

PUBLIC

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**COLOMBIA**

**LOAN TO THE INSTITUTO COLOMBIANO DE ENERGÍA ELÉCTRICA  
FOR A RURAL ELECTRIFICATION PROJECT**

**(CO0160; 608/SF-CO)**

**LOAN PROPOSAL**

**1979**

C O L O M B I A

RURAL ELECTRIFICATION PROJECT

(CO-0160)

Table of Contents

Basic Economic Data

Loan Proposal

Appendix I - Proposed Resolution

Appendix II - Recommendations

Appendix III - The Project (Annex A to Loan Contract)

Datos Socioeconómicos Básicos de Colombia

1. Datos Generales

Población total (millones de habitantes, 1978)	25,5
Población rural %	28,7
Extensión territorial (miles de Km2)	1.138,3
Habitantes por Km2	22
Tasa de natalidad (1976) %	26,1
Tasa de crecimiento demográfico (promedio 1970-78) %	2,7
Producto interno bruto por habitante 1978 (US\$ de 1976)	637,1
Tasa de mortalidad por mil habitantes (1976)	7,4
Tasa de mortalidad infantil por mil nacidos vivos (1976)	59,6
Médicos por 10.000 habitantes (1977)	5,1
Número de camas de hospital por cada mil habitantes (1976)	1,8
Alfabetismo (1974)	77,6
Tasa de inscripción (%) 1/ (1977)	
Primaria	71,2
Secundaria	58,1
Tasa de cambio (Abril 1979) US\$ 1 = Col. \$ 42.43	

Tenencia de la tierra en %:

Tamaño (has.)	Nº de Explotaciones		Superficie	
	1960	1970/71	1960	1970/71
Menos de 10	76,5	73,1	8,7	7,2
de 10 a 100	20,0	22,5	25,2	25,3
mas de 100	3,5	4,4	66,1	67,5
Total	100,0	100,0	100,0	100,0

Consumo de energía per cápita (1976) Kwh 403,3

Población Económicamente Activa por Sectores (1973):

	<u>En miles</u>	<u>%</u>
Total	5.975	100,0
Agricultura y pesca	2.163	36,2
Minería	43	0,7
Manufactura	964	16,1
Construcción	289	4,8
Comercio, finanzas y seguros	938	15,7
Servicios	1.153	19,3
Otros	425	7,2
Tasa de desempleo (Setiembre 1978)		8,1

1/ Matrícula total/población en grupo de edad elegible.

2. Producto Interno Bruto por Gasto 1/ ( a precios de mercado )	Composición (%) 2/				Tasa Real de Crecimiento Anual (%) 2.				
	1970	1974	1976	1977	1971-73	1974	1975	1976	1977
PIB a precios de mercado	100,0	100,0	100,0	100,0	5,9	6,0	3,8	4,6	4,8
Inversión interna bruta	22,0	21,1	19,3	17,1	-7,2	32,8	-17,4	20,1	-7,1
Consumo	79,6	82,0	81,2	85,8	8,3	4,9	3,3	4,1	10,7
Exportaciones	14,2	11,2	12,3	10,7	3,0	-6,1	29,8	-8,3	-8,7
Importaciones	15,8	14,3	12,8	13,6	-1,4	22,6	-9,8	7,9	10,8

Por Origen (aprecios de mercado)

Agricultura	26,3	24,7	24,6	24,0	5,9	6,2	5,9	2,1	2,3
Minería	2,0	1,4	1,2	1,1	-2,3	-7,0	-5,5	-1,9	-3,9
Manufactura	18,6	19,5	19,4	19,3	9,1	5,6	0,7	7,1	4,1
Construcción	5,0	4,9	3,7	3,7	6,9	3,9	-4,3	-14,2	5,7
Transporte	6,8	7,3	7,8	8,1	8,6	10,8	7,2	9,0	8,8
Comercio	17,2	17,2	17,0	17,1	7,7	5,0	1,3	6,3	5,5
Gobierno	6,4	6,4	6,2	6,1	9,0	2,3	3,8	1,6	3,7
Otros	17,7	18,6	20,1	20,6					

/ Fuente: I.Banco de la República.  
/ A precios constantes de 1970.  
/ Estimación preliminar.

