

**Business Focus Series**

**Private Power  
Business  
Opportunities:  
The Caribbean**



*Prepared by:*

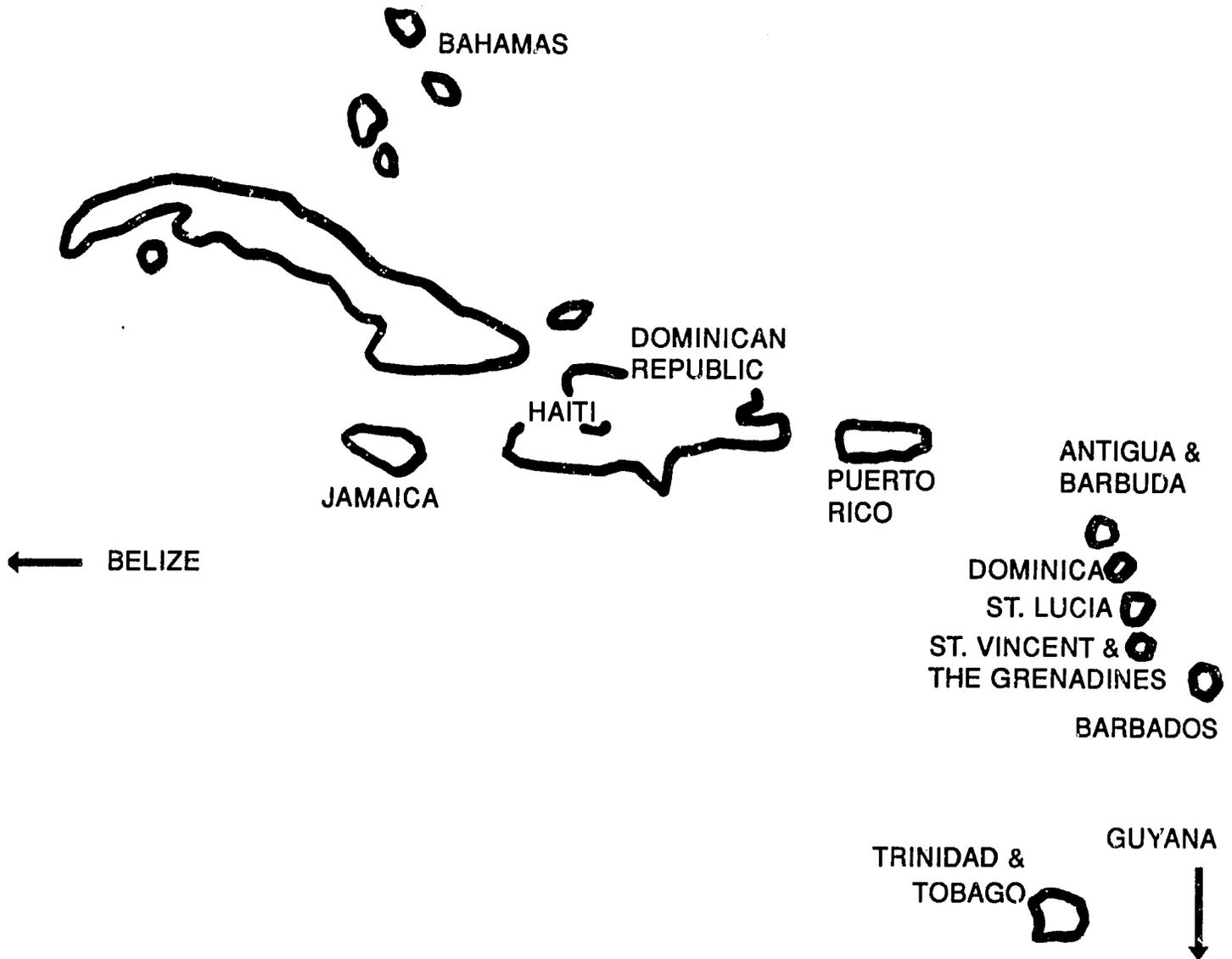
**U.S. Agency for International Development**

**Office of Energy & Infrastructure**

*in Cooperation with:*

**Bureau for Latin America and the Caribbean**

# Private Power Business Opportunities: The Caribbean



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This is one of three reports on private power business opportunities in Latin America. The other two reports examine these opportunities in Central and South America. These reports are part of the U.S. Agency for International Development's (USAID) Business Focus Series, and were prepared by RCG/Hagler, Bailly, Inc., and JRH Associates. The opinions expressed here are those of the authors and not necessarily those of USAID.

The Business Focus Series includes reports on promising energy and environmental markets and business opportunities in developing countries. The reports are of varying length and content, and may be regional, country-specific, or focused on a particular market segment.

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## Regional Overview

Insufficient amounts of reliable electric power are jeopardizing growth in the Caribbean. After their economic difficulties in the 1980s, the average gross domestic product of the 12 countries examined here rose by 2.8 percent in 1990. However, fully one-third of these nations experienced load shedding in 1991, which depressed their industrial and commercial productivity.

Except for the privately owned utility in Barbados, most of the region's utilities are plagued by technical and financial problems. For at least one-third of these utilities, the average incremental cost of electricity exceeds their revenues, and at least half have rates of return under 5 percent. With their cash-strapped governments no longer able to provide subsidies to the electricity sector, many Caribbean nations have begun to consider involving the private sector in their system expansion efforts.

Political leaders in these countries have come to believe that private power may be able to supply the added capital required for plant rehabilitation, more efficient operations, and plant expansion (the Caribbean countries plan to add 1,916 MW of new capacity, an average expansion of nearly 57 percent, through 1999). Some countries are envisioning private power where discrete generating units are owned, financed, constructed and operated by a private company that sells power to the utility or consumers. For example, Jamaica is currently soliciting 60 MW of slow-speed diesel capacity and Belize is now negotiating with Dominion Energy on a 21 MW hydroelectric plant. The Dominican Republic boasts the only operating private power plant in Latin America (owned by a subsidiary of Seaboard Corporation of Kansas City, Missouri) that was installed solely to sell power directly to a government-owned utility under a power purchase agreement. Other countries, such as Grenada and Guyana, are considering privatization -- the sale of part or all of a government-owned utility to the private sector.

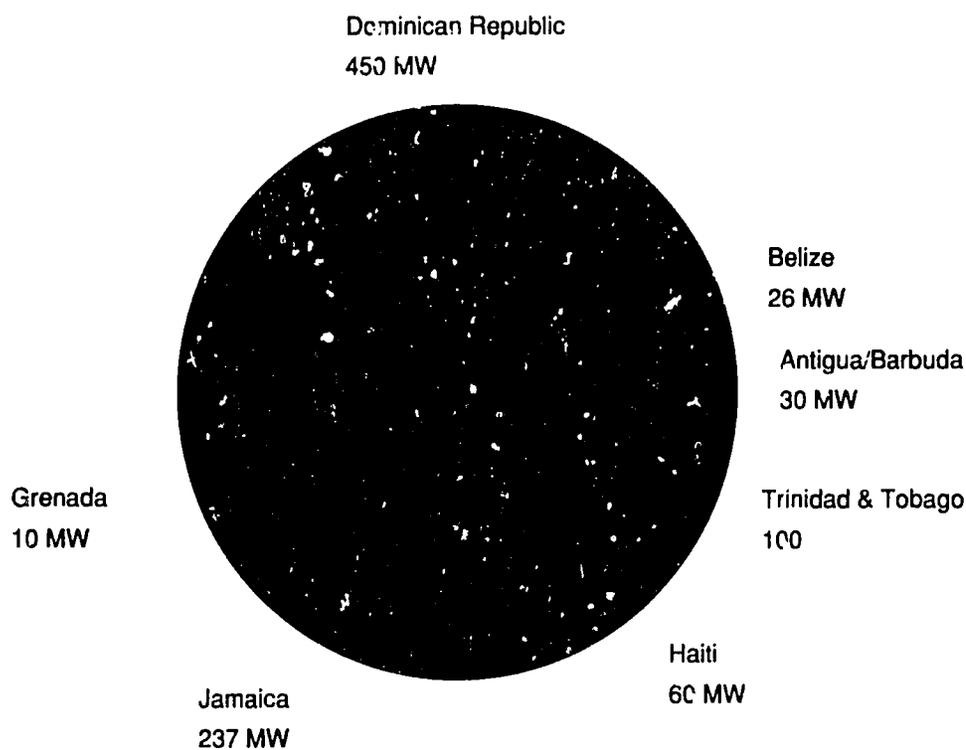
If this interest continues, there will be a viable market opportunity for U.S. private power companies seeking to build and operate plants in the Caribbean. Assuming these countries convert their interest in private power generation into firm commitments and power purchase contracts, the Caribbean market for private power could reach 916 MW by 1999.

Half of this potential (450 MW) lies in the Dominican Republic and one-quarter (237 MW) in Jamaica. Over 90 percent of their planned capacity

# Generation Capacity and Potential Private Power Market

	<b>Current Capacity (MW)</b>	<b>Expansion (1989-1999) (KW)</b>	<b>Total Investment Required</b>	<b>Estimated Private Power (MW)</b>	<b>Estimated Private Power Investment Required</b>
Antigua/Barbuda	492.	50	\$35 million	30	\$ 21 million
Barbados	133	49	\$125 million	0	0
Belize	14.6	13.7	\$70 million	26	\$30 million
Dominica	8	7	\$10 million	0	0
Dominican Republic	1,176	1,079	\$1,448 million	450	\$602 million
Grenada	13.4	18	\$15 million	10	\$8 million
Guyana	96	2	\$100 million	0	0
Haiti	186	166	\$300 million	60	\$108 million
Jamaica	529	309	\$425 million	237	\$326 million
St. Lucia	37.6	10	\$8 million	1	\$1 million
St. Vincent	13	12	\$15 million	2	\$3 million
Trinidad & Tobago	1,189	200	\$140 million	100	\$70 million
<b>TOTAL</b>	<b>3,444.8</b>	<b>1,915.7</b>	<b>\$2,691 million</b>	<b>916</b>	<b>\$1,169 million</b>

## Estimated Private Power Capacity in the Caribbean 1989-1999



additions would be thermal, almost evenly split between coal-fired plants and oil-fired diesel or combustion turbines. Haiti could present a market for 60 MW of coal-fired capacity additions, and there is a potential for the private development of 58 MW of hydroelectric capacity in Jamaica (37 MW) and Belize (21 MW).

The market in Trinidad and Tobago is more unpredictable; this nation plans to add 200 MW of gas-fired combustion turbines by 1999. Trinidad and Tobago enjoy the lowest electricity tariffs in the region as a result of ample natural gas supplies and electricity subsidies. If its policies and prices were to become somewhat more attractive, this country could look to the private sector for 100 MW or more of capacity.

Smaller private power markets exist in Antigua (30 MW), Grenada (10 MW), St. Vincent (2 MW), and St. Lucia (1 MW). Generally, their planned capacity is diesel fired. Only Barbados, Dominica, and Guyana (where the national utility may be privatized) offer no potential for independent private power development through 1999.

U.S. and other foreign companies are beginning to realize the potential that the Caribbean holds for private power. At present, proposals are outstanding for over 100 MW of combustion turbines and 50 MW of coal capacity in Jamaica, over 100 MW of oil-fired and 300 MW of coal-fired capacity in the Dominican Republic, and 21 MW of hydroelectric capacity in Belize. There have also been numerous proposals for biomass-fired cogeneration plants at sugar mills and other agricultural processing plants.

Despite a high level of interest in private power among Caribbean officials, only one power purchase contract has been signed in the region (in the Dominican Republic). Thus, potential private power investors must exercise some caution when attempting to develop projects. Many of the region's government and public utility officials have inflated expectations about the role of private power generation. They often assume that almost all of a project's commercial and financial risks can be transferred to the private sector. They also have difficulty in signing power purchase agreements to pay the real cost of power investment, especially capacity payments.

Private financing problems are exacerbated when these countries' leaders fail to realize that they must provide credit enhancement to their contracts with private developers due to the weak financial records of their

public utilities. In addition, project solicitation, proposal evaluation, and contract negotiation with private companies are much more complex than the governments or their utilities realize. All of these obstacles can be overcome, however, if companies seeking to enter this market develop a deep knowledge of local political and economic conditions, spend time and resources educating country officials about how the private power industry works, and are willing to see their efforts bear fruit over the long term, rather than the short term.

In the end, the critical need for additional generating capacity to support sustained economic growth in the Caribbean should be sufficient to overcome this resistance and create a viable market in the 1990s. If a few successful private power projects can be developed to serve as demonstrations, and if the initial investment can be converted into firm policy commitments, there will be a significant market for power in this region.

