actively managing the affairs of the Corporation?

NAME: _____

ADDRESS: _____

DESIGNATION: _____

Herewith attached is a certified copy of Resolution authorizing Corporation's representative to file Statement and sign subsequent agreements.

**For each corporation

INFORMATION TO BE FURNISHED BY UNINCORPORATED ASSOCIATIONS*

Date of Registration: _____

Securities and Exchange Commission Registration No.: _____

State whether the Unincorporated Association is:

General Partnership _____

Limited Partnership _____

Other _____

NAME AND ADDRESSES OF MEMBERS OF UNINCORPORATED ASSOCIATIONS	AGE	OCCUPATION	VALUE OF CONTRIBUTION
1. _____	___	_____	_____
2. _____	___	_____	_____
3. _____	___	_____	_____
4. _____	___	_____	_____
5. _____	___	_____	_____
		TOTAL	_____

Who is actively managing the affairs of the Unincorporated Association?

NAME: _____

ADDRESS: _____

DESIGNATION: _____

Herewith attached is a certified copy of Appointment of business manager and his Authority.

*For each associated firm or partner(s).

FINANCIAL CAPABILITY

Name of Applicant or partner of joint venture

Applicants, including each partner of a joint venture, should provide financial information to demonstrate that they meet the requirements stated i the Instructions to Applicants. Each applicant or partner of a joint venture must fill in this form. If necessary, use separate sheets to provide complete banker information. A copy of the audited balance sheets should be attached.

Banker	Name of banker	
	Address of banker	
	Telephone	Contact name and title
	Fax	Telex

Summarize actual assets and liabilities in U.S. dollar equivalent (at the rates of exchange current at the end of each year) for the previous three years. Based upon known commitments, summarize projected assets and liabilities in U.S. dollar equivalent for the next two years.

Financial information in USS equivalent	Actual: previous three years			Projected: next two years	
	1.	2.	3.	4.	5.
1. Total assets					
2. Current assets					
3. Total liabilities					
4. Current liabilities					

5. Profits before taxes					
6. Profits after taxes					

Specify proposed sources of financing to meet the cash flow demands of the Project, net of current commitments (Instructions to Applicants, para. 3.5).

Source of financing	Amount (US$ equivalent)
1.	
2.	
3.	
4.	

Attach audited financial statements for the last five years (for the individual applicant or each partner of a joint venture).

Firms owned by individuals, and partnerships, may submit their balance sheets certified by a registered accountant, and supported by copies of tax returns, if audits are not required by the laws of their countries of origin.

LITIGATION HISTORY

Name of Applicant or Partner of a joint venture

Applicants, including each of the partners of a joint venture, should provide information on any history of litigation or arbitration resulting from contracts executed in the last five years or currently under execution (Instructions to Applicants, para. 3.7). A separate sheet should be used for each partner of a joint venture.

Year	Award FOR or AGAINST Applicant	Name of client, cause of litigation, and matter in dispute	Disputed amount (current value, US$ equivalent)

DETAILED INFORMATION TO BE FURNISHED BY APPLICANT

1. ORGANIZATION DOCUMENTATION, CLEARANCES AND EXPERIENCES

We/I hereby submit for your examination and consideration certified true/photostatic copies of the following:

ANNEX A - Articles of Incorporation and by-laws, or other organization documents, in English.

ANNEX B - Receipt for payment of privilege or franchise on tax or equivalent for the current year.

ANNEX C - Curriculum vitae of key technical personnel who will be responsible for the Project.

ANNEX D - Certificate of registration with the United States Securities and Exchange Commission or equivalent (if applicable).

2. TECHNICAL CAPABILITY AND MANAGEMENT ABILITY (INFORMATION TO BE SUBMITTED WHEREVER APPLICABLE)

ANNEX E - For technical capability, literature/brochures describing project Applicant's facilities and accomplishments and information on technical personnel resources.

ANNEX F - For experience, the Applicant shall list, (i) Projects completed within the last five (5) years and (ii) current on-going projects broken down into the following categories:

(1) Power Generation Projects
(2) Development of Fossil Fired Power Projects
(3) Privately Owned Projects in Developing Countries

For each project listed in each of the above categories in (i) & (ii), the Applicant shall furnish the following detailed information:

(a) Nature and location of the project
(b) Financing and equity developed for the project
(c) Technical data/information on major equipment installed
(d) Description of role performed by the Applicant on the project
(e) Cost data

(f) Construction time for the project
(g) Names and addresses of owners
(h) Names of Supervisory entities or consultant, if any

ANNEX G - For each power station, Certificates of Final Acceptance and/or Certificates of Good Operating Performance duly issued by owners or clients for the projects described in ANNEX F (1) above.

ANNEX H - Proposed organization and implementation plan for this Project.