3. Comercio Exterior 1/	(en millones de US\$)					Tasas de Crecimiento Anual				
	1970	1974	1975	1976	1977	1971-73	1974	1975	1976	1977
<b>Exportaciones de Bienes (FOB)</b>	673,7	1.415,6	1.445,3	1.773,7	2.158,2	22,1	20,9	1,9	22,7	21,7
Café	461,0	623,1	680,5	996,0	1.391,5	11,0	4,6	9,2	42,0	39,7
Algodón	34,7	86,8	82,9	92,1	113,2	8,8	118,1	-4,5	12,2	22,9
Banano	17,1	27,7	38,8	41,2	51,2	9,6	25,9	40,1	6,2	24,3
Textiles	20,5	184,1	103,7	133,4	128,7	75,8	80,5	-43,7	28,6	-35,2
Cueros	6,9	16,2	17,7	23,5	31,4	84,2	-46,4	9,3	32,8	33,6
Metal mecánica	5,5	32,5	21,0	27,7	34,0	75,2	17,3	-35,4	31,9	22,7
Otros	128,0	445,2	500,7	459,8	408,2	25,6	22,8	12,5	-8,7	-11,2
<b>Importaciones de Bienes (CIF)</b>	930,1	1.788,5	1.502,6	1.990,7	2.665,8	11,5	38,8	-16,0	32,5	33,9
Productos de consumo	101,3	190,9	152,0	204,5	379,6	26,0	4,5	-20,4	34,5	85,6
Productos intermedios	403,4	991,3	723,3	975,0	1.369,2	13,9	75,2	-27,0	34,8	40,4
Bienes y equipos de capital	405,7	586,2	611,3	806,2	912,0	4,7	31,3	4,3	31,9	13,1
Combustibles	1,3	6,8	29,6	154,9	251,1	118,5	172,0	335,3	523,3	62,1
Sin clasificar	19,7	20,1	16,0	5,0	5,0	20,6	-34,3	-20,4	-68,7	

Fuente: INCOMEX. (Registros)  
Estimación preliminar al 22 de diciembre de 1978

Balanza de Pagos 1/	(en millones de US\$)					Tasas de Crecimiento			
	1970	1974	1975	1976	1977	1974	1975	1976	1977
Exportaciones (FOB)	754,0	1.495,0	1.717,0	2.243,0	2.786,0	18,4	14,8	30,6	24,0
Importaciones (FOB)	-903,0	-1.511,0	-1.424,0	-1.665,0	-2.047,0	53,8	-5,7	17,0	22,0
Servicios (neto)	-340,0	-386,0	-445,0	-431,0	-378,0	-4,4	15,3	-3,2	-12,0
Transferencias	34,0	51,0	44,0	60,0	69,0	45,7	-13,7	36,4	15,0
Saldo en cuenta corriente	-454,0	-350,0	-109,0	207,0	430,0				
Movimiento de capitales (neto)	435,0	259,0	175,0	420,0	146,0				
A largo plazo	195,0	229,0	295,0	104,0	26,0				
Público	87,0	75,0	148,0	-5,0	-15,0				
Privado	40,0	35,0	35,2	13,9	42,0				
Otros	67,0	119,0	112,0	95,0	-1,0				
A corto plazo 2/	240,0	30,0	-120,0	316,0	120,0				
Sector monetario	17,0	-	29,0	12,0	11,0				
Cambios reservas internacio- nales netas (- aumento)	2,0	91,0	-95,0	-638,0	-586,0				
Reservas internacionales	203,0	449,0	521,0	1.158,0	1.821,0				

Fuente: Fondo Monetario Internacional.  
Incluye errores y omisiones.

Finanzas Públicas	En % del PIB								
	Gobierno Central 1/					Sector Público 2/			
	1971	1974	1976	1977	1978	1971-73	1974	1976	1977
Ingresos corrientes	9,4	8,0	9,1	8,8	9,0	19,5	20,8	17,4	n.d.
Ingresos tributarios	(9,4)	(7,6)	(8,9)	(8,7)	(8,8)				
Gastos corrientes	6,7	4,7	6,0	5,8	6,1	14,8	14,9	10,2	
Ahorro en cuenta corriente	2,7	3,4	3,1	3,1	2,9	4,7	5,9	7,2	
Gasto de capital	3,9	4,2	2,3	2,3	2,3	8,5	9,2	7,8	
Déficit (-) superávit (+)	-1,2	-0,8	0,8	0,8	0,6	-3,8	-3,3	-0,6	
Financiamiento	1,2	0,8	-0,8	-0,8	-0,6	3,8	3,3	0,6	
Interno	0,3	0,7	-0,5	-0,6	-0,4	1,4	1,4	0,3	
Externo	0,9	0,1	-0,2	-0,2	0,2	2,4	1,9	0,3	

Fuente: Banco de la República.