# Dominican Republic

Given the proven competitiveness of its light manufacturing, service, agricultural, and tourism sectors, the Dominican Republic posted healthy economic growth rates in the 1980s. Today, its GDP growth rate is 3.5 percent.

Because of its sound macroeconomic management and openness to direct foreign investment, this country has much less foreign debt (\$3,950 million in 1990) than its neighbors. However, its inflation rate has risen from 16.7 percent in 1980 to an estimated 100 percent in 1990.

The Dominican Republic's untapped potential for peak hydroelectric power is estimated to be 2,010 MW. In addition, its biomass resources offer an excellent opportunity for cogenerated power.

## The Electric Power Sector

Corporacion Dominicana de Electricidad (CDE) is an autonomous government-owned agency that provides all public electricity services in the country. It began operations in 1955 when it took over the privately owned Compania Electrica de Santo Domingo, a former subsidiary of Stone & Webster Corporation (U.S.).

CDE is administered by a seven-member board of directors, six of whom are appointed by the government and one by the utility's labor union. CDE reports to the President of the Republic, who appoints the president of the board and the general administrator (the latter is CDE's chief executive officer). The board regulates and approves major investment plans, borrowing, and broad policies, and recommends electric power rate schedules to the President of the Republic. During the late 1980s, CDE's management was affected by frequent changes in its general administrator.

CDE's 1989 gross generation was 4,033 GWh. Forty and 29 percent of its sales were to the residential and industrial sectors, respectively.

In 1989, 971 MW of CDE's 1,176 MW of generating capacity was in thermal facilities (diesel and coal fired) and the remainder in hydroelectric (its untapped hydro potential is estimated at over 2,000 MW). To meet its expected 1999 generation requirements of 8,557 GWh and to reduce its dependence on foreign oil, CDE plans to add new 175 MW of hydroelectric and 917 MW of coal-fired capacity, for a total cost of \$1,448 million. However, CDE has not updated its expansion plans in several years.

# DOMINICAN REPUBLIC - COUNTRY STATISTICS

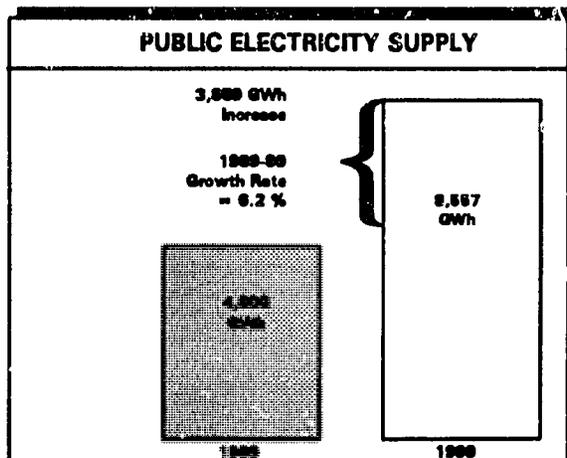
ECONOMIC PROFILE - 1990	
POPULATION	7,320,086
growth rate	2.3 %
GDP	\$3437 M
growth rate	3.8 %
WAGE RATE	\$0.47/hr
GDP/CAPITA	\$2.14\$
INFLATION	57.6 %
EXCHANGE RATE	US \$1.00 = DR Peso \$12.70 (fixed)

TRADE FIGURES - 1990	
EXPORTS = \$762.4 M	
sugar & by-products, ferronickel, gold & silver, coffee, cocoa & by-products, bauxite, textiles, apparel & footwear	
IMPORTS = \$1914.2 M	
Major Trading Partners	→ US, USSR, BENELUX, SPAIN, JAPAN, GERMANY, FRANCE, UK, MEXICO, VENEZUELA

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1999 (MW)	PRIVATE POWER MARKET 1992-1999 (MW)
HYDRO	265	380	0
GEOTHERMAL	0	0	0
OIL	752	752	50
steam combustion turbine	(562)	(562)	
diesel	(183)	(183)	
GAS	0	0	0
COAL/LIGNITE/OTHER	219	1138	400
<b>TOTAL</b>	<b>1176</b>	<b>2268</b>	<b>450</b>

ELECTRIC POWER SYSTEM - 1989	
GROSS GENERATION	4,033 GWh
ELECTRICITY SALES	3,789 GWh
industry share	28 %
PER CAPITA CONSUMPTION	484 GWh
RATE OF RETURN	1.8 %
SYSTEM FREQUENCY	60 c/s
VOLTAGE	
transmission	69 kV
distribution	34.5/13.8/12.4/4.1 kV

ENERGY RESOURCES - 1991	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	27.60/bbl
fuel oil	19.40/bbl
HYDROELECTRIC POTENTIAL	2010 MW
GEOTHERMAL POTENTIAL	n/a



ELECTRICITY PRICES - 1990	
TOTAL REVENUE/ TOTAL SALES	6.00/kWh
AVERAGE INCREMENTAL COST	10.70/kWh
AVERAGE RATE CONTRIBUTION TO INCREMENTAL COST	56 %
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	10.82/kWh
Commercial	8.15/kWh
Residential	7.60/kWh

CDE's retail tariffs are 10.8 cents/kWh for industrial users, 8.2 cents/kWh for commercial users, and 7.6 cents/kWh for residential users.

CDE's major problem has been maintaining the availability of its thermal generating capacity; this has prompted the private sector to install self-generating units, which at times provide up to 10 percent of the system's energy requirements. In addition, the utility experiences extremely high losses (27 percent in 1988) of electricity. Last, CDE's poor financial health has exacerbated its operational problems.

### **Private Power Opportunities**

The 1990 Law 14-90, Incentive for National Electric Development, permits and encourages private power production. It also guarantees project developers access to U.S. dollars or other hard currency and the conversion of local currency into foreign currency. This law also established the Directorate for the Development and Regulation of the Electrical Energy Industry. After the buyer and seller agree on a preliminary tariff, the Directorate must ascertain whether the project meets the national expansion plan and whether the proposed tariff will affect the final users. The directorate subsequently ascertains whether the documentation meets established guidelines.

Unfortunately, since its establishment, the Directorate has not signed any agreements, despite receiving eight proposals for a total generating capacity of 618 MW. The key obstacles have been bureaucratic infighting and lack of a firm commitment to private power.

One of the most advanced of these proposals has come from Synergics, Inc. of Annapolis, Maryland, which has proposed developing a 21.5 MW diesel project to be located in the Santiago free trade zone. The project would supply zone industries with power, and sell excess capacity and energy to CDE under a long-term power purchase agreement. Although the feasibility studies were completed, CDE cancelled this and seven similar power purchase agreements, apparently because of lender concern that appropriate commercial and pricing practices were not followed.

Panda Energy and Foster Wheeler (USA) have presented unsolicited proposals for a coal plant and a biomass/oil-fired facility, respectively. Several projects with capacities ranging from 25-35 MW have also been presented. These projects are sponsored by local industrialists, who typically propose to

generate power with high-speed diesels to serve industrial parks and free trade zones, selling excess capacity to CDE.

An apparent obstacle to private power development in the Dominican Republic is that CDE prefers to rehabilitate and build its own generation plants if it can obtain funds from multilateral development banks. If these obstacles are overcome, the market for private power in the Dominican Republic could reach 450 MW by 1999.

CDE has obtained power from two private generators since before Law 14-90 was passed: Falconbridge Dominicana (a ferronickel mine that has supplied it with surplus energy "as available") and Transcontinental Energy, Inc., a subsidiary of U.S.-based Seaboard Inc. The Falconbridge agreement calls for CDE to provide the fuel and to pay a fee to cover operations and maintenance; this agreement was last ratified in 1985. Transcontinental sells power to CDE under a contract from its 28 MW diesel/Bunker C-fired power barge in Santo Domingo and its 18 MW barge in Puerto Plata. CDE owns 25 percent of the latter.

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### **Business Practices**

Law 14-90 offers several incentives to investors. These include exemptions from: income tax for 25 years, property tax transfer on land for power plants, tax on the formation of companies engaged in electric power, and all duties and taxes on imports for commercial energy facilities.

Except during emergencies, CDE has generally used competitive bidding to procure needed goods and services. The Directorate assists prospective investors by putting them in contact with potential buyers (predominantly CDE). There are no significant financing sources for private power projects. However, the funds available from local financial institutions and commercial banks could provide a source of short-term working capital in local currency.

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# JAMAICA - COUNTRY STATISTICS

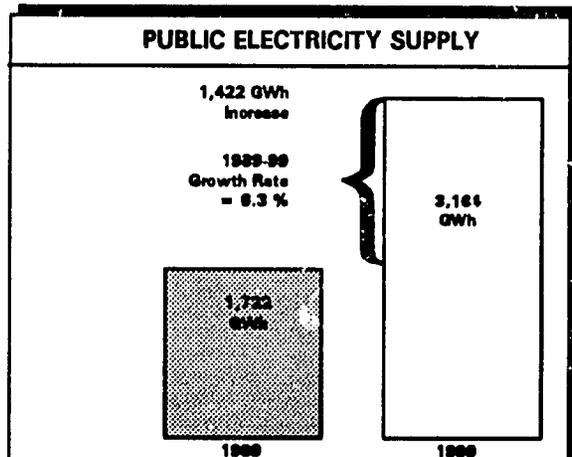
ECONOMIC PROFILE - 1990	
POPULATION	2,415,100
growth rate	1.0 %
GDP	\$2.87 M
growth rate	3.8 %
WAGE RATE	\$15/WK
GDP/CAPITA	61,150
INFLATION	15 %
EXCHANGE RATE	US \$1.00 = J \$22.00

TRADE FIGURES - 1990	
EXPORTS = \$1140 M	
alumina, bauxite, sugar, bananas, citrus fruits & fruit products, rum, cocoa coffee & apparel.	
IMPORTS = \$1850 M	
Major Trading Partners	→ US, UK, CARICOM, LATIN, AMERICA, JAPAN.

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1988 (MW)	1989 (MW)	PRIVATE POWER MARKET 1992-1999 (MW)
HYDRO	21	58	37
GEOTHERMAL	0	0	0
OIL	508	628	100
steam	(374)	(374)	(0)
combustion turbine	(94)	(134)	(40)
diesel	(40)	(120)	(60)
GAS	0	0	0
COAL/LIGNITE/OTHER	0	152	100
<b>TOTAL</b>	<b>529</b>	<b>638</b>	<b>237</b>

ELECTRIC POWER SYSTEM - 1989	
GROSS GENERATION	1,722 GWh
ELECTRICITY SALES	1,380 GWh
industry share	31 %
PER CAPITA CONSUMPTION	578 kWh
RATE OF RETURN	0.6 %
SYSTEM FREQUENCY	50 c/s
VOLTAGE	
transmission	138/69/33 kV
distribution	24 kV

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	53.37/bbl
fuel oil	17.15/bbl
HYDROELECTRIC POTENTIAL	110 MW
GEOTHERMAL POTENTIAL	n/a



ELECTRICITY PRICES - 1991	
TOTAL REVENUE/ TOTAL SALES	12.10/kWh
AVERAGE INCREMENTAL COST	19.40/kWh
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	9.82/kWh
Commercial	11.10/kWh
Residential	14.69/kWh

## Jamaica

The Jamaican economy grew by 3.8 percent in 1990, despite 15 percent inflation and an increase in interest rates. High interest rates were the result of growing foreign exchange arrears, decreasing tourism and oil prices during the Gulf War, and a 25 percent depreciation in the value of the Jamaican dollar against the U.S. dollar.

In 1990, the Jamaican government continued tight monetary and fiscal measures and introduced policy instruments aimed at expanding and diversifying the country's exports. It has also adopted a policy of privatizing numerous state-owned enterprises, including banks and Air Jamaica.

Jamaica's untapped potential for hydroelectric power is estimated to be 110 MW. Sugar mill cogeneration, as well as the planting of new varieties of sugar cane, have been studied with the aim of providing excess energy for sale to the grid.

### **The Electric Power Sector**

The government-owned Jamaica Public Service Company (JPS) provides all electricity services to the country. In 1989, it generated 1,722 GWh and sold 1,380 GWh (31, 48, and 21 percent to industrial, commercial, and other customers, respectively).

Although JPS is an autonomous, limited liability company under the laws of Jamaica, it comes under the direction of the Ministry of Mining and Energy. Rate increases are proposed by JPS in an application to the Minister of Mining and Energy, who approves the application with the consent of the Cabinet.

