

PN-ABY-433

1991

**CAMARA EMPRESARIAL
DE GUATEMALA**

**ESTUDIO DE LA
EMPRESA ELECTRICA
DE GUATEMALA**

11 de enero de 1991

INFORME FINAL

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EXECUTIVE SUMMARY

This report summarizes Price Waterhouse's review of the options available to INDE in relationship to its 92 percent shareholding in EEGSA, in particular whether INDE should sell its shares in EEGSA.

Overall, Price Waterhouse recommends that the Government of Guatemala and INDE take a slow and planned approach to any final decisions regarding the future of EEGSA. We do not recommend a quick privatization of EEGSA by sale of shares for the following reasons:

- o Basic subsidy problem is not addressed -- Subsidy problems in the power sector, although large, do not seem critical enough to rush a sale of EEGSA. This is particularly true because EEGSA is a relatively efficient operator compared to INDE, and privatizing EEGSA does not address the basic subsidy problem that would still be present in INDE's electricity rates.
- o Regulatory mechanisms are not established -- The lack of appropriate regulatory mechanisms could lead to monopoly pricing and sharp tariff increases if EEGSA were privatized at the present time.
- o Expected revenue from sale of EEGSA is low -- The current economic situation, with high inflation, high interest rates, and exchange rate problems makes it a poor time to privatize due to the very low values that EEGSA is likely to command under such conditions.
- o EEGSA and INDE are currently too interdependent -- EEGSA's close relationship and interdependency with INDE would have to be restructured to eliminate most subsidies and to establish power purchase contracts before any privatization. Further analysis would be required to examine the future of the entire Guatemalan electricity system, including INDE and the other electric distribution companies.

However, although we do not recommend an immediate privatization of EEGSA, we recommend a "corporatization" strategy for EEGSA to increase its operating efficiencies and allow it to become an essentially independent subsidiary of INDE. Privatization options could then be considered at a later date. Further recommendations in this areas are highlighted in the report.

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I. INTRODUCTION

During September-November, 1990, Price Waterhouse conducted a study of the privatization options available to the Guatemalan Government relating to the possible sale of its 92 percent shareholding in Empresa Electrica de Guatemala (EEGSA), the major electric distribution company in Guatemala. The Guatemalan Government's shares are held by the state-owned Instituto Nacional de Electrificacion (INDE), the electric generation company in Guatemala.

The study was conducted for Camara Empresarial de Guatemala (CAEM), through the U.S. Agency for International Development's (AID) Private Enterprise Development Project, and was awarded based upon competitive bid. The study was initiated in response to a letter sent to CAEM from the President of Guatemala asking that such a study be undertaken. The letter requested that the project be coordinated through the Ministry of Energy and Mines. As a result, a working group was established, headed by the Ministry and including members from EEGSA and INDE, to provide information and advice during the project.

Although the time-frame and scope of work for this project were limited, we believe that this report provides an important initial review of the options available to the Government of Guatemala and to INDE relating to the 92 percent shareholding in EEGSA.

A. Power Sector Background and Purpose of Study

The state-owned Instituto Nacional de Electrificación (INDE) has primary responsibility for the generation and transmission of electricity in Guatemala. In addition, INDE provides the majority of electrical service to rural areas. Empresa Electrica de Guatemala, S.A. (EEGSA) provides limited generation and principal distribution services to the central, more populated region of the country -- the Departments of Guatemala, Sacatepequez, and Escuintla. These three areas served by EEGSA consume some 80% of the total electrical output of the country. Current installed capacity in the country is about 800 MW (700 MW INDE, 100 MW EEGSA), with actual or effective capacity of approximately 480-500 MW. Demand is currently at about 440 MW annually, and has been growing at approximately 7% per year. Approximately 70% of energy (on a demand basis) is supplied by hydro, mostly from the Chixoy hydroelectric project.

While INDE currently has enough generation capacity to meet demand within the country, it is expected that, with the strong growth in demand, new capacity will be required in 1992 or 1993. With only about 36% of Guatemalans' currently served by electricity (based on a family of five), rural electrification remains INDE's most important long-term goal.

In addition to EEGSA, there are 12 other Empresas Electricas (Zacapa, Gualan, San Pedro Pinula, Jalapa, Pto Barrios, El Progreso, Quetzaltenango, Retalhuleu, San Pedro Sacatepequez, Huehuetenango, San Marcos, and Tejutla) that are much smaller than EEGSA, and provide distribution services in rural areas of Guatemala. The entire complex is tied together by the National Interconnected System, and regionally linked through the Guatemala-El Salvador Interconnection.

Although INDE owns 92 percent of EEGSA's shares, EEGSA is still run much

like a private company. This reflects its private ownership from 1894-1972. EEGSA was started in 1894 as a private company, to produce electricity under a government concession. In 1922 the Guatemalan Government re-issued the concession for a fifty year term. During the years of the concession, EEGSA was owned and operated by The American & Foreign Power Company, EBASCO, and finally by Boise Cascade Corporation. In 1972 the Guatemalan Government, through INDE, purchased Boise Cascade's 92% shareholding in EEGSA.

Thus, the purpose of this study is to review the current relationship between INDE and EEGSA, and in particular INDE's options concerning its 92% shareholding in EEGSA.

B. Scope of Work

The activities conducted by Price Waterhouse during this study included:

- o Kick-off Meetings and Background Discussions - During the initial weeks of the project, the Price Waterhouse project team familiarized itself with the project requirements. This included discussions with the following groups: CAEM, EEGSA, INDE, and the Ministry of Energy and Mines.
- o Regulatory and Privatization Review - In this task we reviewed the operating and regulatory environment between EEGSA and INDE. In addition to discussions with INDE, EEGSA, the Ministry, and CAEM, we held discussions with: AID officials, World Bank staff, EEGSA employees, and Price Waterhouse staff with expertise in utility regulation. Research concerning privatization strategies was also conducted.
- o Assessment of Market Acceptance and Pricing Range of EEGSA Shares - During this task we assessed the potential interest of investors in EEGSA. This included review of information about Guatemala's financial sector, analysis of investor expectations and pricing considerations, and discussions with the local stock market.
- o Valuation of EEGSA - In this task we valued the revenue potential of a

stock offer of EEGSA stock. Discussions were held with EEGSA and INDE to review financial documents. We did not audit the financial statements provided to us.

- o Consideration of Options and Development of Recommendations - In this final task we developed options and recommendations and presented them to the Ministry's working group.

