

10. Power and Communications

10.1 Electric Power

The electric power sector is dominated by the government-owned Empresa Nacional de Energia Electrica (ENEE) which serves all major cities and towns through the National Interconnected System. Only a few small installations remain to be absorbed in the future.

About 22% of the total population is served by ENEE, mostly in urban areas in the more densely populated regions. The percentage of the population reached in 5 major urban centers is as follows: San Pedro Sula (6), Puerto Cortes (85), Santa Barbara (83), La Ceiba (77), and Tegucigalpa (76). A rural electrification program was undertaken in 1971 and ENEE expects to make electric service available to 37% of the people by 1986. Though power generation grew at an annual average rate of 15.1% between 1967 and 1977, annual net generation per capita remains low (about 176 kWh in 1976) relative to other Central American countries. Most power generated is used by industry.

Total generating capacity of about 191 MW is divided among 7 power plants (2 hydro, 3 diesel and 2 gas turbines) in the main system interconnected by 564 km. of 138 kV and 200 km. of 69 kV lines. An additional 10 MW is installed in several isolated diesel stations. ENEE has been constructing transmission lines to extend the main system to all major cities in Honduras and to link the Honduran system with the Nicaraguan. (The line linking ENEE to the Nicaraguan system will use 230 kV operation.)

Use of the country's large hydroelectric potential, estimated at 4,000 MW with annual production capacity of about 35,000 GWh, is becoming increasingly attractive as the cost of diesel increases. It's role will expand with the recently completed Rio Lindo plant extension (46 MW), the Nispero power project (52.5 MW), and the proposed El Cajon hydropower project, all assisted by World Bank and other donors. The latter, a 292 MW plant to be built on the Humuya river (80 km. SE of San Pedro Sula), will not be completed before 1985. An additional 52.5 MW of diesel units will be needed to meet demand between 1982 and 1985. Investigation of other possible energy sources includes off-shore oil exploration, an evaluation of the potential for geothermal development and use of woodwaste for small steam plants.

ENEE Generating Plant

	<u>Installation Date</u>	<u>No. of Units</u>	<u>Nominal Unit Size MW</u>	<u>Total Capacity MW</u>	<u>Annual Firm Energy GWh</u>	<u>Energy Average GWh</u>
Hydroelectric				122	594 /f	656
Canaveral	1963	2	15	30	151 /f	166
Rio Lindo	1970 (Nos. 1&2)	2	20	46 /d	284 /f	294
	1978 (Nos. 3&4)	2	20	46 /d	159 /f	196
Diesel-Heavy Fuel a/						
La Ceiba	1974	4	6.65	26.6	186	186
Diesel-Light Diesel Oil /b						
Santa Fe	1969	4	2	10	62	62
San Lorenzo	1970	2	2	4	44	44
					18	18
Gas Turbine /c						
La Puerta	1970	1	15	28	73	73
Miraflores	1972	1	13	15	39	39
				13	34	34
Total Interconnected System				190.6	915	977
Isolated Diesel Stations				10.0 /e		

/a Energy at a plant factor of 80%.

/b Energy at a plant factor of 50%.

/c Energy at a plant factor of 30%.

/d Available capacity 15% higher than nominal capacity.

/e Approximate capacity.

/f Primary energy.

ENEE's Electricity Generation

<u>Year</u>	<u>Population (000's)</u>	<u>GDP /a (US\$ million)</u>	<u>ENEE Generation (GWh) /b</u>	<u>Generation /GDP /a (kWh/US\$)</u>	<u>Generation per capita (kWh/person)</u>
1967	2,335	609	153	0.251	66
1969	2,461	659	219	0.332	89
1971	2,593	722	273	0.378	105
1973	2,733	787	361	0.459	132

<u>Year</u>	<u>Population (000's)</u>	<u>GDP /a (US\$ million)</u>	<u>ENEE Genera- tion (GWh) /b</u>	<u>Genera- tion /GDP /a (kWh/US\$)</u>	<u>Genera- tion per capita (kWh/person)</u>
1975	2,881	792	484	0.611	168
1977	3,043	904	622	0.688	204
1979	3,207	1,026	794	0.774	248
1981	3,380	1,131	998	0.882	295
1983	3,563	n.a.	1,262	n.a.	354
1985	3,756	n.a.	1,562	n.a.	416

/a In 1967-1969 constant prices.

/b Includes losses of 12 to 16% of generation.

Source: IMF, IBRD, ENEE, EBASCO, MONENCO as cited in World Bank, Honduras: El Cajon Power Project, February 1980.