3. ADDITIONAL INFORMATION

Describe the equipment/projects, if any, you have already furnished to GODR or any of its agencies. State where the equipment/project was installed and the date of the Contract.

*For each firm or partner(s)

APPENDIX C

NOTICE OF RECEIPT OF PREQUALIFICATION DOCUMENT

The undersigned received the above-captioned Prequalification Documentation on _____. We have reviewed the package and we do _____, do not _____ intend to submit a Prequalification Statement.

Further, we understand that our Prequalification Statement will be due on _____.

At the present time, we anticipate our Prequalification Statement to be based upon the following:

Project Applicant: _____

Lead Firm
by _____
Title _____
Date _____

Firms or partner(s)
by _____
Title _____

By: _____
Name in Print and Signature

_____
Designation

_____
Name of Firm

F:\1046\006\PDFSOAS.BOO

ATTACHMENT 4

DRAFT

7. LOAD PROFILE

7.1 Existing Generation and Transmission System at the Dominican Republic

The total installed capacity in the Dominican Republic was approximately 1,507 MW at the end of 1993. Most of this capacity (about 1,410 MW) is under CDE's control, whereas about 100 MW is privately owned. Only 66% of this installed capacity was available in 1993. See Table 1 for details concerning the existing capacity in the Dominican Republic.

All of this existing capacity will be under the control of a new Supervision, Control and Data Acquisition (SCADA) system, to be operational by August 1995. The central system will be located in Herrera, about 10 km from the center of Santo Domingo. The data communication between the National Energy Control Center (ECC) and the remote stations will be performed via radio links and to some extent Power Line Carrier (PLC) system.

Figure 1 shows the Dominican Republic electricity generation and transmission system as planned by the end of 1994. The major transmission lines are the following:

- Santo Domingo Area:

69 kV	Single Line	Ceasar Nicolas Penson - Timbeque
138 kV	Double Line	Haina - Matadero
138 kV	Single Line	Matadero - Embajador - Los Prados - Palamara
138 kV	Single Line	Hainamosa - Los Minas
69-138 kV	Conversion of	Matadero - UASD

- South Area

138 kV	Single Line	Aguacate - Jiguey - Pizarrete
138 kV	Single Line	Cruce San Juan - Barahona

- North Area

138 kV	Single Line	Canabacoa - Puerto Plata (second line)
138 kV	Single Line	Luperon - Esperanza

TABLE 1

EXISTING CAPACITY IN 1993
FOR ALL REGIONS OF THE DOMENICAN REPUBLIC

Existing Power Plants	Unit #	Installed Capacity (MW)	Available Capacity in 1993 (MW)	Remaining Life (Years)	Year of Retirement
ITABO	1	125.00	125	20	2014
	2	125.00	115	24	2018
Subtotal ITABO		250.00	240.00	–	
HAINA	1	54.00	47.0	4	1998
	2	54.00	30.0	4	1998
	3	84.90	35.0	14	2008
	4	84.90	44.0	14	2008
	5	84.90	80.0	19	2013
Subtotal HAINA		362.70	236.00	–	
SANTO DOMINGO	5	12.65	11	0	
	3	12.65	0	0	1996
Subtotal SD		25.30	11.00	–	
PUERTO PLATA	1	27.63	24	0	1996
	2	36.75	0	0	
Subtotal P. PLATA		64.38	24.00	–	
SAN PEDRO I	1	33.00	33	26	2020
TOTAL STEAM		735.38	544.00	–	
LOS MINA	1	35.00	23	7	2001
	2	35.00	24	7	2001
	3	65.00	0	18	2012
	4	65.00	40	18	2012
Subtotal LOS MINA		200.00	87.00	–	
TIMBEQUE	1	21.10	17	1	1996
	2	21.10	17	1	1996
Subtotal TIMBEQUE		42.20	34.00	–	
SAN PEDRO MACORIS	1	28.30	25	20	2000
BARAHONA	1	28.30	0	20	2020/2000
TOTAL GAS		298.80	146.00	–	
TAVERA	1	50.00	24	>20	
	2	50.00	24	>20	
Subtotal TAVERA		100.00	48.00	–	0.00
VALADESIA	1	27.00	12.5	>20	
	2	27.00	12.5	>20	
Subtotal VALADESIA		54.00	25.00	–	0.00
SABANA YEGUA	1	12.50	6	>20	
RINCON	1	10.10	6	>20	
LAS DAMAS	1	7.50	2	>20	
SABANETA	1	6.00	4	>20	
JIMENOA	1	8.00	6	>20	
HATILLO	1	8.00	6	>20	
LOPEZ-ANGOSTURA	1	18.00	3	>20	
JIGUEY	1	49.00	36	>20	
	2	49.00	36	>20	
Subtotal JIGUEY		98.00	72.00	–	0.00
AGUACATE	1	26.00	18	>20	
	2	26.00	18	>20	
Subtotal AGUACATE		52.00	36.00	–	0.00
CONSTANZA		0.25		>20	
SAN JOSE DE OCOA		0.19		>20	
LOS RANCHITOS		0.85		>20	
TOTAL HYDROELECTRIC		375.39	219.00	–	0.00
TOTAL CDE		1,409.57	909.00	–	0.00
SANTIAGO		12.00	10	15	2020
FALCOMBRIDGE (*)		198.00	30	9	2020
WARTSILA S.D.		40.00	31.5	15	2020
WARTSILA P. PLATA		16.20	16.2	17	2020
TOTAL PRIVATE		266.20	87.70	–	
TOTAL AVAILABLE		1,675.77	996.70	–	