JPS's installed capacity in 1989 was 529 MW, of which 374 MW are fuel oil-fired steam units, 40 MW are diesel, 94 MW are diesel-fired combustion turbines, and 21 MW are hydroelectric (the country's untapped potential for hydroelectric power is estimated at 110 MW). JPS's current expansion plan calls for adding 309 MW by 1999: 152 MW of coal-fired steam plants, 40 MW of combustion turbines, 80 MW of diesel, and 37 MW of hydro. The cost of this expansion would be about \$425 million. The plan also encourages other proposals, especially biomass- and waste-fired units, as well as cogeneration projects. As a result of electricity shortages, the gas turbine and diesel plant schedules have been accelerated, but financing appears to remain an obstacle.

The first unit of a 2 x 68 MW coal-fired power plant is scheduled for 1997, to be located on the south central coast west of Kingston.

In April 1990, the Minister of Mining and Energy approved a rate increase averaging 37 percent. JPS's rates are now 14.7 cents/kWh for residential consumers, 11.1 cents/kWh for commercial customers, and 9.8 cents/kWh for industrial customers. At present, JPS has no rate structure for buying power from private generators.

In 1991, JPS's average revenue was 12.2 cents/kWh. However, its estimated average incremental costs for power generation were substantially higher at 19.4 cents/kWh.

The utility's insufficient revenues have not allowed it to properly maintain or expand its capacity or to service debt. Although the recent rates increase has improved this situation, it has not been sufficient to meet the utility's needs. The government is reluctant to permit JPS to continue public sector borrowing to meet its expansion needs.

### **Private Power Opportunities**

Although the government has discussed privatizing or at least selling stock in JPS, it seems far more interested in permitting private power generation. This has created substantial interest among local and foreign investors. In September 1990, the Jamaican government announced its intention to have its next generation plant constructed, financed, and operated by the private sector.

With technical assistance from A.I.D. and the World Bank, JPS has developed bidding documents and draft power purchase and security agreements for private power projects. If the price and collateral security issues can be resolved, there is a potential for 237 MW of private power generation in Jamaica through 1999. In addition, the Jamaica Attorney General's Office has determined that there are no legal impediments to JPS purchasing power from private generators. This has cleared the way for several project developers to make proposals to the government and JPS.

With support from the World Bank and A.I.D., JPS is now focusing on the international competitive bid documents for a 3x20 slow-speed diesel plant. It will send bid documents and a draft power purchase agreement to some seven prequalified bidders in early 1992. Equity will be the responsibility of the developer and debt financing may be available from a World Bank private sector energy fund and/or export credit agencies. In addition, JPS has accelerated its

combustion turbine schedule. With the utility's present financial difficulties, this generation may also be opened to the private sector.

In 1991, General Electric submitted a proposal to build and operate over 100 MW of combined cycle turbines to be coupled with the re-opening of a bauxite mine. Besides operating the power plant, GE proposed to resume operations of the mine, which had closed several years ago. However, negotiations have been dropped, apparently because of government concern about additional supplies of bauxite in a soft world market. Mission Energy was also actively pursuing this project.

A number of other private power projects are expected to move forward after the World Bank-sponsored diesel project is awarded. JPS is considering applying the power purchase agreement and related documents from this project to the others. International Energy Finance (IEF) of Bethesda, Maryland has been working with the Frome sugar mill to construct a cogeneration plant that would sell power to JPS. IEF has also proposed a 50 MW coal-fired power plant at a cement factory. Wartsila, Inc. of Finland has proposed installing medium-speed diesel private power plants, and National Cogen Corporation, a Jamaican company, has proposed purchasing and operating existing JPS power plants. Last, Synergics, Inc. of Annapolis, Maryland, has shown interest in small and medium-sized hydroelectric sites in Jamaica (a recent study found up to 50 MW of hydroelectric potential on Back Rio Grand, which JPS may offer to the private sector for development).

### **Business Practices**

The Jamaican government offers tax incentives to qualifying foreign and local investors, usually in the form of corporate tax exemptions. Approved manufacturers can either take advantage of a rebate on local inputs to the value of exports for an indefinite period, or obtain duty-free status on imports for a fixed period. The country's four free zones offer 100 percent tax holidays on profits in perpetuity, no need for import licensing or duties on goods imported for use in the zone, and the repatriation of profits up to the amount of the original investment without recourse to the Central Bank.

Except during emergency situations, JPS has generally used competitive bidding to procure goods and services. For the World Bank-supported 60 MW diesel project, JPS is using the international competitive bid process. In addition, JPS apparently has some latitude in receiving and

negotiating unsolicited proposals. The utility has signed letters of intent with GE and IEF.

Funds are available from local financing institutions and a few commercial banks to provide short-term working capital in local currency. In addition, the World Bank intends to establish a fund to cover an estimated 30 to 50 percent of the costs of the 60 MW diesel project. If this funding approach proves successful, it may be employed for other private power projects.

### **Possible Contacts**

#### ***Utility Officials***

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## Trinidad and Tobago

The Republic of Trinidad and Tobago registered a mixed economic performance in 1990, but appears to be returning to the first stages in a path of growth. Real GDP registered its smallest decline since 1983 (0.4 percent), while the petroleum sector experienced a resurgence and the goods-producing sector grew.

The central government's recent fiscal operations have been conducted within the framework of an IMF adjustment program. The final phase of a tax reform program begun in 1989 and higher oil prices have resulted in the country's first fiscal surplus since 1985.

The nation's proven reserves of oil exceed 500 million barrels. Its non-associated natural gas reserves are estimated at 16 trillion cubic feet.

### **The Electric Power Sector**

The government-owned Trinidad and Tobago Electricity Commission (T&TEC) has provided all electricity services to the country since 1945. Over 95 percent of the population now has access to electricity. The utility reports to the Ministry of Settlements and Public Utilities, while its tariffs are set by the Public Utilities Commission.

In 1989, T&TEC generated 3,403 GWh and sold 2,975 GWh: 59 percent to the industrial sector, 29 percent to the residential sector, and 12 percent to the commercial sector. Its electricity generation is expected to grow at nearly 4 percent per year through 1999.

In 1989, T&TEC had an installed capacity of 1,189 MW: 308 MW of steam turbines and 870 MW of gas turbines (all natural gas fueled; the gas is produced in association with crude oil in Trinidad), plus 11 MW of oil-fired diesel generators. The utility plans to add 200 MW of gas-fired combined cycle plants by 1999, despite uncertain financing for the \$140 million required. The first 200 MW plant should be completed by 1995 and the second by the end of the 1990s.

T&TEC's tariffs are among the lowest in the world, averaging 2, 3 and 4 cents/kWh for industrial, commercial, and residential customers, respectively. In addition, T&TEC's constantly increasing cost of electricity, including depreciation (4.4 cents/kWh), has been greater than its average revenue since

# TRINIDAD & TOBAGO - COUNTRY STATISTICS

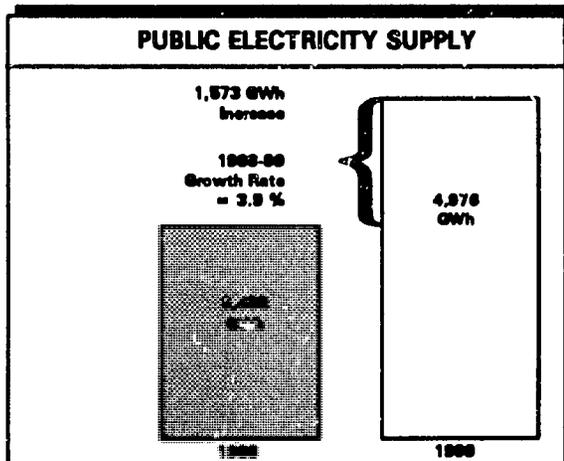
ECONOMIC PROFILE - 1990	
POPULATION	1,234,238
growth rate	2.1 %
GDP	44.89 B
growth rate	-0.4 %
WAGE RATE	n/a
GDP/CAPITA	44,127
INFLATION	18 %
EXCHANGE RATE	US \$1.00 = TT \$4.25

TRADE FIGURES - 1990	
EXPORTS = \$2.1 B	
petroleum & petroleum products, chemicals & manufactured goods	
IMPORTS = \$1.3 B	
Major Trading Partners	→ US, BARBADOS, JAMAICA, UK, CENTRAL AMERICA, OTHER CARICOM, CANADA, BRAZIL, VENEZUELA, OTHER EC

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1989 (MW)	PRIVATE POWER MARKET 1982-1989 (MW)
HYDRO	0	0	0
GEOTHERMAL	0	0	0
OIL	11	11	0
diesel	(11)	(11)	(0)
GAS	1,178	1,378	100
steam	(308)	(308)	(0)
combined cycle	(870)	(1070)	(100)
<b>TOTAL</b>	<b>1,188</b>	<b>1,388</b>	<b>100</b>

ELECTRIC POWER SYSTEM - 1989	
GROSS GENERATION	3,403 GWh
ELECTRICITY SALES	2,978 GWh
industry share	88 %
PER CAPITA CONSUMPTION	2,381 kWh
RATE OF RETURN	-4.2 %
SYSTEM FREQUENCY	60 c/s
VOLTAGE	
transmission	132 kV
distribution	11 kV

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	33.53/bbl
fuel oil	n/a
natural gas	90 cents/MCF
OIL POTENTIAL	500 ml/bbl
GAS POTENTIAL	16 trill CF



ELECTRICITY PRICES - 1991	
TOTAL REVENUE/ TOTAL SALES	US CENTS/kWh 3.10/kWh
AVERAGE INCREMENTAL COST	4.40/kWh
AVERAGE RATE CONTRIBUTION TO INCREMENTAL COST	70 %
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	2.00/kWh
Commercial	3.00/kWh
Residential	4.00/kWh

1974 (its current revenue is 3.1 cents/kWh). Because of these factors, T&TEC has been operating under severe financial constraints. The government's poor financial condition has forced it to stop subsidizing this utility. But at the same time, it has been reluctant to grant the necessary rate increases given the hardships its people face in adjusting to the major economic downturn of the last decade. As a result, T&TEC's 1989 rate of return was -4.2 percent.

Recently, T&TEC was granted its first rate increase since 1984. Although lower than the 29 percent requested, this 12 percent increase is expected to help the company somewhat, although it will not dramatically improve its financial condition. T&TEC's internal funding is expected to cover its debt service payments, but investments will be difficult to finance from new borrowings or private sector equity under these conditions.

Currently, T&TEC purchases 40 percent of its natural gas (the readily available and preferred fuel for private or public generation) under long-term contract at 24 cents/mcf; the remainder is purchased at a commercial rate of 90 cents/mcf. When the contract expires in 1994, T&TEC's fuel bill is expected to double.

### **Private Power Potential**

T&TEC has not received the loan guarantees it sought from the government for its expansion plan, raising the possibility of opening up the new plants to private power developers. This issue is likely to be resolved by the government. However, the Prime Minister was elected in late 1991, and his stance on privatization and private power is not known.

The privatization of T&TEC is considered unlikely because of institutional resistance and the utility's poor financial performance. However, privatization is occurring in other sectors of the economy: 49 percent of the telephone company has already been sold.

Private power companies face a number of obstacles in attempting to do business in Trinidad and Tobago. These include a shortage of foreign exchange and hence, a company's difficulty in repatriating its returns and profits, and legal restrictions that must be lifted.

Despite these problems, a number of private developers have proposed generation projects. ENRON Corporation held preliminary discussions with T&TEC about building a new private power plant, but withdrew due to the

low tariff levels. Another project being considered is a capacity expansion to the steel mill (T&TEC's largest customer), which would add 250 MW of capacity. An opportunity for off-grid power has also been identified, depending on the decision to go ahead with an aluminum smelter using Jamaican bauxite. While there is considerable skepticism about this 360 MW cogeneration project, if it were built, it would be privately financed. Another large-scale project has been proposed by a joint Japanese/Venezuelan private consortium. This project would interconnect the T&TEC system to Venezuela via undersea cable and would provide standby capacity to T&TEC. The consortium's suggested sale price of 2 cents/kWh is considered too high, however, and the project has little likelihood of being implemented.

Given the financial needs of T&TEC and the availability of natural gas in the country, Trinidad and Tobago present an estimated private power potential of 100 MW by 1999.

### **Business Practices**

Trinidad and Tobago permit 100 percent foreign ownership of individual companies. Although certain economic activities are reserved for nationals (e.g., banking, segments of the petroleum industry), electric generation is not specifically included among the restricted industries. To stimulate investment in industry and encourage tourism, tax incentives are available to resident companies and foreign corporations. These include accelerated depreciation, exemption from double taxation, tax holidays, and investment allowances.

The Trinidad and Tobago Industrial Development Corporation operates a clearinghouse for investors to eliminate the need to deal with multiple state agencies in application processing, concessions and incentives, work permits, and siting and other agreements.