C. Outline of Remainder of Report

The remainder of this report is organized into the following chapters:

- II. Analysis of Strategic, Organizational, and Regulatory Issues
- III. Analysis of Investors' Concerns and Financial Valuation
- IV. Options for Privatization and Recommendations

II. ANALYSIS OF STRATEGIC, ORGANIZATIONAL, AND REGULATORY ISSUES

This section discusses some of the possible objectives of privatizing or reorganizing EEGSA, the current INDE-EEGSA relationship, the condition of EEGSA, and regulatory issues that would have to be considered if changes were initiated.

A. Possible Objectives/Benefits of Privatization

In recent years, worldwide interest of Governments in the area of privatization has increased significantly. Many governments, such as Chile, have made extensive progress in reducing state-ownership in their economies, while governments such as Mexico and Argentina are just beginning the privatization process. Other governments have initiated privatization efforts, but have seen little progress.

While it is unclear, due to the presidential election taking place, what the views of the new administration in Guatemala will be in the area of economic adjustment and privatization, it may be helpful to briefly review the major benefits and objectives of privatization efforts, and their relationship to EEGSA.

1. Budgetary relief from subsidies

One of the primary objectives of privatization efforts is to achieve fiscal budget relief from the subsidies that a state-owned-enterprise requires. By eliminating government involvement in an enterprise through privatization, the financial strain of subsidies and corresponding budgetary and foreign exchange deficits can be reduced.

Although EEGSA is subsidized indirectly through INDE, privatizing EEGSA would not at all imply elimination of subsidies in electricity rates. Because INDE sells power to EEGSA at a subsidized rate, these subsidies are essentially passed through by EEGSA and would continue unless significant increases in the rates charged by INDE were instituted. However, eliminating subsidies in utility rates poses a substantial political problem.

2. Increased efficiency of an enterprise via competition

A second major objective of privatization efforts is to increase the efficiency of a formerly state-owned enterprise by subjecting it to free-market forces. Competition and profit incentives can result in significant increases in efficiency, as measured by profits, service levels, and other criteria. Privatization can also result in a general broadening of the private sector, as it stimulates the development of related businesses such as suppliers and distributors.

One problem of this objective as it applies to EEGSA is that electricity distribution is a natural monopoly. Thus even if EEGSA were privatized, it would not face significant competitive pressures that would lead to increased efficiency.

3. Immediate debt reduction

A third benefit of privatization in some cases can be the elimination of foreign commercial bank debt through debt-equity swaps. Through this mechanism, countries with significant amounts of commercial bank debt accept retirement of part of that debt in return for equity in a state-owned enterprise.

An example of such a deal is the recent sale of ENTEL, the Argentine telephone company. Bidders for ENTEL are able to purchase Argentina's commercial

bank debt at 10-20 U.S. cents on the dollar, and offer retirement of this debt in partial payment of the bid price. Thus, \$1 billion of debt could be retired while the bidder spends only \$100-200 million.

In the case of Guatemala, deals of this sort are unlikely because Guatemala has very little foreign commercial bank debt. The majority of Guatemala's foreign debt is held by international development banks, who do not engage in debt-equity swaps. Only the Central American Bank for Economic Integration (CABEI) may be open to debt/equity swaps in Guatemala.

4. Development of wider business ownership

An additional benefit of privatization, particularly of utilities, is that privatizations often act as a catalyst for the development of local money and stock markets. Many developing stock markets, for example that in the United States in the early 1900s and more recently in nations such as Thailand, have relied heavily on utility stocks during their infant years. This is because utility stocks, such as those of electric utilities, are generally viewed by investors as having low-risk and stable earnings.

Thus privatization activities, particularly if they are done at least in part through local stock offerings (to employees, consumers, or investors), offer the benefits of stimulating the local stock market. Although the stock market in Guatemala has been established for less than 5 years and has not had any significant stock offerings, utility stocks such as EEGSA could be among the first accepted by local investors.

5. Demonstration of structural improvements to development banks

Another benefit of privatization and restructuring activities in developing

countries is that the undertaking of such reforms may be viewed as positive steps by international development banks (IDB, IBRD, etc.). As such, borrowing countries that pledge to undertake reforms, such as privatizations and the elimination of subsidies, may be able to secure fresh loans from international lenders. This may be a significant benefit of privatization activities in Guatemala.

6. Summary

Thus, in the case of an EEGSA privatization, the most likely benefits would be the stimulation of the local financial sector and the demonstration to international lending agencies that structural improvements were being pursued by the Guatemalan Government. It is less likely that such a privatization would achieve significant budgetary relief from subsidies, because EEGSA merely passes through subsidies from INDE to the end-user. And only moderate gains in efficiency could be expected given a lack of competition for EEGSA and its generally good current efficiency levels relative to INDE (where efficiency levels appear to be lower).

B. The Current INDE-EEGSA Relationship

INDE, as the major generator of electricity in Guatemala, and EEGSA, as the major distributor of electricity have many important inter-dependencies that would have to be considered in the course of any privatization or reorganization program. These include the following:

- o Stock Ownership - INDE owns 91.7 % of the shares of EEGSA's stock, purchased from Boise-Cascade in the early 1970s. Thus, although other investors and banks hold EEGSA shares, INDE has clear majority control of the ownership of EEGSA.
- o Dividends - A second important factor in the INDE-EEGSA relationship

is that EEGSA does not pay dividends to INDE. Thus, INDE does not recognize a return on its investment in EEGSA, and EEGSA is allowed to reinvest its cash from operations into growth and improvements in infrastructure. In a private sector environment, most investors would require the payment of dividends. This would pose further cash flow problems for EEGSA.

- o Accounts Payable - An important financial linkage between INDE and EEGSA are the payment terms that INDE allows EEGSA on its power purchases. Current terms allow EEGSA to extend payables to INDE for 80 days interest free, paying an interest rate of approximately 18% per year after that time.

These payment terms reflect the interrelationship between INDE and EEGSA. For example, INDE has allowed EEGSA to extend its payables recently so that EEGSA could finance a new turbine purchased from Fiat-Italy (for approximately \$10 million, paid up front). The payables also reflect problems with EEGSA collections of receivables. For example, EMPAGUA, the Guatemala City water company, has not paid EEGSA for power in several years and owes it approximately Q30 million. If EMPAGUA paid EEGSA, EEGSA could in turn pay INDE and reduce its accounts payable.