Fuente: Departamento Nacional de Planeación.

6. Sistema Bancario Nacional 1/	1974	1975	1976	1977	1978 2/	Tasa de Crecimiento			
						1975	1976	1977	1978 3/
				(millones de pesos)					
Reservas internacionales netas	-2.679	1.003	20.135	54.133	63.964				
Autoridad monetaria	11.167	16.418	40.804	69.526	80.473	47,0	148,5	70,4	35,2
Bancos comerciales	-13.846	-15.415	-20.669	-15.393	16.509	-11,4	-34,1	25,5	-4,9
Crédito interno total	83.297	103.287	124.906	160.612	169.170	24,0	21,0	28,6	26,5
Gobierno (neto)	9.534	11.440	8.594	6.528	4.507	20,0	-24,9	-25,0	-37,43
Entidades de fomento	3.631	4.663	7.066	11.730	12.167	28,4	51,5	66,0	44,2
Sector privado	70.132	87.184	109.246	142.354	152.496	24,3	25,3	30,3	29,2
Crédito del Banco de la República	33.197	38.763	37.376	56.685	63.731	15,8	-3,6	51,7	12,4
Gobierno (neto)	7.634	9.771	6.363	4.057	684	28,0	-34,9	-36,2	
Bancos comerciales	7.980	8.071	7.407	13.934	13.391	1,1	-4,2	88,1	3,9
Entidades de fomento	16.178	18.985	20.641	35.308	46.027	17,3	8,7	71,0	30,3
Sector privado	1.771	2.184	2.976	3.659	4.413	23,3	36,3	27,9	20,6
Medios de pago (oferta monetaria)	46.113	58.915	79.383	103.451	134.880	27,8	34,7	30,3	30,4
(% del PIB)	12,9	12,0	12,7	12,3	-				
Quasi-dinero	20.592	31.231	45.933	61.161	84.999	51,7	46,8	33,1	39,0
(% del PIB)	5,0	6,3	7,1	7,2					

1/ Banco de la República y bancos comerciales.

2/ Saldo a julio

3/ Tasa de crecimiento a diciembre 30

Fuente: Banco de la República.

7. Precios (tasa de crecimiento)	1974	1975	1976	1977	1978	1979
Deflactor del PIB	27,6	20,8	3,6	28,1		
Al consumidor (empleados) 1/	25,2	17,5	25,4	27,5	19,7	13,0 2/
Al por mayor	36,0	25,4	22,9	26,7	17,6	15,0 2/

1/ Tasa de diciembre a diciembre de cada año.

2/ Mayo a diciembre año anterior.

Fuente: Banco de la República

8. Deuda Pública Externa Pagadera en Divisas	1970	1971	Contratada a Final del Año			
			1974	1975	1976	1977
			(en millones de US\$)			
Total	1.852	2.747	2.769	2.968	3.232	3.641
Desembolsada	1.250	1.936	2.117	2.361	2.559	2.622
Sin desembolsar	602	811	652	627	673	1.019
Por tipo de acreedor						
Proveedores	210	203	212	247	216	221
Bancos privados	72	328	283	426	553	605
Emisión de bonos	21	57	54	52	49	48
Organismos internacionales	717	1.113	1.152	1.190	1.247	1.597
BID	(119)	(220)	(281)	(267)	(279)	(354)
Gobiernos	776	1.006	1.029	1.038	1.136	1.159
Otros	56	40	40	35	31	11

Fuente: Banco Mundial

		<u>Contratada a Final del Año (%)</u>			
		<u>1970</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Por vencimiento:	1 a 4 años	24,1	31,0	27,9	29,3
	5 a 9 años	22,5	24,4	27,9	27,1
	10 años y más	53,4	44,6	44,2	43,6
<u>Servicio de la Deuda</u>		<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1976</u>
					<u>1977</u>
Servicio total (en millones US\$)		153,9	208,6	308,6	274,6
Serv./exp. de bienes y servicios (%)		12,5	13,1	15,8	9,5
<u>Préstamos del BID (Aprobados hasta 3/79)</u>					
Total (millones de US\$)		1.110,7			
Capital ordinario		424,3			
Capital interregional		159,5			
FOE		461,8			
FFPS		49,0			
Otros fondos		16,1			
Por sector (%)					
Agrícola		13,3			
Industrial		5,5			
Transportes		18,3			
Energía		37,1			
Educación y ciencia y tecnología		2,5			
Vivienda y obras urbanas		10,8			
Salud		9,5			
Preinversión		3,0			