10.2 Electricity Requirements

Energy Requirements (in GWh)

<u>Main System</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
<u>Central District</u>	122,407	140,053	158,302	177,845	199,798
Teguicigalpa	116,824	131,427	147,855	166,366	187,128
San Juancito	458	588	647	712	784
Comayagua	1,836	2,111	2,426	2,784	3,194
Siguatepeque	1,518	1,787	2,099	2,462	2,831
Valle de Tamara	891	1,871	1,949	2,027	2,116
San Juan de Flores	25	59	64	68	74
El Zamorano	-	866	1,794	1,858	1,926
Valle de Angeles	226	247	271	296	325
La Paz	444	489	538	591	651
Ajoneque	40	98	106	114	124
Lejamaní	28	68	74	80	86
Valle de San Antonio	93	222	240	259	280
San Sebastian	24	56	61	66	71
Lamaní	-	82	89	96	104
Others	-	82	89	96	104

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
<u>San Pedro Sula District</u>	220,845	285,718	312,003	340,363	375,244
San Pedro Sula	123,937	141,288	161,068	183,617	209,324
Puerto Cortes	9,053	10,139	11,356	12,719	14,245
Mineral El Mochito	46,400	58,600	60,900	63,600	69,350
Cementos Bljao	28,500	48,000	48,000	48,000	48,000
El Progreso	4,749	5,509	6,379	7,374	8,510
Santa Barbara	-	810	891	980	1,079
Lima Nueva, United Fruit Co	7,500	20,590	21,160	21,740	22,320
Santa Rita	-	-	118	363	404
Guanchias	-	-	1,059	1,059	1,059
El Hambu	706	728	749	772	795
Cron	-	54	123	139	158
<u>La Ceiba District</u>	-	31,336	40,783	45,017	49,053
La Ceiba-Municipalidad	-	18,846	22,144	25,442	28,504
La Ceiba-Standard Fruit Co	-	2,850	3,000	3,150	3,300
Tela Municipalidad	-	2,462	2,784	3,130	3,514
Tela Nuevo-United Fruit Co	-	6,813	12,180	12,570	12,970
La Masica_San Francisco	-	365	675	725	765
<u>Choluteca District</u>	-	-	-	22,990	26,220
Choluteca	-	-	-	13,806	16,208
San Lorenzo	-	-	-	6,512	7,145
Nacaome	-	-	-	923	987
Pespire	-	-	-	253	278
El Triunfo	-	-	-	125	141
Yusguare	-	-	-	59	65
Namasigue	-	-	-	67	76
Marcovia	-	-	-	115	132
El Corpus	-	-	-	54	59
Langué	-	-	-	112	124
Goancoria	-	-	-	58	63
Ingenio Las Piletas	-	-	-	906	942
Total Main System	343,252	457,107	511,088	586,215	650,315

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
<u>To Be Interconnected</u>	17,233	16,833	19,733	-	-
Santa Barbara	737	-	-	-	-
La Ceiba-Municipalidad	-	-	-	-	-
La Ceiba-Standard Fruit Co	-	-	-	-	-
Tela Municipalidad	2,200	-	-	-	-
Choluteca	8,446	9,966	11,740	-	-
San Lorenzo	4,907	5,397	5,931	-	-
Nacaome	753	805	861	-	-
Pespire	109	209	230	-	-
Marcovia	-	44	100	-	-
Ingenio Las Piletas	-	412	871	-	-
<u>Other Systems</u>	7,591	8,940	9,918	11,018	12,255
Trujillo	573	608	645	687	729
Ocatepeque	524	556	589	624	661
Santa Rosa de Copan	1,514	1,590	1,669	1,753	1,840
Juticalpa	1,320	1,518	1,742	1,997	2,284
Danli	1,328	1,567	1,846	2,171	2,549
Marcala	260	273	287	301	316
La Esperanza	379	435	500	573	655
El Paraiso	1,011	1,162	1,334	1,529	1,749
Catacamas	353	634	671	708	752
Amapala	294	315	336	360	386
San Marcos de Colon	35	282	299	315	334
Total - Isolated Systems	24,824	25,773	29,651	11,018	12,255
General Total	368,076	482,880	540,739	597,233	662,570

10.3 Radio Network

In 1978 there were 173,000 radio receivers in the country and 110 stations: 36 in Tegucigalpa, 29 in San Pedro Sula, 14 in La Ceiba, 9 in Choluteca, and 22 in other towns.

Empresa Hondurena de Telecomunicaciones (Hondutel): Tegucigalpa, D.C.

Radio America: Apdo. 259, Tegucigalpa, D.C.

Radio Eco: San Pedro Sula.

Radio Honduras: official station, operated by the Government.

La Voz de Atlantida: La Ceiba.

La Voz de Honduras: Apdo. 642, Tegucigalpa, D.C.

La Voz del Junco: Calle Independencia, Sta. Barbara.

Two-way Radios

Locations by department. Source: Peace Corps Emergency Handbook.