- o Energy Relationship - INDE and EEGSA are also very interdependent in the energy area. In 1989, EEGSA purchased 94% (1,509,647 MWh) of its energy from INDE, while generating only 6%. (Although EEGSA expects to increase its own generation over the next few years.) In addition to EEGSA relying on INDE as an energy supplier, INDE is also reliant on EEGSA as a purchaser for its generation. In 1989, EEGSA purchased approximately 74% of INDE's power sales.
- o Subsidies - INDE's wholesale rate to EEGSA is subsidized, and is currently about 11.5 centavos/kwh (about \$0.023), while EEGSA sells to consumers at an average rate of about 21 centavos (lower to residential users, higher to commercial and industrial users). EEGSA takes a mark-up to cover its own costs, but essentially passes through the subsidies. Estimates provided to Price Waterhouse suggest that the actual cost of power is in the range of 35-45 centavos, although this cost fluctuates as the exchange rate fluctuates -- because of INDE's dollar denominated debt.

An interesting point concerning the fact that EEGSA pays no dividends and receives debt financing at essentially a zero interest rate (because

accounts payable make-up the majority of its debt), is that EEGSA's effective cost of capital (the cost it pays to attract stock and debt funding) is near zero.

- o Oversight - Another area of inter-reliance between INDE and EEGSA is that both INDE and EEGSA are regulated by the same Board of Directors. This is not unusual given INDE's 92 percent majority ownership in EEGSA.
- o Foreign Debt - The recent fall in the value of the Quetzal from approximately 2-3 Quetzales per dollar during most of the 1980s to the current rate of Q5:\$1 has caused serious financial problems for INDE, as the holder of dollar-denominated loans. With the fall in the Quetzal, INDE has not been able to increase tariffs sufficiently to be able to meet in local currency terms these larger debt payments. EEGSA, as a subsidiary of INDE, does not carry dollar denominated debt on its balance sheet, and has been shielded from this problem.

Summary

As the above points illustrate, INDE and EEGSA have many interdependencies that would have to be considered under any privatization scheme. The close relationship between INDE and EEGSA in both energy and financial terms suggests that any privatization effort should be undertaken only after EEGSA has become more financially independent from INDE. Currently, the two entities appear too interdependent to make an immediate privatization successful.

C. The Condition of EEGSA and Employee Issues

While the previous section discussed the close relationship between INDE and EEGSA, this section reviews the present condition of EEGSA, including its legal, financial, and operational condition, and how these relate to the possibilities of privatization.

1. Legal form

Although EEGSA is currently owned by INDE, which in turn is owned by the Government of Guatemala, EEGSA is still legally a private enterprise -- due to its private sector heritage, most recently with Boise Cascade. Because EEGSA is already legally established as a private company, and has equity shares, any privatization will not require extensive changes in legal/organizational form.

2. Growth potential

In addition to already legally being a private company, another important characteristic of EEGSA is its growth potential. With demand growing at approximately 7% per year, EEGSA's energy sales and revenue should continue to grow. Additional growth opportunities for EEGSA may include increased internal generation, as with the recent purchase of a turbine from Fiat.

3. Operational efficiency

A third important characteristic of EEGSA, in addition to its legal form and growth potential, is its operating efficiency. All persons that we spoke to in Guatemala agreed that EEGSA had generally efficient operations, relatively good infrastructure, and provided good service. Compared to utilities in other developing nations, a reputation of this sort is uncommon. EEGSA benefits from the private sector background of its management and a culture that continues these private sector concepts.

One measure of EEGSA's operating efficiency is its customer-to-employee ratio. This ratio shows how many employees EEGSA needs to serve its customers, and is one measure of how efficient management is in controlling bureaucratic growth in a

state-owned organization. Exhibit 1 shows EEGSA's customer-employee ratio over the past two decades. Note that EEGSA management has been successful at keeping the ratio at the same level in 1990 as it was when EEGSA was privately held in 1971.

It is also helpful to compare EEGSA's operating statistics with other utilities of similar size. Exhibit 2 compares EEGSA across several categories with utilities in the United States. All utilities used are mainly distributors, with little or no generation, and have sales (in kwh) of a similar size to EEGSA. As far as possible, utilities were selected that served urban areas with relatively high population density -- to match EEGSA's service area.

Although there are many technical and customer related differences between EEGSA and U.S. utilities, several comparison points are worth noting from Exhibit 2:

- o Customers per employee - EEGSA's average of 260 customer's per employee is about 20% lower than the US utility average of 317. EEGSA is thus not too far below the average, although US utilities' sales per customer are some 7 times higher.
- o Sales per employee - EEGSA's sales per employee of 1062 MWh are much less than the US average of 7,886 MWh/employee. This is likely due in large part to the much higher electricity demand per customer in the United States than in Guatemala.
- o Percent Losses/Sales - EEGSA's average losses are over twice as high as the U.S. average (12.51% versus 5.13%)
- o Price/kWh - As discussed in the previous section, EEGSA's final rates to consumers are subsidized. This is apparent in the price comparison with U.S. utilities, where EEGSA's rates are approximately one-half of those in the U.S.

Thus, although EEGSA has a good reputation and relatively good operating efficiency, it still operates in a subsidized environment, and appears to have areas

EMPRESA ELECTRICA DE GUATEMALA, S.A.Customer/Employee Ratio

| <u>Year</u> | <u>Customers per Employee</u> |
|-------------|-----------------------------------|
| 1972 | 252 |
| 1973 | 265 |
| 1974 | 280 |
| 1975 | 270 |
| 1976 | 244 |
| 1977 | 258 |
| 1978 | 270 |
| 1979 | 265 |
| 1980 | 256 |
| 1981 | 247 |
| 1982 | 252 |
| 1983 | 254 |
| 1984 | 255 |
| 1985 | 258 |
| 1986 | 264 |
| 1987 | 276 |
| 1988 | 260 |
| 1989 | 258 |
| 1990 | 256 |

Figures are unaudited, provided by EEGSA.

Operating Statistics of Selected Privately Owned U.S. Electric Utilities (1988)