Rev. 21-V-79

3-X-79

COLOMBIA  
RURAL ELECTRIFICATION PROJECT

(CO-0160)

LOAN PROPOSAL

I. THE PROJECT

A. Frame of Reference

- 1.01 In the first half of 1979 the Colombian economy continued its highly satisfactory performance of the previous year, in which the gross domestic product grew at one of the highest rates recorded in the last two decades.
- 1.02 In 1978 the rate of increase in the gross domestic product was 8.1%, compared with 4.7% in 1977 and an average of 4.2% per year in 1974-1976. Coffee exports in 1978 accounted for 20% of national government tax receipts and generated a considerable proportion of rural employment.
- 1.03 Despite the increases in tax collections, the government is maintaining a policy of austerity for spending. During the first four months of this year total collections showed a 35.7% increase over the same period of last year, while operating expenses registered a 38.5% increase and capital expenditures a decline of 11%. Should these trends continue, a significant surplus may be anticipated at the end of the year.
- 1.04 In 1978, the manufacturing industry registered one of the highest activity indices in recent years, growing at a rate of 8.9%.
- 1.05 The agricultural product, with a real growth rate of 6.8%, showed a dynamic growth in 1978 that extended to virtually all lines of production. This contrasted with the experience during 1974-1977 when the product expanded at an average yearly rate of only 3.4%, mainly as a result of unfavorable weather conditions in 1976. The agriculture and livestock sector continues to be the most important in the Colombian economy. It employs approximately 30% of the economically active population and generates close to 70% of total export earnings.
- 1.06 In 1978, mining production, of limited significance within the GDP, dropped by 4%. The only major increase in the sector was a 21% rise in the production of gas during the first nine months of the year.
- 1.07 Other productive sectors also expanded in 1978, including construction, transportation and commerce.
- 1.08 Inflation as measured by the consumer price index for the white-collar class declined in 1978 to 19.7% from the 27.5% in 1977. The legal daily minimum wage, after having been adjusted four times between January 1977



and May 1978, was raised to Col\$115 effective January 1, 1979, which represents a 33.7% increase over the May 1978 level and which, compared with the rate of inflation, reflects a recovery of real wages. From the first quarter of 1976 through the third quarter of 1977 the real wage index had shown a persistent decline.

- 1.09 The value of exports in current terms, which increased in 1978 by 29%, compared to a 23% average yearly increase during 1975-1976, continued to reflect a firm upward trend in 1978.
- 1.10 International reserves increased by US\$436 million between December 1978 and the end of May 1979, when the total amounted to approximately US\$2.8 billion.
- 1.11 The government plans to orient its action toward the following goals: (a) connecting the areas of influence of the country's various development poles by means of a network of transportation communications systems; (b) fostering the expansion of those development poles and stimulating economic and regional decentralization through new investments outside the existing centers; (c) intensive development of the country's energy resources; and (d) encouraging greater mobilization of currently underutilized sources of domestic financing in order to provide counterpart funds in support of external credit.
- 1.12 Colombia's electricity sector has developed rapidly in recent years. Installed generating capacity rose from 1,681 MW in 1966 to about 4,000 MW in 1978, an average yearly growth rate of approximately 9%. Seventy-two percent of the installed capacity at the end of 1978 was hydroelectric and 28% thermoelectric, the average rate of per capita consumption per year being 655 KWh. In Colombia, public-sector companies owned by the central government, departments and municipalities are responsible for the generation, transmission and supply of electricity. The principal sources of financing for the Colombian electric sector have been the World Bank and the IDB, with loans totaling US\$604.3 million and US\$426.1 million, respectively.
- 1.13 With a total population estimated at 25.5 million, per capita installed capacity at the end of 1978 was only 160 watts, a lower level than that for other Latin American countries at a similar stage of development. The systems in operation provide electricity to an estimated two million houses, representing a national coverage of 54%. In the urban sectors overall coverage is 84% and in the rural areas 13%.
- 1.14 The 1979-1982 electric sector development program currently being considered by the national government identifies the extension of service to under-served areas, urban as well as rural, as a high-priority objective within the process of meeting energy requirements in the short, medium and long run.