Note:

(*) Falcombridge Plant has 198 MW installed capacity. However, only 30 MW on average are available for CDE's use throughout the whole year.

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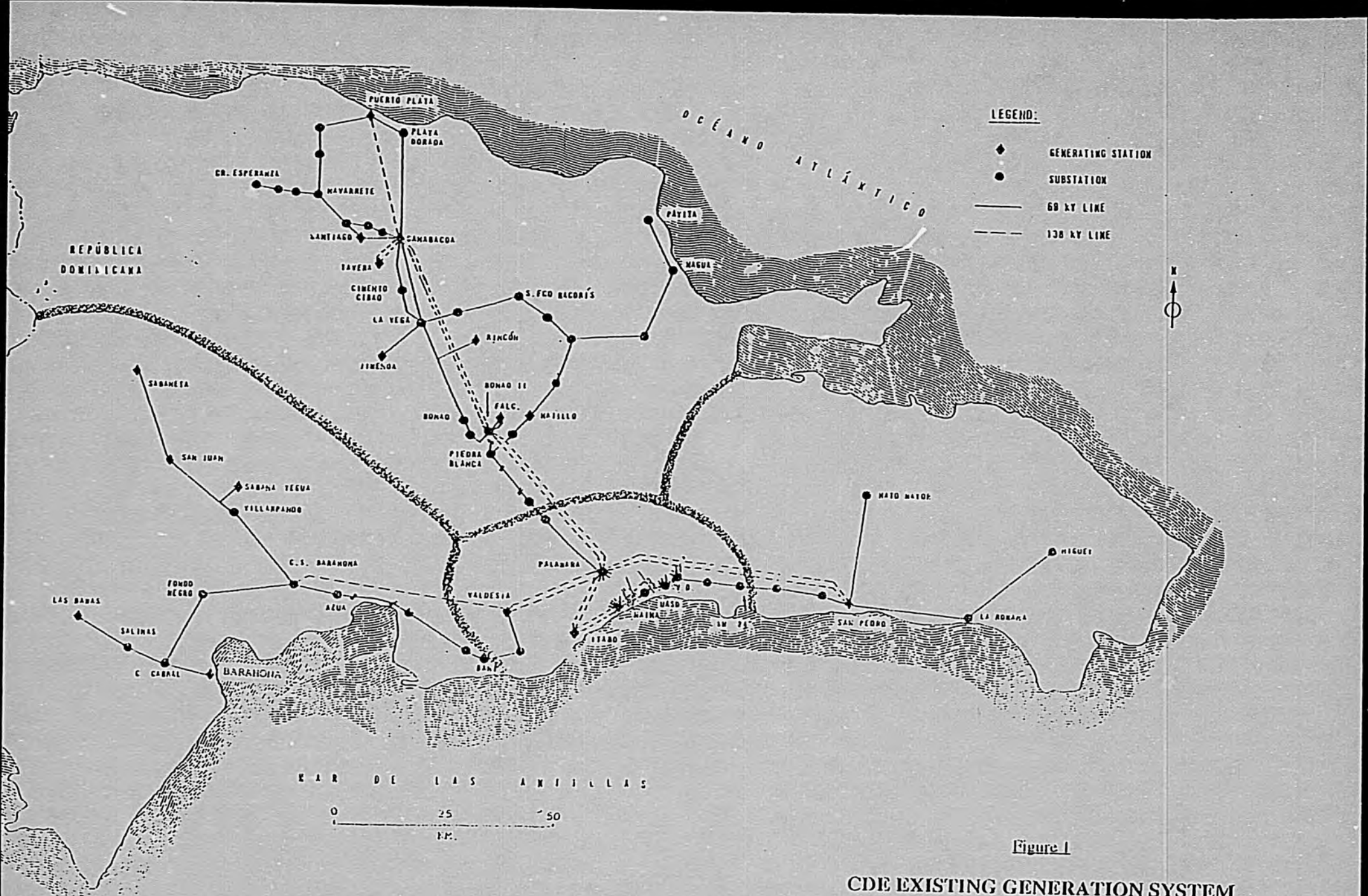


Figure 1

CDE EXISTING GENERATION SYSTEM

7.2 Description and Analysis of Load Characteristics

The Dominican Republic has been experiencing a deficit in electricity supply during the last decade. This deficit, combined with the fact that several consumers (residential, commercial as well as industrial) use their own generating systems, made it difficult to obtain accurate figures of the real demand.