Except during emergencies, T&TEC has generally used competitive bidding to procure needed goods and services. However, it has demonstrated a willingness to entertain unsolicited private power proposals. Although the commercial banking sector is relatively larger in Trinidad and Tobago than in other Caribbean nations, it has no significant domestic sources of financing for private power projects.

## **Possible Contacts**

### ***Utility Officials***

Dennis Singh  
Trinidad and Tobago Electricity  
Commission (T&TEC)  
Port-of-Spain, Trinidad and Tobago  
TEL: (809) 623-2611  
FAX: (809) 625-3759

### ***Government Officials***

His Excellency Noor Mohammed Hassanali  
President

The Honorable Patrick Manning  
Prime Minister

Wendell Mottley  
Minister of Finance

Morris Marshall  
Minister of Public Utilities  
5th Floor, Sacred Heart Building  
16-18 Sackville Street  
Port-of-Spain, Trinidad and Tobago  
TEL: (809) 624-9917  
FAX: (809) 623-6126

Gerald Thompson  
Trade and Economic Section  
Embassy of Trinidad and Tobago  
1708 Massachusetts Avenue, NW  
Washington, DC 20008  
TEL: (202) 467-6490

Brian J. Siler  
Commercial Section  
U.S. Embassy/Trinidad and Tobago  
15 Queens Park  
Port-of-Spain, Trinidad  
TEL: (809) 622-6371

### ***Private Organizations***

Jack Balkesoon  
Manager, Investment Promotion  
Industrial Development Corporation  
10-12 Independence Square  
P.O. Box 949  
Port-of-Spain, Trinidad and Tobago

Anthony Beaubrun  
President  
The Trinidad and Tobago Chamber of  
Industry and Commerce  
31 Frederick Street  
Port-of-Spain, Trinidad and Tobago

# HAITI - COUNTRY STATISTICS

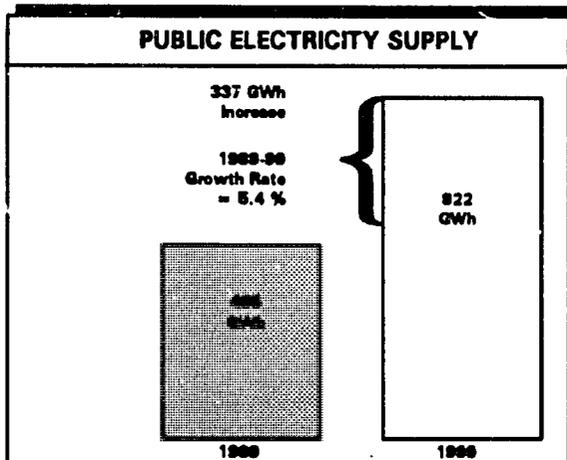
ECONOMIC PROFILE - 1990	
POPULATION	6,500,000
growth rate	2.0 %
GDP	\$1.78 B
growth rate	-3 %
WAGE RATE	\$3.20-3.30/day in Port-au-Prince \$2.75-2.95/day elsewhere
GDP/CAPITA	\$274
INFLATION	5.8 %
EXCHANGE RATE	US \$1.00 = \$7.65 gourdes

TRADE FIGURES - 1990	
EXPORTS = \$165 M	
coffee, light industrial products, essential oils, sisal & meat.	
IMPORTS = \$347 M	
Major Trading Partners	→ US, FRANCE, JAPAN, DR, EUROPEAN COMMUNITY (EXC. FRANCE), NETHERLANDS, ANTILLES, & VENEZUELA

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1999 (MW)	PRIVATE POWER MARKET 1992-1999 (MW)
HYDRO	54	100	0
GEOTHERMAL	0	0	0
OIL	132	262	60
coal	0	(120)	(60)
diesel	(132)	(132)	
<b>TOTAL</b>	<b>186</b>	<b>362</b>	<b>60</b>

ELECTRIC POWER SYSTEM - 1989	
GROSS GENERATION	485 GWh
ELECTRICITY SALES	341 GWh
industry share	39 %
PER CAPITA CONSUMPTION	53.5 kWh
RATE OF RETURN	6.2 %
SYSTEM FREQUENCY	60 c/s
VOLTAGE	
transmission	138/69/33 kV
distribution	24 kV

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	103.34/bbl
fuel oil	27.05/bbl
HYDROELECTRIC POTENTIAL	90 MW



ELECTRICITY PRICES - 1991	
	US CENTS/kWh
TOTAL REVENUE/ TOTAL SALES	n/a
AVERAGE INCREMENTAL COST	n/a
AVERAGE RATE CONTRIBUTION TO INCREMENTAL COST	n/a
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	13.27/kWh
Commercial	18.29/kWh
Residential	18.73/kWh

# Haiti

Haiti is the poorest country in the Western Hemisphere. Its GDP decreased about 7 percent between 1980 and 1989, and deteriorated even more sharply in 1990, when GDP growth was -3 percent. At the same time, its population growth is one of the world's highest. Haiti has seen its agricultural production and tourism revenues decline dramatically in the past decade and its private investment fall by half since 1990. In addition, its exports dropped by a third in 1990, which is partly attributed to the recession in the U.S., its largest trading partner.

In 1991 a military coup forcibly removed the Aristide government, resulting in a cessation of trading activities with the United States and most other countries that Haiti depended on for commerce and donor assistance. Because the new government has not been recognized by the United States government, Haiti has been forced into isolation, which will likely make its poor economic performance even worse. Until its international relations are normalized, little U.S. private investment will be made in Haiti.

There has been very little recent analysis of Haiti's hydroelectric resources, although current estimates put them at about 90 MW.

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## **The Electric Power Sector**

The government-owned Electricite d'Haiti (EdH) was created in 1971, and has since gradually taken over the government-owned Peligre hydro plant and a privately owned plant. It now controls all of the nation's electric services. However, EdH's electricity coverage is the lowest in the region, reaching only 10 percent of the population in 1989.

The president of EdH is the President of the Republic, who delegates authority on a permanent basis to the Minister of Public Works, Communications, and Transport, who in turn acts as the chairman of EdH's board of directors. Policy directives are set by EdH's president; the board regulates and approves tariff modifications, major investment plans, and broad policies.

Considering the nation's political and financial difficulties, it is remarkable that EdH's electricity supply has grown by 10.4 percent per year since 1971, reaching 485 GWh in 1989. However, the utility sold only 341 GWh in that year, largely as a result of its 30 percent losses.

EdH's 1989 installed capacity was 186 MW: 132 MW in diesel and 54 in hydro. Despite its financial problems and the country's uncertain political situation, its expansion plan is ambitious, calling for the addition of 46 MW of hydro capacity and 120 MW of coal capacity by 1999. The cost of this expansion would be \$300 million.

Haiti's tariff levels are relatively high. These range from 18.93 cents/kWh for residential customers and 18.29 cents/kWh for commercial customers, to 13.27 cents/kWh for industrial customers.

EdH has experienced very high technical and financial losses since the 1980s, largely as a result of illegal connections and nonpayment of bills, which have exacerbated its operating and debt service problems.

### **Private Power Potential**

Haiti has a limited amount of independent power generation at present. Private companies now have about 23 MW of diesel capacity for self-generation, primarily in the cement industry.

For the near term, the prospects for private power in Haiti are grim. Although the country has a substantial need for additional power, its current political instability and weak economy have caused investors to pull their money out of Haiti. However, if the political situation were to stabilize by the mid-1990s, it is possible that the projected 120 MW of coal capacity would be open for private participation. Thus, it is estimated that Haiti's private power potential could reach 60 MW by 1999.

### **Business Practices**

The Haitian government offers numerous investment incentives. These include tax exemptions for at least five years, exemptions from customs and import duties, and accelerated depreciation of investment. Haiti also has four free trade zones with numerous incentives for industries locating in them. The country is currently under an Organization of American States trade embargo.

## **Possible Contacts**

### ***Utility Officials***

Ingenieur Rosemond Pradel

Director General

Electricite d'Haiti

BP 1753

Port-au-Prince, Haiti

TEL: (809) 509-34600

FAX: (809) 509-38750

### ***Government Officials***

Jean Bertrand Aristide

President (deposed September 1991)

Prime Minister

(not recognized by U.S. government)

### ***Private Organizations***

Association des Industries - ADIH

P.O. Box 3568

Port-au-Prince, Haiti

TEL: 509-5-6450

# ANTIGUA - COUNTRY STATISTICS

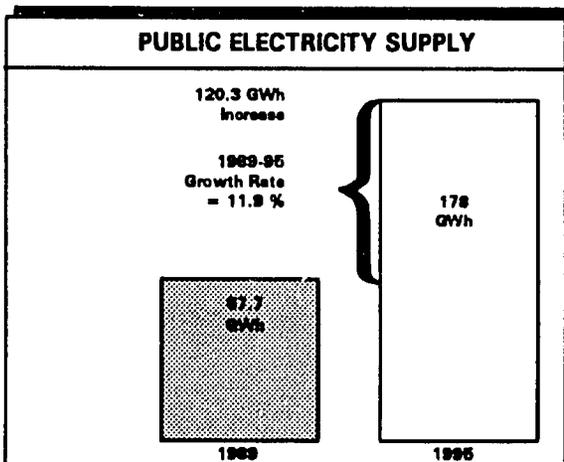
ECONOMIC PROFILE - 1990	
POPULATION	79,000
growth rate	0.3 %
GDP	\$340.5 M
growth rate	2.78 %
WAGE RATE	\$80-160/wk for Indust. workers
GDP/CAPITA	\$4,869
INFLATION	7.1 %
EXCHANGE RATE	US \$1.00 = EC \$2.70

TRADE FIGURES - 1990	
EXPORTS = \$41.8 M	
manuf. articles, chemicals, manuf. goods & materials, petroleum products, food & live animals, machinery & transportation equip.	
IMPORTS = \$443.3 M	
Major Trading Partners	→ US, UK, CANADA, TRINIDAD & TOBAGO, BARBADOS, CARICOM

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1995 (MW)	PRIVATE POWER MARKET 1992-1995 (MW)
HYDRO	0	0	0
GEOTHERMAL	0	0	0
OIL	49.2	99.2	30
heavy oil	(30.7)	(55.7)	(15)
diesel	(18.5)	(43.5)	(15)
GAS	0	0	0
<b>TOTAL</b>	<b>49.2</b>	<b>99.2</b>	<b>30</b>

ELECTRIC POWER SYSTEM - 1988	
GROSS GENERATION	57.5 GWh
ELECTRICITY SALES	52.0 GWh
commercial share	22 %
PER CAPITA CONSUMPTION	1,180 kWh
RATE OF RETURN	n/a
SYSTEM FREQUENCY	60 c/s
VOLTAGE	
transmission	69 kV
distribution	11/6.6 kV

ENERGY RESOURCES - 1990	
IMPORTED OIL	US \$/bbl
diesel oil	n/a
fuel oil	n/a
HYDROELECTRIC POTENTIAL	n/a
GEOTHERMAL POTENTIAL	n/a



ELECTRICITY PRICES - 1990	
TOTAL REVENUE/ TOTAL SALES	US CENTS/kWh n/a
AVERAGE INCREMENTAL COST	n/a
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	14/kWh
Commercial	13/kWh
Residential	14-17.5/kWh

## Antigua and Barbuda

Although these two islands enjoy low unemployment, their current inflation rate is 7.1 percent and their GDP grew by only 2.8 percent in 1990. Tourism is the largest contributor to their economies, accounting for approximately 40 percent of GDP and 25 percent of jobs.

Antigua and Barbuda's public sector finances remain vulnerable owing to a large external debt with some payment arrears. In September 1989, Hurricane Hugo hit the southern end of Antigua, causing an estimated \$74 million in damages, including \$24 million in damages to the electricity system. The storm has put further pressure on Antigua's debt repayment schedule. These islands have no significant renewable power resources other than wind and solar.

### **The Electric Power Sector**

The government-owned Antigua Public Utility Authority (APUA) provides all electricity services to Antigua and Barbuda, in addition to telephone and water services. The Public Utilities Act of 1973 established a public utility commission to regulate APUA, but this commission has not operated for years. Instead, the Ministry of Public Works, upon recommendations from APUA, sets electricity tariffs and forwards them to the Cabinet for final approval.