- 1.15 The targets of the program pertaining to satisfaction of energy requirements include basically: (a) raising the national coverage from the present 54% to 67% by 1982 and increasing the coverage in rural areas from 13% to 27% over the same period; and (b) increasing energy consumption per capita from 655 KWh/inhabitants (1978 figure) to 965 KWh/inhabitants by 1982. In the longer term, the goal is to achieve a total generating capacity of approximately 10,630 MW by 1988, with 81% from hydroelectric sources and 19% from thermoelectric sources. This expansion entails average growth rate of 12% a year during 1979-1982 and 9% a year during 1983-1988.
- 1.16 Colombia's rural areas had a population of approximately 9.4 million in 1975. Emigration in search of better employment opportunities has limited demographic growth in the rural areas. This explains why even though the rural population increased by slightly more than two million from 1951 to 1973, in relative terms its growth was less than that of the urban population. The rural population accounted for 61% of the country's total population in 1951 but dropped to 39% of the total in 1973 and 28.7% in 1978.
- 1.17 Colombia's countryside is characterized by a combination of entrepreneurial commercial farming operations, and traditional agriculture operated in a rudimentary way by very-low-income campesinos. There is a high concentration of land ownership, with 30.5% of the cultivated area in farms with an area of 1,000 hectares or more, which account for only 0.3% of the total number of farms. There is unemployment and underemployment as well as an uneven distribution of income. The ratio of wages in the agricultural sector to the value added by the sector dropped from 38% in 1950 to 21% in 1976.
- 1.18 Annual per capita income in the project area is Col\$9,666, and the average value of assets per housing unit is Col\$202,568. 89.8% of the prospective beneficiaries of the proposed project have incomes averaging less than Col\$25,000 a year. The number of family members is estimated at 4.67 per household, and the total number of residents per house, including the family members, at 6.35. Farming is the main occupation of the head of the family. Farming is essentially done on small family plots. A portion of what is grown is sold and a portion is used for family consumption. 1/

**B. Purposes and Description**

- 1.19 The specific purpose of the project is to supply electric power to approximately 130,000 rural houses for the benefit of approximately

---

1/ The figures in Colombian pesos in this paragraph and section B below are expressed in September 1979 prices and are equivalent, in US\$, to the following figures: Col\$9,666 = US\$226; Col\$202,568 = US\$4,743; Col\$25,000 = US\$585; Col\$15,000 = US\$350; Col\$500,000 = US\$11,702. US dollars were converted at the rate of Col\$42.71 per US\$1.00.

800,000 people, at least 80% of whom would be people who have a yearly income not exceeding Col.\$25,000, or who live in houses where the total assets of the occupants do not exceed Col\$500,000, and whose maximum demand for electricity does not exceed 2.5 Kv per house. The charge to these beneficiaries for connection to the system would be only 28% of the cost per house of the respective electric system.

- 1.20 The project would increase the coverage of electric power service in the country's rural areas from the present 13% to approximately 22%. Thus, this would contribute to the improvement of the living conditions of low-income people in the rural areas, would replace the consumption of other energy resources by electric energy which is cheaper for the users and would facilitate the introduction of various services to the people of the rural area.
- 1.21 The project would be carried out in rural areas situated in 15 of the 22 departments, all five intendencias and five of the six commissariats into which the country is divided. The project's area of influence would measure some 80,000 square kilometers.
- 1.22 Beneficiaries who have incomes or assets exceeding those indicated or who would require satisfying an energy demand greater than that stated above: (a) will not exceed 20% of the total users; and (b) would be connected to the systems built by making payments that would range from 30% to 100% of the cost per home of the electric system, according to their income, net worth or electric demand (Appendix III, paragraph 4.02).
- 1.23 The financing required to do all of the works of the project would be completed from the US\$27,000,000 contributed by low-income beneficiaries for connection to the service by paying 18% of the cost per home of the respective systems. The resources from connection payments exceeding the amount indicated will be applied to electrification of homes in addition to the 130,000 indicated as the project's goal. The same selection criteria used in the execution of the proposed project will be used in determining the works for the investment of the latter resources (Appendix III, paragraph 4.03).
- 1.24 The works to be executed are construction of about 20,800 kms. of primary and secondary lines and approximately 75 compact 34.5/13.2 Kv substations, installation of approximately 9,300 distribution transformers and the provision of inside installations in the houses connected. The primary and secondary lines include approximately 300 kilometers at 34.5 Kv., 7,900 kilometers at 13.2 Kv and 12,600 kilometers of low-voltage lines.