Based on a recent study accomplished by Decon (Deutsche Energie-Consult Ingenieurgesellescharf mbH), this deficit represents about 20% of the total generated electricity for the Dominican Republic in 1993. See Figure 2 for the the Total Generated Energy and Demand for 1982-1993.

Figures 3 and 4 represent the supplied electricity profiles for the Dominican Republic in 1993 during the days characterized by the highest peak load for each month. Demand is believed to be higher during hours 7:00AM through 11:00 PM.

The estimated electricity demand for a typical weekday can be shown in Figure 5. The National District Region (which includes the Santo Domingo Area) uses about 57% of the whole Dominican Republic need in electricity (See Table 3).

As of the end of 1993, the energy demand could generally be broken down into the following consumer groups:

Residential	39.67%
Commercial	11.53%
Industrial	32.09%
Government	16.71%

7.3 Load Projections

A recent Least Cost Expansion Plan for the Dominican Republic Electricity System accomplished by Decon shows electricity demand and needed capacity projection as per Figure 6. The additions in capacity are for general information purposes only.

Figure 2

TOTAL ESTIMATED ENERGY GENERATED AND DEMAND

FOR 1982-1993

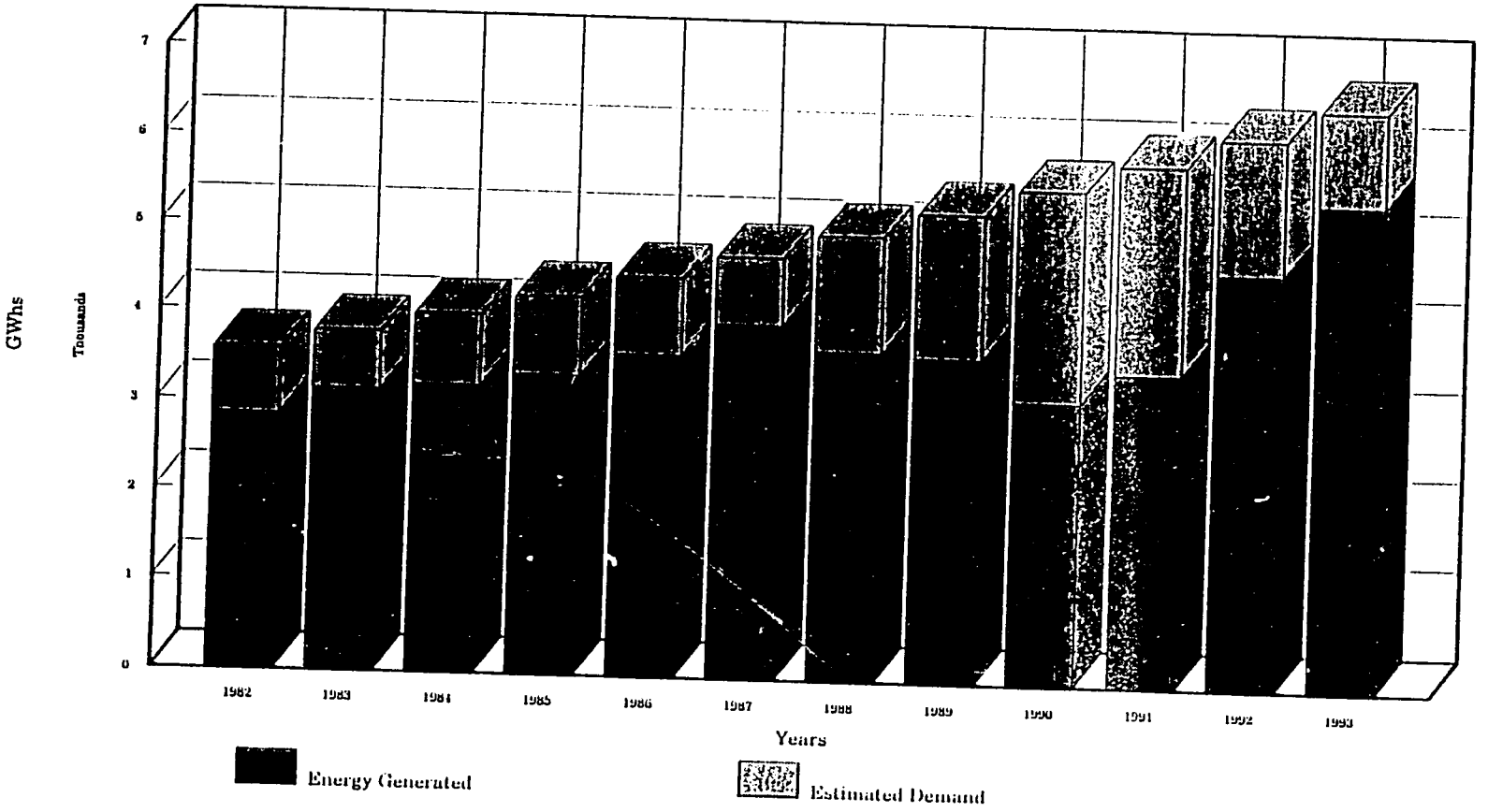
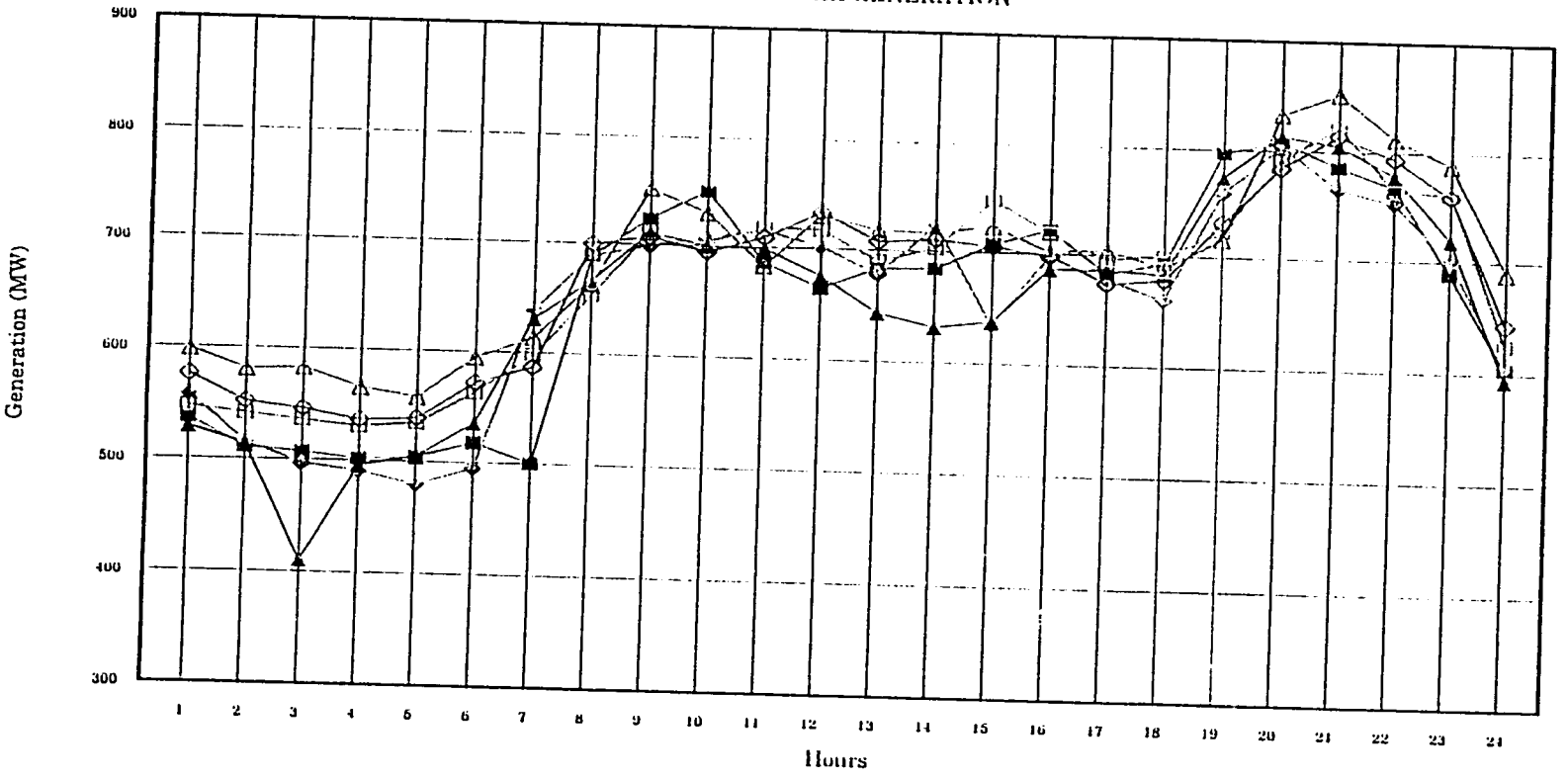