Francisco Morazan

- | | |
|----------------|--|
| 1. Tegucigalpa | SAHSA, COHDEFOR, Caminos, Red Cross, FASP, Alas de Socorro, CARITAS, Rosario Mining Co, Banco Atlantida, Public Health, CARE |
|----------------|--|

Atlantida

- | | |
|-------------|--|
| 1. La Ceiba | SAHSA, Caminos, Red Cross, CARITAS, Banco Atlantida, Public Health |
| 2. Tela | SAHSA, Red Cross, CARITAS, Banco Atlantida |

Colon

- | | |
|--------------|--|
| 1. Trujillo | SAHSA, Alas de Socorro, CARITAS, Banco Atlantida |
| 2. Tocoa | SAHSA, Caminos, Alas de Socorro, CARE, Public Health |
| 3. Sonaguera | CARITAS |

Comayagua

- | | |
|-----------------|---|
| 1. Comayagua | COHDEFOR, Caminos, Red Cross, Banco Atlantida |
| 2. Siguatepeque | COHDEFOR, Alas de Socorro, Banco Atlantida |

Copan

- | | |
|------------------------|--|
| 1. Santa Rosa de Copan | COHDEFOR, Caminos, Red Cross, Banco Atlantida, Public Health Copan |
| 2. Ruinas de Copan | SAHSA, Red Cross |
| 3. Santa Rita | Red Cross |

Cortes

- | | |
|-------------------|--|
| 1. San Pedro Sula | SAHSA, COHDEFOR, Caminos, Red Cross, Banco Atlantida, FASP, CARITAS, CARE, Public Health |
| 2. OMOA | Red Cross |
| 3. Puerto Cortes | Red Cross, Banco Atlantida |
| 4. Choloma | Red Cross |
| 5. La Lima | Red Cross |

Choluteca

- | | |
|--------------|-------------------------------------|
| 1. Choluteca | Caminos, Red Cross, Banco Atlantida |
|--------------|-------------------------------------|

El Paraiso

- | | |
|---------------|--------------------------------------|
| 1. Danli | COHDEFOR, Red Cross, Banco Atlantida |
| 2. El Paraiso | Banco Atlantida |

Gracias a Dios

- | | |
|-------------------|-----------------|
| 1. Puerto Lempira | CARITAS |
| 2. Brus Laguna | Alas de Socorro |
| 3. Ahuas | Alas de Socorro |

Intibuca

None

Islas de la Bahía

- | | |
|------------|------------------------|
| 1. Roatan | SAHSA |
| 2. Guanaja | SAHSA, Banco Atlantida |
| 3. Utila | SAHSA |

La Paz

- | | |
|-----------|-----------------|
| 1. La Paz | Banco Atlantida |
|-----------|-----------------|

Lempira

None

Ocotepeque

- | | |
|---------------------|-----------|
| 1. Nueva Ocotepeque | Red Cross |
|---------------------|-----------|

Olancho

- | | |
|----------------|--|
| 1. Juticalpa | SAHSA, COHDEFOR, Banco Atlantida,
Public Health |
| 2. Catacamas | SAHSA, Banco Atlantida |
| 3. La Union | SAHSA |
| 4. San Esteban | SAHSA |
| 5. Galerias | Caminos |
| 6. Carta | Codefor |

Santa Barbara

- | | |
|------------------|--------------------------------|
| 1. Santa Barbara | Banco Atlantida, Public Health |
| 2. El Mochito | Rosario Mining Co. |
| 3. San Marcos | Banco Atlantida |

Valle

- | | |
|----------------|----------------------------|
| 1. Nacaome | Red Cross |
| 2. San Lorenzo | Red Cross, Banco Atlantida |
| 3. Langue | Red Cross |
| 4. Goascoran | Red Cross |
| 5. El Amatillo | Red Cross |

Yoro

- | | |
|----------------|--|
| 1. Yoro | COHDEFOR, Banco Atlantida, Public Health |
| 2. El Progreso | Banco Atlantida, Red Cross |
| 3. San Lorenzo | Banco Atlantida |
| 4. Olanchito | SAHSA, Rosario Mining Co., Banco Atlantida |
| 5. Victoria | SAHSA |
| 6. Sulaco | Caminos |

Ham Operators

A list of in-country ham operators is provided in the mission plan; since it was originally compiled in 1972 (Annual Listing of Federation of Affiliated Radio Clubs of Central America and Panama), it is not included in this profile.

10.4 Telephone System

Telecommunications "improved, but still inadequate," (CIA Factbook). 100 telephone-telegraph offices, 230 telegraph offices, and 50 telephone offices owned and operated by the government. Multiplex radio relay with 34 telephone channels and 36 teleprinter circuits links Tegucigalpa and San Pedro Sula. Connection into Central American Microwave network, Tropical Radio-Telegraph Co., and All American Cables and Radio provide international radio-telegraph and radio telephone service. External connections are usually good; internal communications, particularly for San Pedro Sula (as of mid-1976), are often poor. Telephone system is now (1976-78) being updated.

10.5 Television Stations

Compania Television Hondurena, S.A.: Apdo. 734, Tegucigalpa; D.C.; four relay stations; transmissions began in 1959.

Telesistema Hondureno S.A.: Apdo. 734, Tegucigalpa; one relay station. In 1977 there were 50,000 sets.