| Utility | Sales (MWh) | Generated (MWh) | % Gen'd (MWh) | Total Customers | Regular FT Empls. | Sales/FT Employee | Cust/FT Employee | Total Losses | % Losses/ Sales | Cents/ KWh |
|-------------------------------------|----------------|--------------------|------------------|--------------------|----------------------|----------------------|---------------------|-----------------|--------------------|---------------|
| EEGSA - Guatemala | 1,299,612 | 158,451 | 12.19 | 318,432 | 1,224 | 1,062 | 260 | 162,522 | 12.51 | 4 |
| Union Lgt. Heat & Pwr Co (KY) | 2,478,352 | 0 | 0.00 | 100,205 | 151 | 16,413 | 664 | 105,904 | 4.2/ | 5.54 |
| Bangor Hydro-Electric Co (ME) | 1,594,273 | 410,187 | 25.73 | 105,350 | 494 | 3,227 | 213 | 127,975 | 8.03 | 9.2 |
| Cambridge Electric Light Co. | 1,333,794 | 258,873 | 19.41 | 43,055 | 213 | 6,262 | 202 | 34,459 | 2.58 | 10.3 |
| Eastern Edison Co. (MA) | 2,470,235 | 0 | 0.00 | 168,755 | 388 | 6,367 | 435 | 111,866 | 4.53 | 9.93 |
| Blackstone Valley Electric Co. (RI) | 1,255,021 | 3,785 | 0.30 | 81,744 | 216 | 5,810 | 378 | 61,200 | 4.88 | 10.09 |
| Kingsport Power Co. (TN) | 1,529,932 | 0 | 0.00 | 37,364 | 102 | 14,999 | 366 | 66,189 | 4.33 | 4.8 |
| Citizens Utility Co (CT) | 1,150,237 | 235,933 | 20.51 | 80,205 | 281 | 4,093 | 285 | 101,022 | 8.78 | |
| Michigan Power Co. | 787,034 | 12,218 | 1.55 | 30,962 | 94 | 8,373 | 329 | 43,956 | 5.59 | 6.87 |
| Green Mountain Power (VT) | 1,996,884 | 229,900 | 11.51 | 73,292 | 373 | 5,354 | 196 | 117,322 | 5.88 | 7.18 |
| Central Vermont Public Service | 2,925,625 | 342,355 | 11.70 | 122,623 | 717 | 4,080 | 171 | 149,555 | 5.11 | 9.86 |
| Wheeling Power Co. (WV) | 1,930,136 | 0 | 0.00 | 40,527 | 164 | 11,769 | 247 | 47,374 | 2.45 | 6.58 |
| Average for U.S. Utilites | 1,768,320 | 135,750 | 8.25 | 80,371 | 290 | 7,886 | 317 | 87,893 | 5.13 | 8.04 |

Source: Financial Statistics of Selected Electric Utilities 1988

where improvements can be made. In fact, no incentives were apparent at EEGSA to reduce costs.

4. Employee concerns

Any privatization strategy for EEGSA must include the concerns of its employees. EEGSA appears to have a good reputation with its employees and their union: Sindicato de Luz y Fuerza. In fact, our discussions in Guatemala highlighted the fact that the union had a good working relationship with EEGSA management, enjoyed satisfactory benefits, and were not afraid of privatization if jobs were retained. The INDE union (STINDE) appears to be much more opposed to ideas of privatization.

One method of dealing with the issue of employees that has been used successfully in privatizations in other countries is the Employee Stock Ownership Plan (ESOP). Via an ESOP, employees receive a loan (often from the government) to buy all or part of the company being privatized. For example, in the privatization of ENTEL, Argentina's telephone company, 60 percent of the shares were sold to foreign companies, 30 percent were sold to local investors through the stock market, and 10 percent of the shares were given to employees via an ESOP. By having an ownership interest in the company, employees have more incentive to increase efficiencies.

A second method that has been used to deal with employee issues is to provide generous incentive packages for employees to retire. This helps to reduce employees without having to layoff staff.

D. Regulatory Issues

In addition to the strategic objectives and organizational concerns that would effect any privatization of EEGSA, there are also important regulatory issues that must be addressed. These are discussed below.

1. Regulation of profits

The overriding concern to the Government of Guatemala if it were to allow EEGSA to be privatized may be the excessive profits that EEGSA could earn if it was privately run and unregulated. Because distribution is a natural monopoly, EEGSA does not have any competition and could raise tariffs to increase profits. Under any privatization scenario, a new regulatory framework will be required to limit excessive profits.

2. Structure of regulatory board

Currently both INDE and EEGSA are regulated by the same board. If EEGSA were privatized, EEGSA should have its own regulatory board, to satisfy investor concerns about government involvement, although there could be some overlap with that of INDE.

3. Power supply guarantees

Even if EEGSA were privatized and most linkages with INDE removed, EEGSA would still be almost totally dependent upon INDE for power supplies. In order to protect investors' interests, long-term power sales contracts would be required under most scenarios to guarantee power to EEGSA.

4. Subsidies

The possible privatization of EEGSA does not necessarily imply the total elimination of subsidies and sharp increases in electricity rates. The Government of Guatemala could continue to subsidize rates through the power purchase agreement between INDE and EEGSA, and the regulation of EEGSA profits as discussed above. This is similar to the current situation, where INDE sells subsidized power to EEGSA, and EEGSA passes the subsidy through to the consumer after taking a mark-up to cover its own costs.

5. Summary

A limiting factor suggesting that immediate privatization of EEGSA is not-warranted is the lack of an appropriate regulatory framework to monitor EEGSA's activities and rates. The establishment of appropriate regulatory mechanisms should precede any ultimate privatization of EEGSA in order to ensure control over prices and limitations on excessive profits.

III. ANALYSIS OF INVESTORS' CONCERNS AND FINANCIAL VALUATION

This chapter presents analysis examining the value that the market might pay for EEGSA. We first discuss how investors would view an EEGSA privatization, then establish a range of values for EEGSA.

A. Investor Concerns

This section discusses how investors, both foreign and domestic, would view the investment potential of holding shares in EEGSA.

1. Foreign investors' concerns

Foreign investors evaluating investments in privatizations in developing nations look for several key attributes to determine potential values and interest:

- o hard currency cash flow - in order to avoid the problems with exchange rate fluctuations
- o solid export performance - in order to generate hard currency and have the ability to sell to more developed consumer and industrial markets internationally
- o profitability - a proven record of profitability in a state-owned-enterprise adds to its potential value
- o transferable assets - even if the enterprise is unprofitable, investors may be willing to pay for the value of its assets, particularly if they are transferrable (for example: airplanes)

Thus foreign investors are interested in companies that generate foreign currency, such as airlines and telephones, or in export industries such as mining or

manufacturing. In the case of EEGSA (and electric utilities in general), although it has a record of moderate profitability, its lack of foreign currency earnings would make investors wary of the effects of exchange rate fluctuations on earnings. Foreign investors would either only be willing to pay a very low price for EEGSA, or require exchange rate guarantees from the Government. Thus it is unlikely that foreign investors would show significant interest in EEGSA, at least at reasonable prices.

2. Overall investor concerns

The two most important issues for possible investors in EEGSA are likely to be:

- o the regulatory structure - in other words, how are investors' profits going to be regulated. If investors think that the Government will still have control over EEGSA even after privatization efforts, they will be very wary of investing. The regulatory scheme will directly effect the way they will value EEGSA's shares, because it will determine EEGSA's potential profitability. Valuations will vary depending on the regulatory scheme that is assumed.
- o the reliability of power supplies - if EEGSA was private and INDE remained state-owned, investors would be concerned about power supplies because EEGSA would continue to be almost totally reliant upon INDE for power. Thus investors would require long-term supply contracts between EEGSA and INDE, as well as a commitment by INDE to guarantee the availability of electricity.