Figure 3

SEASONAL VARIATION

DAILY PEAK GENERATION



Jan 19, 93 — Feb 12, 93 — Mar 24, 93

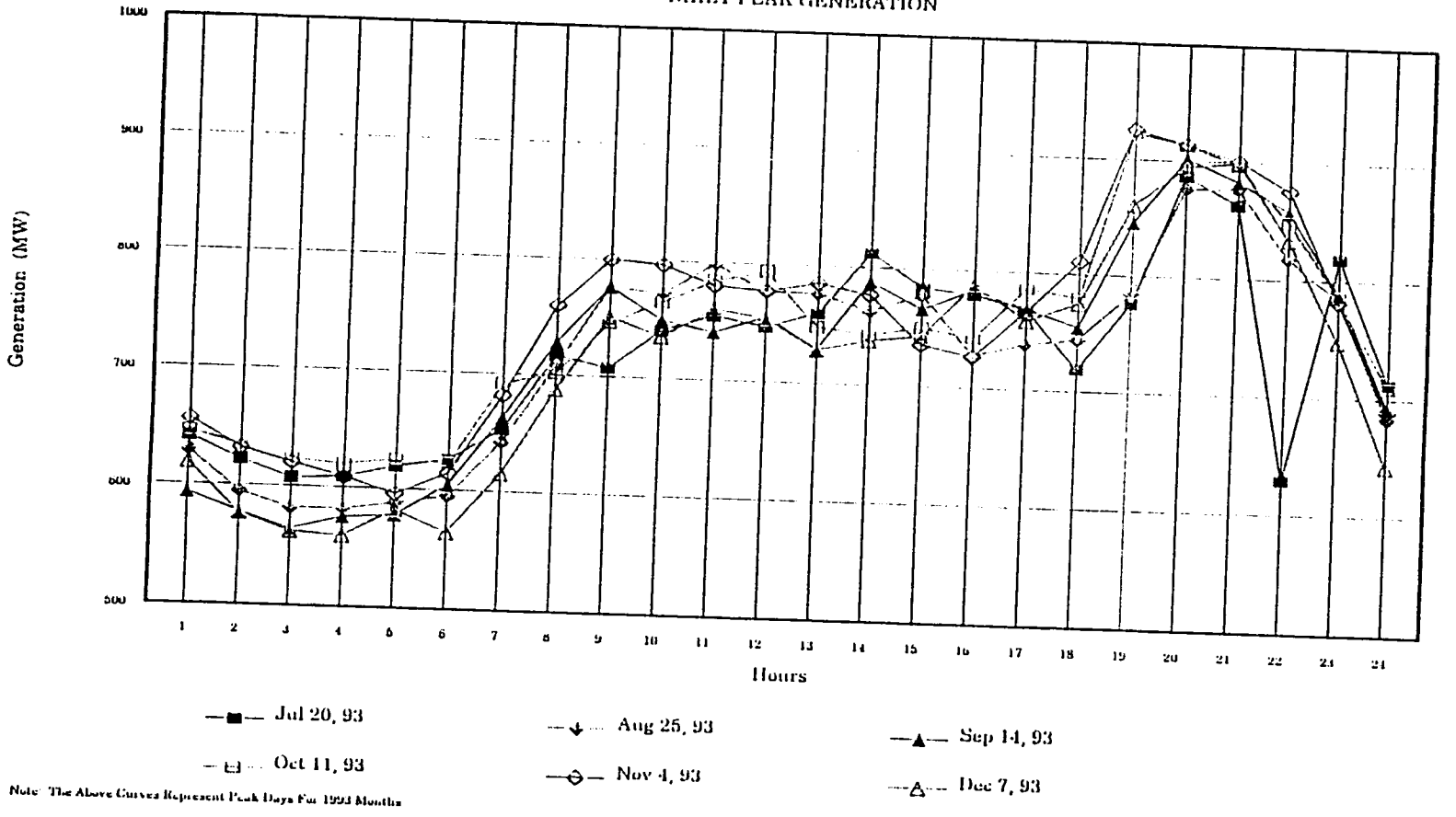
Apr 1, 93 — May 24, 93 — Jun 29, 93

Note: The Above Curves Represent Peak Days For 1993 Months

Figure 4

SEASONAL VARIATION (Cont'd)