APUA generated 57.5 GWh in 1989, providing 95 percent of the population with access to electric service. APUA currently has four power stations: the Crabbs heavy fuel oil steam units (with a current effective output of 9.1 MW and a reserve capacity of 9.1 MW), the diesel-powered Cassada Gardens (three 1 MW diesel units, two of which are operating), Friars Hill (two 6.5 MW heavy fuel oil units), and two 2.5 MW diesels which are leased from an oil company and produce 4 MW of power. However, only 20.4 MW of the utility's 1988 installed capacity (diesel and heavy oil-fired units) of 49.2 MW were available because of the poor condition of its equipment. As a result, most homes, businesses, and industries have standby power; their total standby capacity is estimated to be over 5 MW.

In addition, the government's restricted ability to borrow money from international sources threatens the financing of APUA's proposed \$35 million, 50 MW generating capacity additions (half diesel and half heavy oil units) by 1995.

Like other small islands that depend on imported oil, APUA's retail tariffs are relatively high: 14 cents/kWh for industrial customers and 13 cents/kWh for commercial customers. But even with these tariff rates, APUA's high fuel and equipment costs, system losses, and collection problems have kept its revenues below total system costs.

### **Private Power Opportunities**

There is only one private power facility in Antigua, a hotel. Prospective self-generators must obtain APUA's permission to self-generate, and this permission is limited to consumers who cannot connect to the APUA system.

However, the government and APUA have been considering private participation as a solution to APUA's capacity expansion problems. APUA has thus far received four private power generation proposals and is considering the merits of the build-own-transfer (BOT) approach. The government is also considering the sale of the entire electricity division of APUA to the private sector, and is reviewing a number of proposals from prospective buyers. If APUA is not privatized and agrees to the BOT proposals, the opportunity for private power could reach 30 MW by 1999.

### **Business Practices**

Although Antigua has no free trade zones, certain industries can receive corporate tax holidays of 10 to 15 years, and possibly an additional five years of tax relief. The repatriation of profits is not restricted. Also, the government frequently exempts investors from the 1 percent foreign exchange levy on outward transfers.

Except during emergency situations, APUA has generally used competitive bidding to procure goods and services.

There are no significant domestic sources of capital for private power projects. However, the funds available from Antigua and Barbuda's few commercial banks do provide a source of short-term working capital in local currency.

## **Possible Contacts**

### ***Utility Officials***

Elseworth Martin  
APUA - Electricity Division  
St. Johns, Antigua

### ***Government Officials***

Dr. Vere C. Bird, Sr.  
Prime Minister and  
Minister of Defense and Information

Dr. Rodney Williams  
Minister of Economic Development,  
Industry, and Tourism

Robin Yearwood  
Minister of Public Utilities,  
Transportation, and Energy  
Thames Street  
St. Johns, Antigua

Paul Spencer  
Minister Counselor  
Embassy of Antigua and Barbuda  
3400 International Drive, NW, Suite 4M  
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Eric Sandberg  
Senior Commercial Officer  
U.S. Embassy  
Quenn Elizabeth Highway  
St. Johns, Antigua  
TELL: (809) 35-462-3505

### ***Private Organizations***

Lionel Boulos  
Executive Director  
Antigua Chamber of Commerce  
Redcliffe & Cross Streets  
P.O. Box 774  
St. Johns, Antigua

# BELIZE - COUNTRY STATISTICS

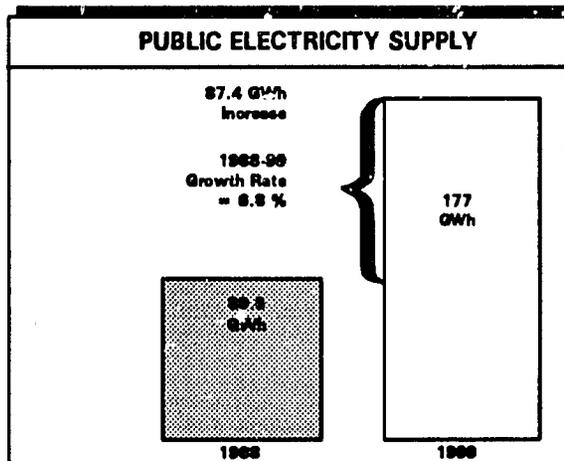
ECONOMIC PROFILE - 1990	
POPULATION	220,000
growth rate	5 %
GDP	\$352 M
growth rate	9.0 %
WAGE RATE	
GDP/CAPITA	\$1,637
INFLATION	1.5 %
EXCHANGE RATE	US \$1.00 = 100 BZ

TRADE FIGURES - 1990	
EXPORTS = \$104.9 M	
sugar, bananas, mahogany, citrus fruits, garments, seafood, vegetables, lumber molasses and honey.	
IMPORTS = \$190.0 M	
Major Trading Partners	→ US, UK, EEC (excl. UK), CARICOM, CANADA, JAMAICA JAPAN, AND MEXICO

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1990 (MW)	PRIVATE POWER MARKET 1992-1999 (MW)
HYDRO	0	0	21
GEOTHERMAL	0	0	5
OIL	14.8	28.3	0
heavy oil	0	0	0
diesel	(14.8)	(28.3)	0
GAS	0	0	0
<b>TOTAL</b>	<b>14.8</b>	<b>28.3</b>	<b>26</b>

ELECTRIC POWER SYSTEM - 1989	
GROSS GENERATION	99.8 GWh
ELECTRICITY SALES	73.4 GWh
industry share	n/a
PER CAPITA CONSUMPTION	338.7 kWh
RATE OF RETURN	15.8 %
SYSTEM FREQUENCY	60/50 c/s
VOLTAGE	
transmission	22 kV
distribution	22/8.0 kV

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	n/a
fuel oil	n/a
HYDROELECTRIC POTENTIAL	80 MW
GEOTHERMAL POTENTIAL	n/a



ELECTRICITY PRICES - 1990	
TOTAL REVENUE/ TOTAL SALES	20.6/kWh
AVERAGE INCREMENTAL COST	n/a
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	20/kWh
Commercial	20/kWh
Residential	15.5-20/kWh

## Belize

Belize's economy is based on agriculture and tourism. Its agricultural production accounts for 19 percent of the country's GDP and 70 percent of its export earnings (sugar alone accounts for one-third of exports). Although Belize's GDP grew by 9 percent in 1990, its economic growth has been constrained by inadequate infrastructure (poor roads and ports, and costly and irregular electricity service).

The United States is Belize's major trading partner, providing 56 percent of its imports and buying 51 percent of its exports in 1990.

Belize has about 80 MW of hydroelectric potential, but its hydro resources are located at sites far from the major load center of Belize City. This nation also has abundant biomass energy resources.

### **The Electric Power Sector**

The Belize Electricity Board (BEB) is the country's sole electric utility, supplying an estimated 70 percent of the population. BEB is overseen by the Ministry of Energy.

BEB's generation reached 90 GWh in 1989, having grown at nearly 9 percent per year during the mid-1980s. Its 1989 sales were 73 GWh: 61 percent to the industrial and commercial sectors, and 39 percent to the residential sector.

All of BEB's production comes from diesel generating sets, which account for one-fourth of the country's oil consumption. In 1989, its installed capacity was 14.6 MW, with individual diesel sets ranging in size from 100 kW to 3.56 MW.

Belize plans to increase its installed capacity to 28.3 MW by 1999, through the addition of diesel units. This expansion plan would cost Belize an estimated \$70 million. A 21 MW private hydroelectric plant on the Macal River has also been proposed, which would radically alter the utility's expansion plan, causing it to drop the addition of several diesel units.

BEB has a single tariff class, with a tariff rate of about 20 cents/kWh. No fuel surcharge is in place, but rates are adjusted according to the price of oil.

BEB has low debt levels as a result of a 1986 financial restructuring whereby the government paid BEB's existing debt against future sales of

electricity to the government. Its average 1989 revenue of 20.6 cents/kWh was one of the highest in the region. Since the 1980s, BEB has improved its management practices and reduced its losses and thefts from 25 to 15 percent.

### **Private Power Opportunities**

BEB is interested in private power, in the hope of relieving some of the financial burden imposed by its expansion plan. Because there appear to be no significant legal obstacles to private participation, and the government and BEB appear open to discussing private power proposals with foreign investors, the country's private power potential could reach 26 MW by 1999 (assuming that BEB contracts the 21 MW private hydroelectric plant and 5 MW of diesel plants to private concerns).

In October 1991, Dominion Energy of Richmond, Virginia and International Energy Equities of Denver, Colorado announced a joint venture to develop, build, and operate a 21 MW hydroelectric power station on the Macal River by late 1993. BEB will purchase the power, but no information on the investment costs or terms of the power purchase agreement is available.

Most of Belize's large industries and sugar mills self-generate their power (over 20 MW of standby and captive generation are in place). The potential for private generation to serve new industries is high because of the low reliability of the BEB system.

### **Business Practices**

The government offers a number of fiscal and other incentives to attract private investments, based on their contribution to the country's economy. Special incentives are offered to industries locating in rural areas, for export projects, and for projects using technology that is new to Belize. It also offers tax exemptions to approved enterprises for up to 15 years, and foreign investors can repatriate 100 percent of their profits up to their level of investment capital.

From the experience of the Macal River proposal, it appears that BEB will consider unsolicited private power proposals. There are no large domestic sources of financing for private power projects. Funds may be available from the government-owned Development Finance Corporation or commercial banks.

## **Possible Contacts**

### ***Utility Officials***

Lewis Lue  
Chief Executive  
Belize Electricity Authority  
Regent and King Streets  
Belize City, Belize  
TEL: (501) 231-304; FAX: (501) 230-891

### ***Government Officials***

Dame Dr. Minita E. Gordon  
Governor General  
  
George Cadle Price  
Prime Minister and Minister of Finance,  
Home Affairs, Defense, and Trade and  
Commerce

Florencio Marin  
Deputy Minister and Minister of Natural  
Resources

Carlos Diaz  
Minister of Energy and Communications  
Bel Mopan, Belize  
TEL: (501) 822-692

Ivonne Hyde  
Commercial Attache  
Embassy of Belize  
3400 International Drive, NW  
Washington, DC 20008  
TEL: (202) 332-9636

Bert Breun  
ECO/COM  
U.S. Embassy/Belize  
29 Gabourel Lane  
City of Belize, Belize  
(501) 277-161

Arthuro Villanueva  
Energy Officer  
USAID/Belize  
Agency for International Development  
Washington, DC 20521-3050

### ***Private Organizations***

Hugh Fuller  
President  
Belize Chamber of Commerce and  
Industry/BIEPU  
63 Regent Street  
P.O. Box 291  
Belize City, Belize

# GRENADA - COUNTRY STATISTICS

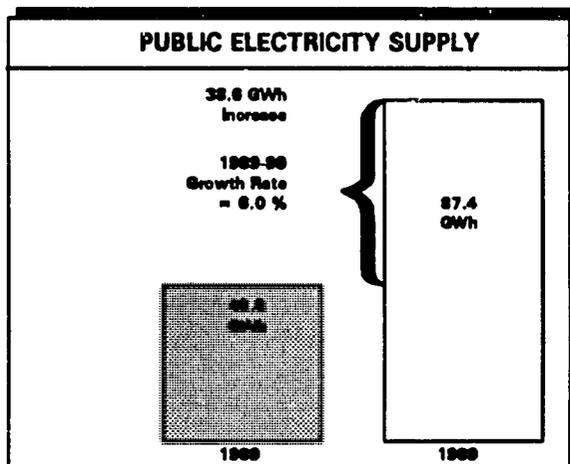
ECONOMIC PROFILE - 1990	
POPULATION	91,000
growth rate	0.25 %
GDP	\$156.3 M
growth rate	5.2 %
WAGE RATE	\$4.63-4.81/day in agric. \$5.55-6.26/day indust. \$20.37/day construct.
GDP/CAPITA (1989)	\$1,431
INFLATION	4 %
EXCHANGE RATE	US \$1.00 = EC \$2.70

TRADE FIGURES - 1990	
EXPORTS = \$47.8 M	
nutmeg, cocoa, bananas, mace & textiles.	
IMPORTS = \$103.7 M	
Major Trading Partners	→ US, UK, TRINIDAD & TOBAGO, CANADA, NORTH KOREA, NETHERLANDS, GERMANY

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1990 (MW)	PRIVATE POWER MARKET 1992-1999 (MW)
HYDRO	0	3	0
GEOHERMAL	0	0	0
OIL	13.4	28.4	10
diesel	(13.4)	(28.4)	(10)
GAS	0	0	0
<b>TOTAL</b>	<b>13.4</b>	<b>31.4</b>	<b>10</b>

ELECTRIC POWER SYSTEM - 1989	
GROSS GENERATION	48.8 GWh
ELECTRICITY SALES	40.3 GWh
industry share	10 %
PER CAPITA CONSUMPTION	413 kWh
RATE OF RETURN	n/a
SYSTEM FREQUENCY	60hz
VOLTAGE	
transmission	11kV
distribution	11kV

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	72.18/bbl
fuel oil	88.91/bbl
HYDROELECTRIC POTENTIAL	n/a
GEOHERMAL POTENTIAL	n/a



ELECTRICITY PRICES - 1990	
	US CENTS/kWh
TOTAL REVENUE/ TOTAL SALES	n/a
AVERAGE INCREMENTAL COST	n/a
AVERAGE RATE CONTRIBUTION TO INCREMENTAL COST	n/a
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	16.2/kWh
Commercial	20.3/kWh
Residential	18.3/kWh

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## Grenada

In the past five years, Grenada has enjoyed sustained economic growth, with its GDP expanding by 5.2 percent in 1990 and an estimated 5.5 percent in 1991. This nation has a positive attitude toward the private sector, and is one of the few countries that has signed a Tax Information Exchange Agreement with the United States, enabling it to benefit financially from the twin-plant concept and IRS 936 funding. Under 936 funding, profits from U.S.-owned plants based in Puerto Rico are not taxed if they are re-invested in Puerto Rico or most Caribbean nations.