Until a regulatory scheme was established for EEGSA and its long-term relationship with INDE was guaranteed, investors would be hesitant to invest in EEGSA.

3. Economic conditions

Current economic/financial conditions make it a poor time for an immediate sale of EEGSA's shares, unless foreign exchange or budgetary relief is desperately needed. Several current conditions add uncertainty and limit the price that INDE would receive for its shares in EEGSA:

- o inflation is currently running at approximately 70% per year, and interest rates are 25-35% for 1 year investments. Shares in EEGSA would have to offer investors similar returns in order to be competitive.
- o the exchange rate has been weakening, and is currently in the range of 5 to 6 Quetzales/Dollar, from a range of 2.5 to 3.5 Q/\$ over most of the 1980s.
- o political uncertainty continues, increasing the risk premium for investments
- o overall economic uncertainty continues with the prospects for a recession in the United States, the main trading partner of Guatemala.

4. Liquidity concerns

Guatemala's relatively undeveloped capital markets also would be a concern for investors. The BOLSA (stock exchange) has only been established since 1987, and as yet does not trade equities, only debt securities. This may limit share liquidity and the potential for a public offering. However, EEGSA's stable earnings could offer an opportunity for local equity market development.

5. Summary

Thus several factors would limit investors' interest in and valuation of EEGSA's stock. These include: 1) EEGSA's lack of foreign exchange earnings, 2) the uncertain

regulatory future, 3) the current high interest rates and other economic problems, and 4) liquidity concerns relating to the local stock market.

B. Financial Valuation

In this section we will discuss the methodology used and results of analyzing the value of EEGSA to a prospective private investor. In estimating the value of EEGSA to private investors, we examined two measures of its value:

- o the book value of its equity,
- o the expected value of cash flows to potential investors.

1. Book Value of Equity Based on Asset Value

Exhibit 3 summarizes EEGSA's net worth based upon the book value of revalued assets minus liabilities. This equals the books value of equity. The book value of EEGSA's equity (based upon revalued assets) is 297.8 million quetzales (\$59.6 million at a Q5:\$1 exchange rate). The book value of equity is a common valuation benchmark for U.S. utilities as U.S. utilities typically trade at market-to-book ratios close to one. In part, this relationship is due to the rate base rate of return regulation used in setting rates for U.S. utilities. This type of regulation allows a utility to earn a reasonable return on its rate base, which is generally measured as net fixed assets plus working capital. The rate of return allowed on the assets is typically set at the utility's weighted average cost of capital.

This valuation, however, does not provide a good measure of the market value of EEGSA's equity because EEGSA's regulatory rates are not based on ensuring that the utility is able to earn a reasonable return on its assets. We will use this measure

VALUATION OF EEGSA'S EQUITY BASED ON BOOK VALUE

(Quetzales, 000)

| | | |
|---|-----------|------------------------|
| FIXED ASSETS (1) | | |
| Plant | Q195,800 | |
| less Depreciation | (69,000) | |
| Increment for Revaluation | 507,600 | |
| less Depreciation for Revaluation | (316,400) | |
| | | 318,000 |
| | | |
| CURRENT ASSETS (2) | | |
| Cash | 18,956 | |
| Interest Receivable | 2,889 | |
| Special Deposits | 6 | |
| Trade Receivables | 55,670 | |
| less Reserves | (5,148) | |
| Inventory | 36,985 | |
| less Reserves | (499) | |
| | | 108,859 |
| | | |
| DEFERRED ASSETS (2) | | |
| Prepaid Expenses | 598 | |
| Balance for Allowances | 6,738 | |
| Other | 154 | |
| | | 7,490 |
| | | |
| TOTAL ASSETS | | 434,349 |
| | | |
| CURRENT LIABILITIES (2) | | |
| Payables | 90,635 | |
| Interest Payable | 17,473 | |
| Short-term Debt | 1,314 | |
| | | 109,422 |
| | | |
| LONG-TERM LIABILITIES (2) | | |
| Cust Security Deposits | 9,290 | |
| Long-term Debt | 2,796 | |
| | | 12,086 |
| | | |
| DEFERRED LIABILITIES (2) | | |
| Bal Pending Allocation | 5,867 | |
| Other Contingencies | 9,166 | |
| | | 15,033 |
| | | |
| TOTAL LIABILITIES | | 136,541 |
| | | |
| BOOK VALUE (NET WORTH) | | Q297,800 |
| | | |
| DOLLAR VALUE (@ Q5/\$1 EXCHANGE) | | <u>\$59,562</u> |

Sources: (1) ANALISIS AL ESTADO DE FUENTE Y USOS, 1989

(2) EMPRESA ELECTRICA DE GUATAMALA, BALANCE GENERAL, 1989

as a benchmark for analyzing the market value of EEGSA's equity through the expected value of cash flows approach described below.

2. Expected Value of Cash Flows

A better measure of the price a private investor would be willing to pay for the utility is the expected present value of future cash flows to equity. To analyze the market value of the utility, we developed a model to project future cash flows using a rate base / rate of return framework. In this framework, the feasibility of privatizing EEGSA can be analyzed by examining the relationships between the market value of the utility, the return on assets allowed by the rate-setting authority, and the rates charged to the utility's customers. Although this type of regulation / price setting approach may not be used if EEGSA is privatized, it provides a meaningful framework for analyzing the financial feasibility of privatization.

a. Methodology

In this section we describe the rate base / rate of return methodology used to analyze the feasibility of privatizing EEGSA. This analysis considers various forms of ownership to determine the impact of each form on the following parties:

- o private investors, if the utility is privatized,
- o ratepayers,
- o the government (the current owners of the utility).

This analysis was conducted through the use of a financial model that was developed to project revenue requirements, utility rates, and net cash flows over a ten-year period. Each of these components of the rate base / rate of return analysis

is described below.

Developing Revenue Requirements

The major focus of a rate base / rate of return analysis is to develop projections of revenue requirements used to determine the utility's rates. The revenue requirement is defined as the revenue required by the utility to cover its operating expenses and taxes, and to provide the owners with a reasonable return on the utility's assets. Thus, the revenue requirement is calculated as the sum of three components:

- o Fair Return on Rate Base: This component of the revenue requirement represents the net earnings of the utility.