DAILY PEAK GENERATION



Note: The Above Curves Represent Peak Days For 1993 Months

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TABLE 3

ESTIMATED ELECTRICITY DEMAND FOR A TYPICAL WEEKDAY PER REGION FOR YEAR 1993

Hour	National District	North	East	South	Total
1	371.00	202.47	56.00	66.98	696.45
2	350.00	196.82	55.00	64.08	665.90
3	340.00	197.40	53.00	62.47	652.87
4	333.00	200.42	53.00	62.47	648.89
5	330.00	196.56	54.00	62.22	642.78
6	339.00	203.36	58.00	62.73	663.09
7	376.00	219.74	68.00	66.84	730.58
8	460.00	239.92	72.00	74.29	846.21
9	572.00	239.81	73.00	74.30	959.11
10	611.00	245.36	75.00	72.88	1,004.24
11	621.00	257.17	75.00	68.37	1,021.54
12	621.00	262.39	72.00	61.28	1,016.67
13	592.00	255.22	72.00	58.67	977.89
14	583.00	247.14	73.00	62.50	965.64
15	604.00	244.94	73.00	67.67	989.61
16	607.00	243.46	72.00	68.49	990.95
17	593.00	238.00	70.00	68.73	969.73
18	559.00	242.76	69.00	74.15	944.91
19	548.00	253.40	73.00	78.01	952.41
20	546.00	262.93	76.00	92.67	977.60
21	524.00	234.98	74.00	88.67	971.65
22	500.00	278.46	69.00	85.51	932.97
23	465.00	275.49	63.00	78.61	882.10
24	396.00	257.17	83.00	68.37	804.54

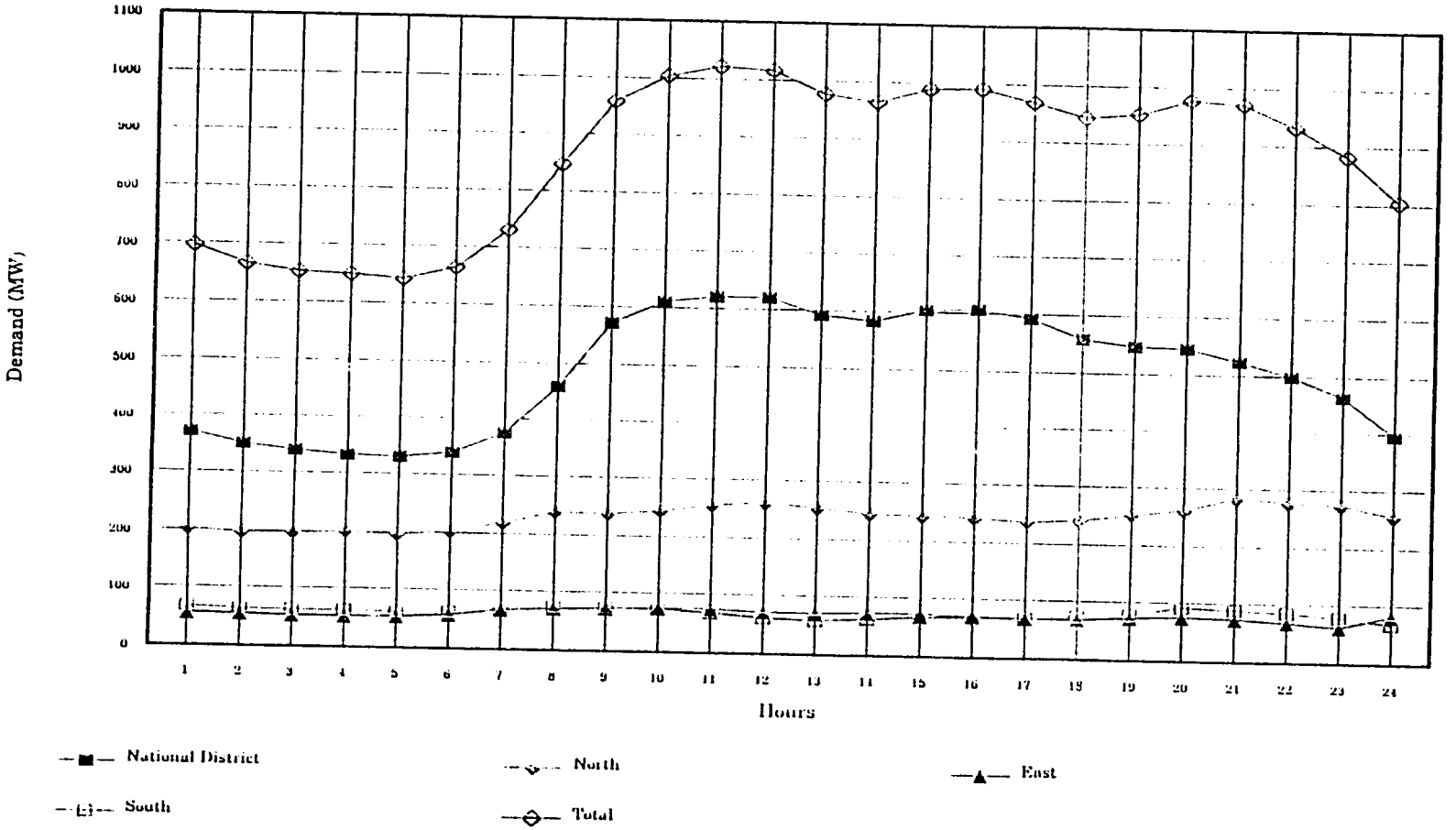
Note:

The above estimated demand has been based on the Decon Demand Study for the Dominican Republic, February 1994.