After years of negligible price increases, inflation crept up to 4 percent in 1990, and unemployment levels have also remained high. Grenada continues to import over twice what it exports, although capital repatriation and increased tourism receipts have helped offset what would otherwise be a foreign exchange drain.

Feasibility studies have begun on Grenada's hydroelectric potential, but no estimates have been produced yet on its potential hydroelectric capacity.

### **The Electric Power Sector**

The government-owned Grenada Electricity Services Limited (GRENLEC) is the national electric utility, providing service to about 90 percent of the island. This utility recommends rates to the Minister of Public Works, who then forwards them to the Parliament for final approval.

GRENLEC's 1989 gross generation of 48.8 GWh is projected to increase to 87.4 GWh in 1999. GRENLEC sells 46 percent of its electricity to the residential sector, 44 percent to the commercial sector, and 10 percent to the industrial sector.

All of GRENLEC's existing capacity is generated by 12 diesel generators ranging in size from 650 kW to 2 MW. There is a single plant at Queens Park, close to St. Georges, that is severely congested. Alternative sites are being sought for additional capacity. GRENLEC plans to expand its 1989 capacity of 13.4 MW to almost 32 GWh by 1999. This expansion will be met by adding 15 MW of diesel (5 MW in 1993, 5 MW in 1995, and 5 MW in 1997) and 3 MW of hydro power (2 MW in 1994 and 1 MW in 1996). Delays in this \$15 million plan are expected due to a lack of financing.

GRENLEC has suffered from shortages in generating capacity as a result of the poor condition of its generating plant and insufficient investment. It has also experienced problems in obtaining necessary rate increases. Its rate structure -- an energy charge of 16.3 cents/kWh for industrial, 20.3 cents/kWh for commercial, and 19.3 cents/kWh for residential customers, plus a demand charge for industrial and commercial customers -- still has not allowed the utility to operate profitably. Its financial problems have also been a result of the government's slowness in paying electric bills, and chronic shortages of technical and planning skills.

### **Private Power Potential**

The government has given GRENLEC all rights for the generation, distribution, and sale of electricity. Standby capacity, which is quite common, requires permission from GRENLEC.

However, limited financing capability, chronic electricity supply problems, and the government's free market orientation combine to provide a 10 MW private power potential for Grenada by 1999, unless the GRENLEC system is privatized. IVO International of Finland has proposed purchasing a majority interest in GRENLEC, with the government maintaining a minority position. The government is now studying the proposal, and CDC (the owner prior to GRENLEC's nationalization in 1979-1980) is also expected to make an offer to regain control of the company.

A number of private power projects have been proposed to GRENLEC. National Energetics Corporation (NECO) of Newton, Massachusetts, has proposed a 10 MW combined municipal- and diesel-fired plant. A contract was signed in 1989, but was never ratified by the Parliament. GRENLEC was left out of the negotiations, and partisan politics played a role in preventing the deal's closure. While not entirely abandoned, its chances of success appear slim. Another proposal, similar to NECO's but scaled down, was recently presented by a group that included Stone and Webster.

### **Business Practices**

The current government appears favorably inclined toward private investment. It offers 15-year tax holidays, the repatriation of profits subject to a 25 percent holding tax (which is waived for various types of investments), the exemption of duties on plant, machinery, and raw materials, and government loan

guarantees. Foreign exchange purchases are taxed at 5 percent. The Industrial Development Committee has been created to streamline the evaluation of all private investment proposals, and makes recommendations to the Cabinet on approvals. Foreign individuals or firms must apply for investment permission from the Investment Review Committee.

Except during emergency situations, GRENLEC has generally used competitive bidding to procure goods and services. It apparently has some latitude in receiving and negotiating unsolicited proposals (e.g., the NECO proposal). There are no significant domestic sources of financing for private power projects. However, the funds available from local financial institutions and Grenada's few commercial banks provide a source of short-term working capital in local currency.

### **Possible Contacts**

#### ***Utility Officials***

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Grenada Electricity Services Limited  
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Francis Paul  
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1701 New Hampshire Avenue, NW  
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TEL: (202) 265-2561

#### ***Government Officials***

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Prime Minister and  
Minister of External Affairs

Thomas Moore  
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U.S. Embassy/Grenada  
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Sir Paul Scoon  
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Tillman Thomas  
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and Public Utilities  
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#### ***Private Organizations***

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President  
Grenada Chamber of Industry and Commerce  
P.O. Box 129, Mt. Gay  
St. George's, Grenada

Mr. Boatswain  
Industrial Development Committee  
Ministry of Industrial Development  
Botanical Gardens  
St. George's, Grenada

# ST. VINCENT - COUNTRY STATISTICS

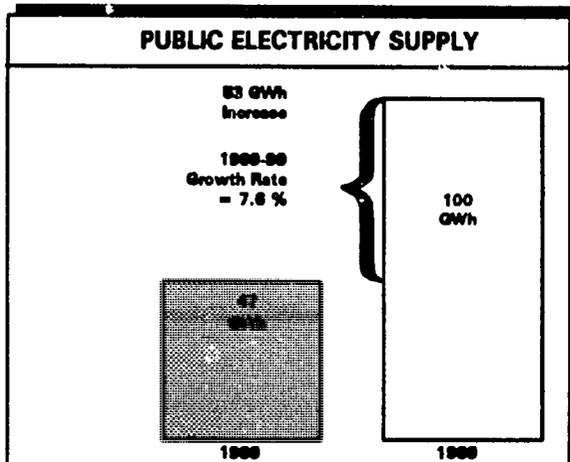
ECONOMIC PROFILE - 1990	
POPULATION	107,598
growth rate	0.5 %
GDP	\$163.3 M
growth rate	9 %
WAGE RATE	n/a
GDP/CAPITA	\$1,584
INFLATION	2.0 %
EXCHANGE RATE	US \$1.00 = EC \$2.70

TRADE FIGURES - 1990	
EXPORTS = \$117 M	
bananas, eddoes, flour, sweet potatoes	
IMPORTS = \$157.7 M	
Major Trading Partners	→ CARICOM, TRINIDAD & TOBAGO, UK, US

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1999 (MW)	PRIVATE POWER MARKET 1992-1999 (MW)
HYDRO	5	5	0
GEOHERMAL	0	0	0
OIL (Local)	8	20	2
TOTAL	13	25	2

ELECTRIC POWER SYSTEM - 1988	
GROSS GENERATION	47 GWh
ELECTRICITY SALES	40 GWh
Industry share	17.5 %
PER CAPITA CONSUMPTION	361 kWh
RATE OF RETURN	4.8 %
SYSTEM FREQUENCY	- o/s
VOLTAGE	
transmission	11/8 kV
distribution	6 kV

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	n/a
fuel oil	n/a
HYDROELECTRIC POTENTIAL	unknown
GEOHERMAL POTENTIAL	unknown



ELECTRICITY PRICES - 1991	
TOTAL REVENUE/ TOTAL SALES	US CENTS/kWh
	21.6/kWh
AVERAGE INCREMENTAL COST	n/a
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	16.3/kWh
Commercial	17.7/kWh + \$6 per mo. min.
Residential	15.7-16.5 + \$3 per mo. min.

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## St. Vincent and the Grenadines

These islands enjoyed a 9 percent GDP growth rate in 1990, led by their agricultural sector. Tourism and manufacturing are also expanding steadily. To increase both tourism and foreign investments, the government is emphasizing infrastructure improvement.

St. Vincent and the Grenadines have untapped hydroelectric potential, although no estimates of its volumes are available. Geothermal resources have not been identified on these islands.

### **The Electric Power Sector**

Prior to 1972, Commonwealth Development Corporation (CDC), the former owner of several electric companies in the British Caribbean colonies, owned the St. Vincent electricity system, while the electricity system on Bequia was wholly owned by the government. These two systems were merged in 1972 into the new government-owned St. Vincent Electricity Services Limited (VINLEC). CDC retained a 41 percent share of this company, which it then sold to the government in 1982. Today, VINLEC provides all power services to St. Vincent, Bequia, and Union islands (the government owns the Union Island station, which VINLEC operates under contract). There is no public utility commission on these islands. VINLEC proposes its own rate increases, which are approved by the Cabinet.

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In 1989, VINLEC generated 47 GWh of electricity and sold 40 GWh. Industry purchased over 17 percent, the commercial sector 37 percent, and residential consumers 44 percent.

VINLEC has an installed capacity of 13 MW: 5.2 MW in hydro and the remainder in oil (diesel) units. To meet its expected annual 7.8 percent growth rate in electricity consumption in the 1990s, this utility plans to add 12 MW of diesel units by 1999 in 3.2 MW increments every two or three years, although hydro should represent 60 percent of the nation's generation by 1995. The cost of this expansion is estimated at \$15 million.

VINLEC's 1991 average revenues of 21.6 cents/kWh are derived entirely from the sale of electricity. Its tariffs are equalized on a nationwide basis, with the main island of St. Vincent subsidizing the less wealthy islands (residential rates average 15.7 to 18.5 cents/kWh plus a \$3 monthly minimum charge; a fuel surcharge of 3 cents/kWh is applied to all tariff classes, and a

demand charge of \$4.4/kVA is applied to the industrial and commercial rates).

### **Private Power Opportunities**

The Electric Act of 1972 establishes VINLEC as the nation's sole seller of electricity, but it can award permits for others to sell electricity. Two small privately owned islands have private companies that provide power with technical assistance from VINLEC. The Mustique Company generates power for 200 consumers (with VINLEC approval and assistance). Union Island Electricity Services (with 3 x 125 kW diesel sets serving 300 customers) is operated by VINLEC but owned by the government, as is the electric service on Bequia, where plans are to add 2 x 250 kW, which could be a privately sponsored project. Other islands remain to be electrified. No authorization is needed for self-generation.

Although no major private power generators exist on these islands, the country's large growth in demand, favorable regulatory environment, and realistic tariffs indicate a potential for private power. In addition, no legislative changes would be necessary for the development of private power. Thus, these islands present a 1 to 2 MW private power potential by 1999.

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### **Business Practices**

St. Vincent and the Grenadines have no explicit investments in place for foreign investors (incentives, including credits, are in place for local investors).

Indications are that VINLEC would consider unsolicited offers for private power. While no significant domestic sources of funds are available for private power projects, local financial institutions and commercial banks could provide a source of short-term working capital in local currency.