In rate of return analysis, the rate base represents the value of the assets on which the utility is allowed to earn a return. The allowed rate of return measures the yield on assets allowed by the rate setter. In U.S. utilities, the allowed rate of return is typically set at the industry's cost of capital or the specific utility's weighted average cost of debt and equity. Therefore, the utility can cover the interest costs of its debt holders and provide an adequate return to its equity holders. In EEGSA's case, the allowed rate of return may be predetermined by the government's preferences in rate setting decisions.

Once the rate base and the allowed rate of return has been determined, the actual return on rate base is calculated by multiplying the rate base by the required rate of return.

- o Allowed Operating Expenses: The inclusion of operating expenses in the revenue requirement enables a utility to recover the costs of providing service to its customers. Such expenses include:
 - salaries and benefits,
 - fuel and energy purchases,
 - depreciation,
 - various other operating and maintenance expenses.
- o Income Taxes: Income taxes are included in the revenue requirement to

cover the utility's tax costs.

After estimating each of these components, the revenue requirement is then calculated as their sum.

Setting Utility Rates

The next step in rate of return analysis is to set rates based on the utility's revenue requirement and its forecasted demand for the period. For the purposes of this analysis, we will examine the overall demand for EEGSA's electricity and will estimate the average rate for all of EEGSA's customers as the revenue requirement divided by the total demand. This average rate will be used to highlight the impact of proposed privatization alternatives on the utility's ratepayers.

Analyzing the Utility's Market Value

In addition to determining the utility's revenue requirement and average rates, we can use the rate base / rate of return analysis to project the market value of the utility based on the cash flows to equity. To do so, we use the revenue and operating expenses projections to produce an income statement and a corresponding cash flow statement. The income statement reports the utility's revenue, expenses, taxes, interest expenses, and net income. Net income is carried into the cash flow statement as the major source of cash. Other sources of funds such as non-cash expenses (e.g. depreciation) are added to net income to calculate the total sources of funds. Uses of funds such as additions to plant, increases in working capital, and debt repayment are then subtracted from the total sources to estimate the cash flows available to equity.

To translate annual cash flows into a market value to the investor, we discount

the cash flows at the investor's cost of capital. In this case, we have used a cost of capital or discount rate of 25 percent. An average cost of capital for private investors in the Guatemala stock market is approximately 25 percent for a one year security. The equivalent term rate for government bonds is 35 percent.

b. Results of Rate Base / Rate of Return Analysis

In this section, we discuss the results of performing a rate base / rate of return analysis of EEGSA. Our analysis is based on ten-year projections of EEGSA's operations under various privatization alternatives. For this study, we have analyzed three privatization alternatives to provide a range of selling prices for the utility. These alternatives are:

- 1) Case I: Assume utility rates will remain at the levels projected by EEGSA.
- 2) Case II: Assume utility rates are allowed to rise to a level that would make it attractive for private investors to pay book value for the property.
- 3) Case III: Assume the government provides debt financing for a portion of the utility at a subsidized cost of debt to keep rates low.

In projecting EEGSA's operations under each of these alternatives, we made various simplifying assumptions concerning the operations of EEGSA. These assumptions are outlined below:

- o Net Plant: Net Plant in Service was assumed to stay constant over the ten year period. Thus, we have assumed that capital improvement outlays will directly offset depreciation each year (no net increase for expansion).
- o Operating Expenses: Operating Expenses for the 1990-93 period were taken from projections provided by EEGSA. We assumed that after

1993 operating expenses would grow at the 1985-89 five year historical average. Underlying this assumption is the assumption that energy purchases from INDE will continue to be subsidized by the government.

- o Working Capital: Working Capital is assumed to be 1/8 of operating expenses plus inventories. For this analysis, we assumed that inventories stay constant over the period.
- o Demand Forecasts: Projections of demand are based on those provided by EEGSA for the years 1990-96. After this period, demand is assumed to grow at the average rate of 7.05, based on the average historical growth in demand for the period 1985-1989.
- o Capitalization Requirements: We assumed that the Capitalization Requirements were equal to the Rate Base and therefore, grew as working capital grew. We assumed that the growth in capital was 100 percent debt financed.

Using these assumptions, we analyzed each of the privatization alternatives. The results of our analysis are described in detail below:

Case I: Utility Rates Remain at Forecasted Levels

As discussed previously, Case I assumes that utility rates will remain at the levels projected by EEGSA when the utility is privatized. We analyzed this case to estimate the market value of the utility under current conditions.

Exhibit 4 illustrates the impact of this alternative on the investor, the government, and the ratepayer as measured by, respectively, the investment requirements, the sale proceeds, and the utility rates. As illustrated, the estimated value of equity is 69.6 million Quetzales (\$13.9 million), only 23% of its book value. The reason for the low market value compared to book is that the profitability of the utility under the current rates is much lower than the investor's required rate of return of 25 percent.

Summary of Valuation Analysis
Case I -- Rates Remain at Current Forecasted Levels
(Quetzales, 000)

Exhibit 4

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Revenue Requirements | 335,400 | 388,400 | 407,100 | 442,800 | 502,065 | 573,782 | 656,293 | 751,224 | 860,443 | 986,101 |
| Demand (GWh) | 1,520 | 1,619 | 1,726 | 1,833 | 1,939 | 2,043 | 2,147 | 2,298 | 2,460 | 2,634 |
| Rates (Q / GWh) | 220.66 | 239.87 | 235.83 | 241.52 | 258.90 | 280.84 | 305.68 | 326.85 | 349.71 | 374.38 |
| Annual Increase | 32.20% | 8.71% | -1.69% | 2.42% | 7.20% | 8.47% | 8.84% | 6.93% | 6.99% | 7.06% |
| Increase Over Current Forecasted Level | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Net Income | 12,700 | 15,400 | 18,100 | 21,100 | 21,522 | 22,008 | 22,567 | 23,210 | 23,949 | 24,800 |
| Market Value of Equity | | | | | | | | | | |
| Quetzales (Q000) | 69,608 | | | | | | | | | |
| Dollars (\$000) | \$13,922 | | | | | | | | | |
| Book Value of Equity | | | | | | | | | | |
| Quetzales (Q000) | 297,800 | | | | | | | | | |
| Dollars (\$000) | \$59,562 | | | | | | | | | |
| Market / Book Ratio | 23.37% | | | | | | | | | |

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Summary of Valuation Analysis

Case II -- Rates Increase to Allow Market Value to Reach Book Value

(Quetzales, 000)