C. Borrower and Executing Agency

- 1.25 The borrower will be the Instituto Colombiano de Energía Eléctrica (ICEL).

- 1.26 The project would be executed by ICEL through 11 of its affiliated electrification companies, the Corporación Autónoma Regional del Cauca (CVC) and the Departamento de Intendencias y Comisarías (DAINCO). The activities and works to be carried out by each of these regional entities would together constitute a subproject (Appendix III, paragraph 2.02).

## II. COST AND FINANCING

### A. Project Cost

- 2.01 Following is a breakdown of the estimated project costs and its financing, with an indication of the amount and currencies of the proposed loan and of how the proceeds of the loan and those of the local contribution would be invested:

	PROJECT FINANCING					
	PROJECT COST		Bank Loan			
	<u>Amount</u>	<u>%</u>	<u>Total</u>	<u>Foreign currencies</u>	<u>Local currency</u>	<u>Local counterpart 1/</u>
<u>Engineering and Administration</u>						
1.1 Engineering and supervision	7,900	6.4	-	-	-	7,900
1.2 Administration	<u>7,900</u>	<u>6.4</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>7,900</u>
Subtotal	<u>15,800</u>	<u>12.8</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>15,800</u>
<u>Direct Construction Costs</u>						
2.1 Materials and Equipment	65,400	53.2	47,200	33,050	14,170	18,180
2.2 Construction	16,800	13.7	-	-	-	16,800
2.3 Inside Installations	10,900	8.9	-	-	-	10,900
2.4 Transportation and Insurance	<u>11,200</u>	<u>9.1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>11,200</u>
Subtotal	<u>104,300</u>	<u>84.9</u>	<u>47,200</u>	<u>33,050</u>	<u>14,170</u>	<u>57,080</u>
<u>Financial Costs</u>						
3.1 Interest	2,280	1.9	2,280	1,600	680	-
3.2 Credit Fee	120	0.1	-	-	-	120
3.3 Inspection and Supervision Charge	<u>500</u>	<u>0.3</u>	<u>500</u>	<u>350</u>	<u>150</u>	<u>-</u>
Subtotal	<u>2,900</u>	<u>2.3</u>	<u>2,780</u>	<u>1,950</u>	<u>830</u>	<u>120</u>
Total	<u>123,000</u> <u>2/</u>	<u>100.0</u>	<u>50,000</u>	<u>35,000</u>	<u>15,000</u>	<u>73,000</u> <u>2/</u>
	(100.0)		(40.7)			(59.3)

1/ It is not possible to provide a detailed forecast of investment by cost categories and sub-categories for the resources from each source of local contribution. These sources and their respective contributions are specified in the proposed resolution.

2/ To this estimate should be added the contributions for connection to the electric service to be made by the beneficiaries for an amount equivalent to US\$27,000,000, corresponding to 18% of the cost per home in the respective systems, which will permit completing the financing of all of the works.

B. Unit Cost

- 2.02 In accordance with the preceding breakdown, the total project cost is estimated at the equivalent of US\$123 million. This cost would be financed to the extent of 40.7% by the Bank's loan in the equivalent of US\$50 million and 59.3% by local counterpart resources in the equivalent of US\$73 million.
- 2.03 The unit cost resulting from the estimate amounted in round figures to the equivalent of US\$1,154 per beneficiary house, US\$5,150 per km. of 13.2 Kv primary line, US\$3,100 per km. of secondary line and US\$126 per inside installation. As will be made clear below, the indicated cost per km. of 13.2 Kv primary lines does not substantially differ from the following cost per km. estimated for that type of line in other electrification projects currently being examined by the Bank: Argentina (AR-0140) US\$5,000; Brazil (BR-0156), US\$5,050; Jamaica (JA-0045), US\$6,000.