## **Possible Contacts**

### ***Utility Officials***

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456-2436

### ***Government Officials***

His Excellency Sir David Jack  
Governor General

James Fitz-Allen Mitchell  
Prime Minister and  
Minister of Foreign Affairs and Finance

Hon. Jeremiah Scott  
Minister of Communications and Works  
Kingston, St. Vincent  
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### ***Private Organizations***

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St. Vincent and the Grenadines  
Chamber of Commerce and Industry  
P.O. Box 134  
Kingston, St. Vincent

# ST. LUCIA - COUNTRY STATISTICS

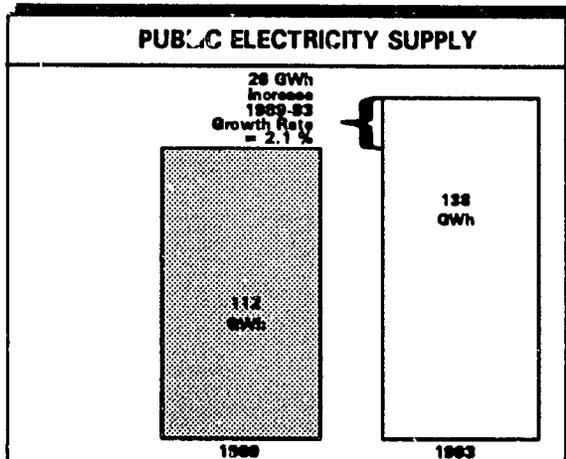
ECONOMIC PROFILE - 1990	
POPULATION	151,290
growth rate	2.0 %
GDP	\$101.78 M
growth rate	4 %
WAGE RATE	\$1.00-1.25/HR
GDP/CAPITA	\$672.00
INFLATION	7 %
EXCHANGE RATE	US \$1.00 = EC \$2.70

TRADE FIGURES - 1990	
EXPORTS = \$127.3 M	
bananas, cardboard boxes & coconut products	
IMPORTS = \$271.4 M	
Major Trading Partners	→ US, UK, CARICOM, BARBADOS, JAMAICA, TRINIDAD, JAPAN, CANADA, WEST GERMANY, GUYANA

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1993 (MW)	PRIVATE POWER MARKET 1992-1993 (MW)
HYDRO	0	0	0
GEOTHERMAL	0	0	0
DIESEL	37.6	47.6	1
<b>TOTAL</b>	<b>37.6</b>	<b>47.6</b>	<b>1</b>

ELECTRIC POWER SYSTEM - 1988	
GROSS GENERATION (1988)	112 GWh
ELECTRICITY SALES	88 GWh
Industry share	13 %
PER CAPITA CONSUMPTION	587 kWh
RATE OF RETURN	8.4 %
SYSTEM FREQUENCY	50hz
VOLTAGE	240/416v
transmission	66kV
distribution	11/0.0/0.36kV

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	n/a
fuel oil	n/a
HYDROELECTRIC POTENTIAL	n/a
GEOTHERMAL POTENTIAL	10 MW



ELECTRICITY PRICES - 1991	
TOTAL REVENUE/ TOTAL SALES	n/a
AVERAGE INCREMENTAL COST	n/a
AVERAGE RATE CONTRIBUTION TO INCREMENTAL COST	n/a
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	10.4/kWh
Commercial	10.5/kWh
Residential	8.8-10.5/kWh

## St. Lucia

St. Lucia's real output growth has averaged 4 percent over the last few years, with favorable performances in agriculture, tourism, and construction. However, the growth of its manufacturing sector slowed to 1 percent in 1990.

The government of St. Lucia has shown a desire to attract foreign and local investment by setting up five industrial parks, two free zones, and a data-entry park. This country also offers development incentives to the manufacturing and tourism industries.

St. Lucia does possess some potential for small-scale hydroelectric generation and some 10 MW of geothermal potential. Otherwise, there are no significant non-conventional energy resources for electric power on this island.

### **The Electric Power Sector**

St. Lucia Electricity Services Ltd. (LUCELEC) has provided power to the island for 80 years. It is regulated by a public utility commission that is appointed by the government.

LUCELEC operates two physically separated diesel-based systems with a total capacity of 37.6 MW: Union Power serving the north end of the island and Vieux Power Station supplying power in the south. The government owns 49 percent of LUCELEC and the Commonwealth Development Corporation (CDC), which once owned several electric companies in the British Caribbean colonies, owns 51 percent.

LUCELEC generated 112 GWh from its diesel units in 1989. Union Power station has a of 18.5 MW and Vieux Power Station has 6.5 MW of capacity. Individual diesel sets range from 600 kW to 2,760 kW. It sold 51 percent of its electricity to the commercial sector, 13 percent to industry, and 51 percent to residential consumers in that year.

This utility's generation is predicted to grow by 5.3 percent per year through 1993. To meet its future needs, LUCELEC plans to add 10 MW of diesel generators by 1995, at a cost of \$8 million.

LUCELEC's tariffs are fairly low for the region: 10.4 cents/kWh for industrial users, 10.5 cents/kWh for commercial users, and 8.8-10.5 cents/kWh for residential consumers. Still, it has managed to maintain a healthy 8.4 percent rate of return.

### **Private Power Opportunities**

CDC has announced its interest in selling its 51 percent share in LUCELEC, but has taken no firm public actions in this regard. This remains the only real opportunity for private participation in St. Lucia's power sector through 1994 and possibly beyond that time. Thus, it is estimated that the island holds 1 MW of private power potential through 1993.

In the late 1980s, with USAID assistance, a private company conducted a feasibility study of developing a 5 to 10 MW geothermal power plant. However, no further action has been taken on this project.

### **Business Practices**

The incentives offered by the government include tax holidays and the duty-free importation of equipment, plant and raw materials. These incentives are offered to export-oriented manufacturing and assembly-type operations in the free trade/industrial zones.

Except during emergencies, LUCELEC has generally used competitive bidding to procure needed goods and services. This utility has indicated that it would likely consider unsolicited private power proposals. In addition, it apparently enjoys some latitude in receiving and negotiating unsolicited proposals, but this has not yet been tested. Funding for private power projects in St. Lucia may be available from the Caribbean Development Bank or the Caribbean Project Development Facility.

## **Possible Contacts**

### ***Utility Officials***

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John Joseph  
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TEL: (809) 452-2324

### ***Government Officials***

James Stanislas  
Governor General (Acting)

John Compton  
Prime Minister and Minister of  
Finance, Minister of Planning  
and Development, and Minister of Home  
Affairs

George Avril  
Minister of Communications,  
Works, and Transport

Joseph E. Edmunds  
Ambassador  
Embassy of St. Lucia  
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Washington, DC 20006  
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### ***Private Organizations***

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Leslie Clarke  
Chairman  
St. Lucia National Development  
Corporation  
27 Brazil Street  
P.O. Box 495  
Castries, St. Lucia

# BARBADOS - COUNTRY STATISTICS

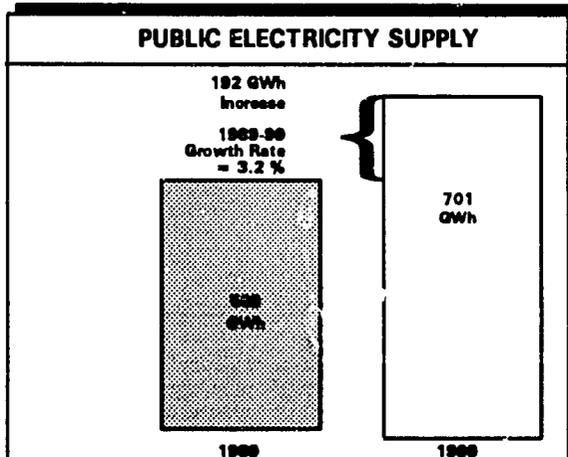
ECONOMIC PROFILE - 1990	
POPULATION	257,000
growth rate	0.8 %
GDP	\$1482.5 M
growth rate	-3.1 %
WAGE RATE	\$75-225/wk
GDP/CAPITA	\$5,750
INFLATION	4.7 %
EXCHANGE RATE	US \$1.00 = BD \$2.00

TRADE FIGURES - 1990	
EXPORTS = \$210.6 M	
clothing, electronic components, building cement, chemicals, rum, furniture, machinery, transport equip. & sugar	
IMPORTS = \$704 M	
Major Trading Partners	→ US, UK, CARICOM

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1999 (MW)	PRIVATE POWER MARKET 1992-1999 (MW)
OIL	116	131	0
heavy oil	(40)	(40)	0
diesel	(76)	(91)	0
GAS	18	51	0
<b>TOTAL</b>	<b>133</b>	<b>182</b>	<b>0</b>

ELECTRIC POWER SYSTEM - 1989	
GROSS GENERATION	508 GWh
ELECTRICITY SALES	441 GWh
Industry share	34 %
PER CAPITA CONSUMPTION	1,731 kWh
RATE OF RETURN	4.4 %
SYSTEM FREQUENCY	50 c/s
VOLTAGE	
transmission	-kV
distribution	24/11 kV

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	79.63/bbl
fuel oil	23.17/bbl
natural gas	12.6 MCF
HYDROELECTRIC POTENTIAL	0
GEOTHERMAL POTENTIAL	0



ELECTRICITY PRICES - 1991	
TOTAL REVENUE/ TOTAL SALES	US CENTS/kWh 13.9/kWh
AVERAGE INCREMENTAL COST	n/a
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	9.3/kWh
Commercial	10/kWh
Residential	11/kWh

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## Barbados

The 1990-1991 financial year was a mixed one for Barbados. Its real rate of GDP growth changed from -3.1 percent in 1990 to 3.5 percent in 1991, led by tourism, manufacturing and construction. Agricultural sector growth, however, declined. Barbados also experienced a 4.7 percent rate of inflation during 1990.

The United States is Barbados' major trade partner, and it continues to welcome U.S. investment in virtually all sectors of its economy. In addition to direct investors, in recent years Barbados has attracted a sizable number of U.S. insurance companies and foreign sales corporations, largely through a bilateral double-taxation agreement.

Barbados has proven reserves of 3.1 million barrels of oil, and produced 450,000 barrels of crude oil in 1990, about one-third of its needs. Its natural gas reserves are about 6 MMCF. Barbados hopes to raise the share of oil met by domestic production, and is increasing its exploration expenditures.

### **The Electric Power Sector**

The sole electric utility on the island is Barbados Light and Power Company (BL&P). It operates under a non-exclusive franchise and is an investor-owned utility: 30 percent of its shares are held by Barbadian investors, 20 percent by the government, and 50 percent by foreign investors. Its electricity rates are regulated by the Public Utilities Board in accordance with the Public Utilities Act.

In 1989, BL&P generated 509 GWh, serving some 89 percent of the population. Its total sales were 411 GWh (34 percent each to the industrial and commercial sectors, and 31 percent to the residential sector). BL&P's 1989 installed capacity was 133 MW: 115 MW oil-fired and 18 MW gas-fired. Two small wind turbines and two sugar mills are currently connected to the grid.

BL&P's generation is expected to grow by 3.2 percent per year through 1999. To meet growing demand, it will add 49 MW of new capacity by 1999 (16 MW of oil-fired steam or diesel units, and 33 MW of gas turbines), at an estimated cost of \$125 million.

Barbados' electric rates are among the lowest in the Caribbean: 9.3 cents/kWh for industrial users, 10 cents/kWh for commercial users, and 11 cents/kWh for residential users, plus modest additional capacity and fuel surcharges.

This nation's proven oil and natural gas reserves meet about one-third of its needs, and Barbados is increasing its exploration expenditures. Its non-conventional energy sources are minimal.

BP&L is one of the best run utilities in the Caribbean and provides highly reliable service. It enjoys an excellent credit rating and has experienced steady growth and profitability during the last decade. Its rate of return on assets has averaged between 4 and 8 percent, which has allowed it to attract capital for new capacity with little trouble. For the last two decades, BL&P's operating income has also been positive.

### **Private Power Opportunities**

BL&P has taken a conservative approach to private power, and currently sees no need for any firm private capacity, although there is no regulation prohibiting private power. Private power generators would need permission from BL&P to interconnect.

To date, the utility purchases power at the cost of fuel only, giving no credit for capacity, partly because the projects have been small and capacity was not always available. Other than a cement factory that meets its own 12 MW requirements, there is little self-generation in Barbados.

### **Business Practices**

Barbados provides tax incentives to manufacturing enterprises, giving full exemption from taxes on profits for 10 years and from duties on machinery, spare parts, and raw materials. It also offers special incentives for foreign service companies wishing to set up operations on the island. Last, investment funds registered with the Central Bank enjoy full repatriation benefits for capital, profit, and dividends.

Except during emergency situations, BL&P has generally used competitive bidding to procure goods and services.