Exhibit 5

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|----------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|
| Revenue Requirements | 410,465 | 470,899 | 487,312 | 521,034 | 597,619 | 670,850 | 755,103 | 852,037 | 963,562 | 1,091,872 |
| Demand (GWh) | 1,520 | 1,619 | 1,726 | 1,833 | 1,939 | 2,043 | 2,147 | 2,298 | 2,460 | 2,634 |
| Rates (Q / GWh) | 270.04 | 290.82 | 282.29 | 284.20 | 308.18 | 328.35 | 351.70 | 370.71 | 391.62 | 414.54 |
| Annual Increase | 61.79% | 7.70% | -2.93% | 0.68% | 8.44% | 6.54% | 7.11% | 5.40% | 5.64% | 5.85% |
| Increase Over Current Forecasted Level | 22.38% | 21.24% | 19.70% | 17.67% | 19.03% | 16.92% | 15.06% | 13.42% | 11.98% | 10.73% |
| Net Income | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 |
| <u>Market Value of Equity</u> | | | | | | | | | | |
| Quetzales (Q000) | 285,416 | | | | | | | | | |
| Dollars (\$000) | \$57,083 | | | | | | | | | |
| <u>Book Value of Equity</u> | | | | | | | | | | |
| Quetzales (Q000) | 297,800 | | | | | | | | | |
| Dollars (\$000) | \$59,562 | | | | | | | | | |
| Market / Book Ratio | 95.84% | | | | | | | | | |

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Summary of Valuation Analysis
Case III -- Government Provides Subsidized Debt
(Quetzales, 000)

Exhibit 6

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|----------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|
| Revenue Requirements | 398,658 | 458,225 | 474,431 | 507,692 | 583,345 | 655,503 | 738,522 | 834,037 | 943,928 | 1,070,359 |
| Demand (GWh) | 1,520 | 1,619 | 1,726 | 1,833 | 1,939 | 2,043 | 2,147 | 2,298 | 2,460 | 2,634 |
| Rates (Q / GWh) | 262.27 | 283.00 | 274.83 | 276.92 | 300.82 | 320.84 | 343.98 | 362.88 | 383.64 | 406.37 |
| Annual Increase | 57.13% | 7.90% | -2.89% | 0.76% | 8.63% | 6.65% | 7.21% | 5.49% | 5.72% | 5.93% |
| Increase Over Current Forecasted Level | 18.86% | 17.98% | 16.54% | 14.65% | 16.19% | 14.24% | 12.53% | 11.02% | 9.70% | 8.54% |
| Net Income | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 | 74,450 |
| <u>Market Value of Equity</u> | | | | | | | | | | |
| Quetzales (Q000) | 285,416 | | | | | | | | | |
| Dollars (\$000) | \$57,083 | | | | | | | | | |
| <u>Book Value of Equity</u> | | | | | | | | | | |
| Quetzales (Q000) | 297,800 | | | | | | | | | |
| Dollars (\$000) | \$59,562 | | | | | | | | | |
| Market / Book Ratio | 95.84% | | | | | | | | | |

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Case II: Rates Increase to Allow Market Value to Reach Book Value

In this case, we assume that the government allows rates to increase until the market value of equity reaches the book value of equity. Hence, the rate of return is equal to the investor's cost of capital.

Exhibit 5 illustrates the results of this analysis. If such an alternative was chosen, the rates would be on average at least 16.8% higher than the rates currently forecasted by EEGSA over the ten-year period. The market value of the equity is 285.4 million Quetzales. This option allows the government to recover the book value of its equity holdings, although the basic subsidies in INDE's rates are not addressed.

Case III: Reducing Investor's Overall Cost of Capital

The final alternative we examined was the alternative in which the government provides debt financing to the investor at a subsidized rate. The objective of this alternative is to reduce the utility's overall cost of equity and therefore, keep rates low.

In analyzing this alternative, we assumed that the required capital structure is the same level as it was under Case II, 24% debt and 76% equity. In addition, we assumed that the government provides subsidized debt financing at 12.5%, half of the investor's cost of capital. Exhibit 6 provides the results of the valuation analysis under these assumptions. As illustrated, rates are approximately 2-3% lower than under Case II but are still much higher than currently forecasted rates, averaging 14% higher over the ten year period. Rates could be reduced further if the government were to increase the amount of debt it would provide at the subsidized rates. This

scenario could be used with an employee stock ownership plan if government were to sell EEGSA to its employees at subsidized interest rates.

3. Summary

Thus, although based upon net asset value, EEGSA's stock would be worth approximately Q297.8 million (about \$59.6 million), a more appropriate valuation based upon earnings indicates a much lower value of approximately Q69.6 million (about \$13.9 million). In addition to the regulatory scheme mentioned above that would affect these valuation estimates, several other uncertainties are present in the financial valuation area, including:

- o Cash flow may be lower than estimated, due to accounting issues such as recognizing revenue that may be uncollectible. This would reduce valuation estimates
- o Our assumption that net assets remain constant may be unrealistic if EEGSA continues to grow, this would reduce cash available for investors and reduce valuation estimates
- o The rate of return required by investors may be higher than 25%, which would reduce EEGSA's value to investors
- o Privatization could lead to gains in efficiency that improve profits and increase the value of EEGSA
- o The elimination of some subsidies, such as the terms INDE offers on accounts receivable, could reduce EEGSA's value to investors

IV. OPTIONS FOR PRIVATIZATION AND RECOMMENDATIONS

This section reviews options for privatization and presents our recommendations. Overall, Price Waterhouse recommends that the Government of Guatemala and INDE take a slow and planned approach to any final decisions regarding the future of EEGSA. We do not recommend a quick privatization of EEGSA by sale of shares for the following reasons:

- o Basic subsidy problem is not addressed -- Subsidy problems in the power sector, although large, do not seem critical enough to rush a sale of EEGSA. This is particularly true because EEGSA is a relatively efficient operator compared to INDE, and privatizing EEGSA does not address the basic subsidy problem that would still be present in INDE's electricity rates.
- o Regulatory mechanisms are not established -- The lack of appropriate regulatory mechanisms could lead to monopoly pricing and sharp tariff increases if EEGSA were privatized at the present time.
- o Expected revenue from sale of EEGSA is low -- The current economic situation, with high inflation, high interest rates, and exchange rate problems makes it a poor time to privatize due to the very low values that EEGSA is likely to command under such conditions. The limited interest of foreign investors and the lack of a local equity market are also issues that reduce the value of EEGSA to investors.
- o EEGSA and INDE are currently too interdependent -- EEGSA's close relationship and interdependency with INDE would have to be restructured to eliminate most subsidies and to establish power purchase contracts before any privatization. Further analysis would be required to examine the future of the entire Guatemalan electricity system, including INDE and the other electric distribution companies.