Figure 5

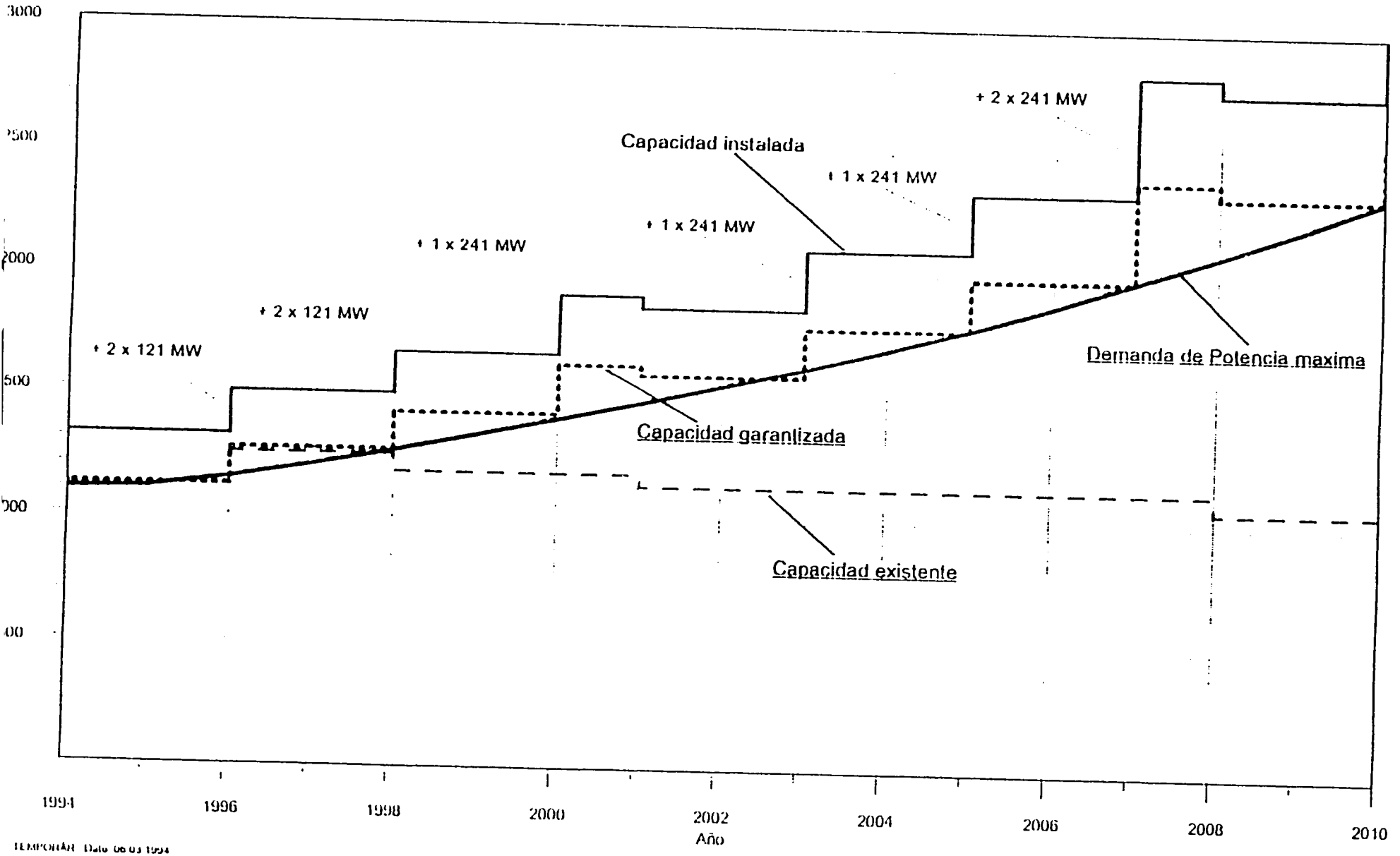
ESTIMATED ELECTRICITY DEMAND PER REGION

FOR A TYPICAL WEEKDAY FOR YEAR 1993



CDE GENERATION EXPANSION PLAN

PROJECTED DEMAND



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