## **Possible Contacts**

### ***Utility Officials***

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### ***Government Officials***

Lloyd Erskine Sandiford, M.P.  
Prime Minister

Phillip M. Greaves, M.P.  
Deputy Prime Minister and Minister  
of Public Works, Communications  
and Transportation, and Leader of the  
House

Senator Anderson Morrison  
Parliamentary Secretary,  
Ministry of Public Works,  
Communications and Transportation

Senator Dr. Carl D. Clarke  
Minister of Trade, Industry, and  
Commerce

Harold A. Blackman, M.P.  
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Ministry of Finance and Economic  
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Antoinette Forte  
Commercial Attache  
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Anthony Newton  
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Brindley Sellia  
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### ***Private Organizations***

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Barbados Chamber of Commerce and  
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# DOMINICA - COUNTRY STATISTICS

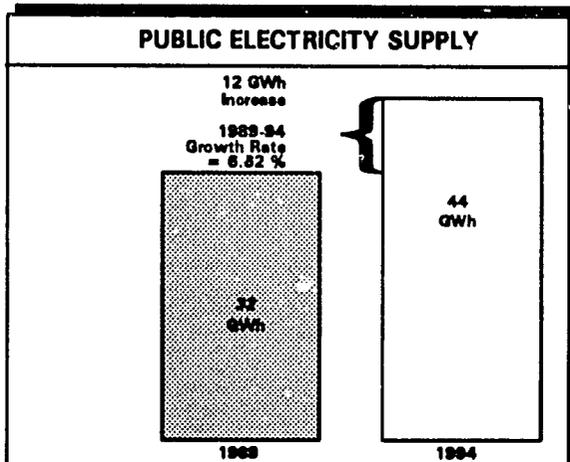
ECONOMIC PROFILE - 1990	
POPULATION	71,183
growth rate	.003 %
GDP	\$52.68 M
growth rate	6.24 %
WAGE RATE	\$1.24-2.25/hr, unskilled labor \$1.24-2.25/hr, skilled labor
GDP/CAPITA	\$659
INFLATION	n/a
EXCHANGE RATE	US \$1.00 = EC \$2.70

TRADE FIGURES - 1990	
EXPORTS = \$55.03 M	
IMPORTS = \$103.93 M	
Major Trading Partners	→ US, UK, CANADA, CARICOM

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1994 (MW)	PRIVATE POWER MARKET 1992-1994 (MW)
HYDRO	3	9	0
OIL	5	7	0
Diesel	(5)	(7)	0
<b>TOTAL</b>	<b>8</b>	<b>15</b>	<b>0</b>

ELECTRIC POWER SYSTEM - 1989	
GROSS GENERATION	32 GWh
ELECTRICITY SALES	27 GWh
industry share	3.7 %
PER CAPITA CONSUMPTION	325 kWh
RATE OF RETURN	15.8 %
SYSTEM FREQUENCY	50 c/s
VOLTAGE	
transmission	n/a
distribution	n/a

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	79.63/bbl
fuel oil	23.17/bbl
HYDROELECTRIC POTENTIAL	0
GEO THERMAL POTENTIAL	0



ELECTRICITY PRICES - 1991	
TOTAL REVENUE/ TOTAL SALES	19.8/kWh
AVERAGE INCREMENTAL COST	16.3/kWh
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	14¢/kWh
Commercial	17¢/kWh
Residential	13¢/kWh

## Commonwealth of Dominica

Agriculture is the mainstay of the Dominican economy, providing over one-third of its GDP. The Commonwealth enjoyed a 6 percent GDP growth rate in 1990. There are no significant sources of renewable energy in Dominica.

### **The Electric Power Sector**

Dominica Electricity Services Limited (DOMLEC) is the sole electric utility in the Commonwealth, supplying service to about 55 percent of the population. Formerly a wholly private utility, about 60 percent of DOMLEC's shares are now held by the government. Under the Electricity Supply Act, DOMLEC is authorized to change its electricity rates with the approval of the Cabinet.

In 1989 DOMLEC generated 32 GWh of electricity, the bulk of which (46 percent) was sold to the residential sector. Its sales growth was a remarkable 11 percent from 1983 to 1987.

DOMLEC's total 1989 generating capacity was 8 MW, 5 MW of which is oil-fired diesel supplied by a number of high-speed generators and the remainder is supplied by two hydroelectric stations, one with 2 x 320 kW units and the other with a 2 x 940 kWh unit. In 1991 a new 2.8 MW hydro station was opened at Laudat.

Its capacity expansion plan calls for the addition of 5 MW of hydroelectric and 2 MW of diesel capacity by 1994. The cost of this expansion is estimated at \$10 million.

DOMLEC's retail tariffs for 1991 were 14 cents/kWh for industrial users, 18 cents/kWh for commercial users, and 13 cents/kWh for residential users.

Despite DOMLEC's reliability problems, its 15.6 percent 1989 rate of return was one of the highest in the Caribbean region (the World Bank, however, projects that this rate will drop to less than 6 percent in the 1990s). Because the utility's average revenue was over 19 cents/kWh in 1991, it did not have to rely on government subsidies.

### **Private Power Opportunities**

At present, there are no private power generators selling power to DOMLEC, although the country's largest industry, Caribbean Coconut, generates a significant portion of its own electricity.

While Dominica would likely consider the concept of private power generation, especially as its dated diesel capacity is replaced, its new hydroelectric capacity has temporarily solved its supply problems. Thus, there will be no significant private power opportunities in this country before 1995.

### **Business Practices**

Dominica's government provides a variety of trade and investment incentives, including tax holidays, import duty exemptions, repatriation of profits, and alien landholding permits.

Except during emergency situations, DOMLEC has generally used competitive bidding to procure goods and services. There are no significant domestic sources of financing for private power purchases.

### **Possible Contacts**

#### **Utility Officials**

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#### **Government Officials**

Sir Clarence Augustus Seignoret  
President  
Dame Mary Eugenia Charles  
Prime Minister for Finance and Economic  
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The Honorable Alleyne John Carbon  
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#### **Private Organizations**

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## Guyana

During the 1980s, Guyana witnessed a decrease in its GDP growth (its GDP fell by 3 percent in 1990), a deterioration of its infrastructure (including its electric system), and an almost complete halt in local and foreign investment. Guyana's President Hoyte, however, is committed to eliminating the mismanagement of the previous administration. He has created a free market in foreign exchange, is reducing the government's role in the economy and promoting foreign investment, and is intending to restore Guyana's credit by repaying its arrears to international financial institutions.

Another key element of his reforms is the sale of many government-owned businesses. In mid-1991 the government completed the privatization of the telephone company and sold its assets in timber, rice, and fisheries. It is also continuing negotiations to sell its bauxite, sugar, and electric companies.

Guyana has extensive renewable energy resources. Its hydroelectric potential is estimated at 4,484 MW. Among the proposed locations are Tiger Hill, which ALCOA had studied as a potential site during the 1950s to serve the mine at Linden. The 750 MW Upper Mazaruni project, located near the Venezuelan border far from Guyana's demand centers, was strongly promoted by the previous administration. International financing for this project is unlikely as a result of Venezuela's objection to the exploitation of resources in the portion of Guyana it continues to claim.

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### **The Electric Power Sector**

The Demerara Electric Company, a local private firm, was the main electricity generating facility in Guyana before 1960. In 1966, however, the government-owned Guyana Electric Corporation (GEC) acquired Demerara and has dominated the electricity sector since then. Although GEC is mandated to supply the entire country with electricity, the Guyana Mining Enterprise provides power to the city of Linden, and remote rice and lumber mills supply power to neighboring villages. The mills supplement their petroleum fuels with bagasse and rice husks, respectively. Together, these generators have about 200 MW of installed capacity.

GEC operates under the management umbrella of the Guyana State Corporation, which is a government corporation. The Deputy Prime Minister

# GUYANA - COUNTRY STATISTICS

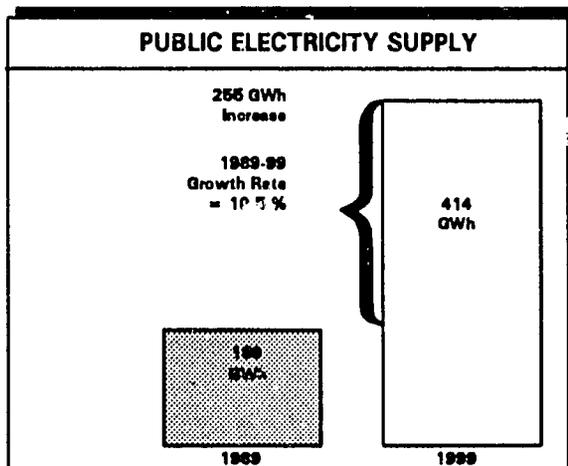
ECONOMIC PROFILE - 1990	
POPULATION	710,000
growth rate	-0 %
GDP	\$323 M
growth rate	-3.0 %
WAGE RATE	n/a
GDP/CAPITA	\$420
INFLATION	35 %
EXCHANGE RATE	US \$1.00 = G \$33.00

TRADE FIGURES - 1990	
EXPORTS = \$215 M	
bauxite, sugar, rice, shrimp gold, molasses, timber, rum.	
IMPORTS = \$216 M	
Major Trading Partners	→ US, US, CANADA, CARICOM

GENERATION CAPACITY AND POTENTIAL PRIVATE POWER MARKET			
	1989 (MW)	1999 (MW)	PRIVATE POWER MARKET 1992-1999 (MW)
HYDRO	0	0	0
GEO THERMAL	0	0	0
OIL	96	96	0
steam	(30)	(20)	(0)
diesel	(66)	(76)	(0)
<b>TOTAL</b>	<b>96</b>	<b>96</b>	<b>0</b>

ELECTRIC POWER SYSTEM - 1988	
GROSS GENERATION	159 GWh
ELECTRICITY SALES	122 GWh
industry share	28 %
PER CAPITA CONSUMPTION	162 kWh
RATE OF RETURN	-81.2 %
SYSTEM FREQUENCY	50 c/s in Georgetown 60 c/s elsewhere
VOLTAGE	
transmission	69 kV
distribution	13.8/11 kV

ENERGY RESOURCES - 1990	
FOSSIL FUEL PRICES	US \$/bbl
diesel oil	50.59/bbl
fuel oil	39.25/bbl
HYDROELECTRIC POTENTIAL	4,484 MW
GEO THERMAL POTENTIAL	n/a



ELECTRICITY PRICES - 1990	
TOTAL REVENUE/ TOTAL SALES	8.90/kWh
AVERAGE INCREMENTAL COST	23.40/kWh
TARIFF BY CONSUMER CLASSIFICATION	
Industrial	8.65/kWh
Commercial	12.24/kWh
Residential	7.06/kWh

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within the Ministry of Public Works, Communications, and Regional Development has responsibility for policy affecting GEC and for supervising, controlling, and regulating the operations of GEC.

GEC operates one interconnected system and three isolated systems. The interconnected system forms the National Grid System, which provides electricity in both urban and rural areas along the coast and up the rivers in Demerara and Berbice. The isolated systems supply electricity to Anna Regina, Wakenaam and Bartica, all in the Essequibo area.

Between 1988 and 1989, GEC's sales declined by about a third, to 122 GWh, largely because of a lack of available capacity. About 52 percent of its sales are to residential customers, 20 percent to commercial customers, and 28 percent to industry.

GEC has 96 MW of oil-fired diesel and steam capacity. (Guyana's substantial hydropower potential resources have not been developed for lack of finances and political reasons.) A large part of its Demerara system's capacity, however, is not in working order. GEC intends to add a net of 2 MW of capacity by 1991, retiring 10 MW of steam units and adding a 12 MW diesel unit. GEC estimates that \$100 million must be spent on new capacity and the substantial rehabilitation and replacement of existing capacity. Its plans to interconnect the Georgetown and Berbice systems have been delayed because of the utility's poor financial condition. The Inter-American Development Bank (IDB) is funding the rehabilitation of the Kingston power station in Georgetown.

The tariff GEC charges to its commercial customers is 12.24 cents/kWh, while its industrial tariff is 35 cents/kWh and its residential tariff is 7.06 cents/kWh.

The utility has experienced dramatic and numerous technical and financial problems. Its systems operate at different frequencies, which makes interconnection difficult. GEC has been unable to pay its debt and has relied heavily on government contributions in the last decade. Its rate of return on assets has been negative since 1978, and its average revenue in 1991 was 8.90 cents/kWh, against an incremental cost of 23.4 cents/kWh.

### **Private Power Potential**

Guyana's current positive attitude toward privatization has made itself felt in the power sector. Negotiations are underway for the sale of all or part of GEC to foreign investors. Leucadia Inc., a U.S. corporation, is in the advanced stages of

these negotiations, as are Alcatel (the phone system), Booker Tate (Guyana Sugar Corporation), and two former owners of bauxite mines. The IDB is also planning to proceed with the rehabilitation of the sugar industry, and has studied the feasibility of generating up to 20 MW for sale to the grid. However, because of the privatization of GEC and the severe economic conditions that plague this nation, no significant third-party private power generation is anticipated for Guyana through 1999.

### **Business Practices**

The Guyanese government plans new legislation to simplify incentives for foreign investors. For approved-status economic activities, these include tax holidays of 10 years, exception from consumption and property tax, accelerated depreciation, and concessions under the Income Tax Act and the Industries Act. At present, it is pursuing double taxation treaties and has concluded one with Canada.

Except during emergencies, GEC has generally used competitive bidding to procure goods and services. The country's business practices will evolve with the more free market policies of the Hoyte government, and more important changes may occur if GEC is sold to foreign investors.

## **Possible Contacts**

### ***Utility Officials***

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### ***Government Officials***

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President

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