A. Options for Privatization

The following section briefly discusses and evaluates a range of privatization options that could be considered for EEGSA.

- o Public share offering - As discussed above, this is not the appropriate time to privatize EEGSA via a public share offering, in particular due to the relatively undeveloped stock market in Guatemala, the lack of a regulatory framework, EEGSA's interdependency with INDE, and the low values that such an offering would bring. However, EEGSA's record of moderate profitability, the possibility of linking a stock offering to an employee stock ownership plan, and the opportunity to develop local capital markets may make this a possible option in the future.

- o Private share offering - This option is not highly recommended because: 1) it is often troublesome politically due to the behind the scenes deal making that is required, 2) no other local Guatemalan companies know the electricity utility business and it would be unwise to sell EEGSA to a non-utility enterprise, such as an insurance company, and 3) a private offering would likely require significant foreign interest, although foreign investors would not pay high values for EEGSA.

- o New public or private investment - Under this option, INDE would dilute its 92% ownership in EEGSA by selling additional shares to bring in new capital. This option could be used at some point so that new cash is received to develop infrastructure, yet INDE could retain control as long as its shares are not diluted beyond 50%.

- o Sale of assets - Because EEGSA is a viable and going concern, the breakup and sale of its assets is not a viable option. This type of privatization is only used for unprofitable enterprises that are being liquidated

- o Management/Employee Buy-out - This could be a viable option in the future, and would retain the current management and employees, while giving them a profit incentive in the business. CAEM has received another study that reviews employee stock ownership plans (ESOPs), a privatization option that could be used here. This option does not provide any new capital, unless combined with other options.

-
- o Management Contract/Concession - Under this option, current management could be retained but with profit incentives added. Outside advisors or potential investors could be used under such a contract to allow them a chance to improve operations and evaluate the business -- a management contract would be much less risky for outside investors than purchasing EEGSA outright. However, given the apparent strength of current management, complete new outside management is not warranted.
 - o Merge INDE and EEGSA - Because of the private sector background and operating characteristics of EEGSA, it retains a separate identity from INDE. It would likely be troublesome to merge the two entities, as it might cause organizational problems and an increase in operational inefficiencies.
 - o Corporatization/Reorganization - A corporatization strategy brings private sector management and incentive concepts to a subsidized organization such as EEGSA. Corporatizing EEGSA would allow for short-term financial and efficiency improvements, while the ground-work was laid for future privatization options. This option would allow time for subsidy issues between INDE and EEGSA to be studied, and for EEGSA to begin to operate financially independent of INDE. This would also allow time for regulatory mechanisms to be established.

B. Recommendations

1. Short-run

Over the short-run, we recommend a "corporatization" strategy for EEGSA to increase its operating efficiencies and allow it to become an essentially independent subsidiary of INDE. By trying to run EEGSA as a truly private company, INDE and the Government of Guatemala can assess the true value of EEGSA before moving forward. Privatization options could then be considered at a later date. Specific steps to be taken include:

- o Financial Independence -- a financial review of the accounts and financial inter-dependencies between INDE and EEGSA should be

undertaken with the goal of eliminating any cross-subsidies (except for the subsidy in the cost of power) and allowing EEGSA to operate financially independent of INDE. For example, the subsidy that is inherent in the terms of payment on accounts payable could be eliminated by resolving the payment problem with EMPAGUA. Terms of payment could be reduced from 80 days to 30 days over time.

- o Incentives -- currently, there is a lack of incentives within EEGSA for cost reduction. Incentives should be established for management, and areas identified for cost reduction (such as reduction in inventories or elimination of unnecessary capital improvements). The goal would be to institute private sector incentives within EEGSA, and to improve profitability for future consideration of privatization options. A bonus structure for management and employees could also be established to provide incentives for cost-reduction and profit improvement.
- o Regulation -- The appropriate regulatory structure for INDE and EEGSA under privatization scenarios should be reviewed, in particular the possibility of a separate board for EEGSA, perhaps with overlapping membership. Because any future privatization options for EEGSA must consider the entire power sector in Guatemala, further study of INDE (where operating inefficiencies appear to be higher than within EEGSA) and the other Empresas is warranted to review the appropriateness of the application of private sector concepts to these institutions.

Independence will eventually be needed in the regulatory oversight process to enforce cost reduction and improvements in efficiency and to begin to divorce regulation from the political process to make it credible to investors. Eventually contracts (such as power purchase) would do much of the regulation.

Thus, steps can be taken to allow EEGSA to become less financially reliant upon INDE and to institute cost-reduction incentives. This "corporatization" will prepare EEGSA for the future consideration of privatization options. At this time, the most appropriate privatization options are public sale or a management/employee buy-out (or management contract), or a combination of these. Even if privatization is not the end result, these steps will improve EEGSA's operations.

CAEM, working with the Ministry, should establish a committee to begin to

establish goals for the corporatization of EEGSA. These would include goals such as reducing accounts payable and inventory levels, monitoring the appropriateness of capital outlays, and improving net income. The committee could oversee a review of EEGSA in two areas: an operations review aimed at improving utility operations and establishing incentives, and a financial review aimed at establishing goals for the eliminating of most subsidies between INDE and EEGSA. The goal of the corporatization of EEGSA would be that, except for the subsidy in power purchased from INDE, EEGSA would operate profitably in a subsidy-free environment. A similar review of INDE may also be considered.

2. Long-run

Over the longer term, the Government of Guatemala might consider several options to improve efficiencies and restructure the power sector, these include:

- o Independent Power Production and Cogeneration -- In order that new generation capabilities are developed in the private sector, the Guatemalan Government and INDE should consider expanding the movement towards cogeneration and independent power production. The limited purchases by INDE of excess generation from sugar mills in Guatemala, could be expanded to allow private developers to build, own, and operate power generation facilities to sell to power to the national grid. This option has become popular in many developing countries as a way to attract financing for new generation facilities, with lenders such as the World Bank becoming involved in private power financing.
- o Elimination of Subsidies -- A long-run goal for the power sector should be the elimination of subsidies in electricity rates. The production of new power (perhaps by the private sector) at unsubsidized rate, increased operating efficiencies and incentives within the power sector, and gradual increases in electricity tariffs could all help to eliminate subsidies over time. Cost increases to the poor within Guatemala could be prevented by the government issuing them coupons to be redeemed with their utility bills in lieu of payment. Under this method, which has been used in other countries, EEGSA and INDE would not have to sell power at a subsidized rate and could achieve operating efficiencies. The

The subsidy to the poor would be controlled directly by the government.