C. The Bank's Loan

- 2.04 The Bank's loan in an amount equivalent to US\$50 million, which it is recommended be granted out of resource of the Fund for Special Operations, would include US\$35 million in foreign currencies and the equivalent of US\$15 million in Colombian pesos. According to the new policy of the Bank for the financing of costs in foreign exchange and local currency for an energy project in a Group B country, the Bank could finance with resources in foreign exchange up to 40% of the total cost of a project. In the case of the loan recommended in this report, the amount of resources in foreign exchange proposed would be determined by the present availability of resources in the Fund for Special Operations, the policy for the use of those resources in the period of the Fifth Replenishment of Resources and the application made of these resources in foreign exchange in operations with countries of Groups B and C, including those operations making up the pipeline of loans of Colombia of this year. This amount in foreign exchange of the loan recommended constitutes 28.5% of the total cost of the proposed project.
- 2.05 The US\$33,050,000 in foreign currencies in the loan would finance 50.5% of the total estimated cost of materials and equipment, for which purpose local currency from the loan in the equivalent of US\$14,170,000 would also be used. The remaining foreign and local currencies in the loan, amounting to the equivalent of US\$2,780,000, would be used to cover the payment of interest during construction and the inspection and supervision charges.
- 2.06 The terms and conditions of the loan would be as follows: (a) amortization term, 30 years; (b) execution period, 4 years; (c) grace period, 7 years; (d) interest rate, 2% per annum; (e) credit fee, 1/2 of 1% per annum. The period for physical initiation of the works would be three

years, to be counted from the effective date of the proposed loan contract. The justification for this term as well as a condition precedent for the start of the third stage of the project are presented in Chapter VI.

D. Local Contribution

- 2.07 The local contribution in the equivalent of US\$100 million would come from the following sources: (Proposed Resolution, clause 8(b)).

(in US\$ thousands)

National Government	33,000
National Coffee Growers Federation (FEDERECAFE)	22,500
Regional Executing Agencies	13,500
Instituto Colombiano de Electrificación (ICEL)	<u>4,000</u>
	73,000
	=====

- 2.08 The National Government contribution in the equivalent of US\$33 million would be allocated in the national budget to ICEL.
- 2.09 The funds in the equivalent of US\$22,500,000 from the National Coffee Growers' Federation (FEDERECAFE): (a) have been offered as a nonreimbursable contribution; (b) would come from the Departmental Coffee Growers' Committees making up that Federation, and (c) will, by provision of FEDERECAFE, have to be used for electrification works in the country's coffee growing areas. The commitment to contribute the resources will appear in an agreement the bases of which have already been agreed upon and that would be signed by ICEL and FEDERECAFE and submitted to the Bank prior to the first disbursement of the resources of the loan (Proposed Resolution, clause 8(c)(iv)).
- 2.10 The regional executing agencies of the project would contribute funds in the equivalent of US\$13.5 million as follows: (a) ICEL electrification affiliates, US\$11,960,000; (b) Corporación Autónoma Regional del Cauca (CVC), US\$790,000; and (c) DAINCO, US\$750,000. These resources would be provided from internal cash generation and from contributions of the departmental and municipal governments. In the case of the ICEL electrification affiliates, they would come from a loan being negotiated by CVC and from national budget funds that would be assigned to DAINCO.
- 2.11 The contribution for the equivalent of US\$4 million from ICEL would be represented by the cost of studies and designs of the project. This contribution and that from the national government for the equivalent of US\$33 million, together with the resources for the equivalent of US\$50

million of the eventual loan from the IDB, that is, a total equivalent to US\$87 million that represents 70.7% of the cost of the project, would be transferred by ICEL: (a) to the affiliate electric utilities in exchange for shares in them, and thus the resources transferred in this way would have the nature of an investment of ICEL in the capital of the electric utilities, <sup>1/</sup> and (b) to the CVC in the form of a loan with the same amortization period and conditions upon which the loan from the IDB is granted referred to in the present document. The works in the areas of jurisdiction of DAINCO would be the property of ICEL and consequently in this case there would be no transfer of resources.

#### E. Contributions of Beneficiaries

- 2.12 As indicated, the contributions for connecting to the electric service that the beneficiaries would pay for an amount equivalent to US\$27 million would complete the financing of all of the works. Of this amount: (a) the equivalent of US\$4,500,000 would pertain to payments for 3% of the cost per home of the respective electric system that the regional entities would receive directly from each beneficiary in a period of two years with interest of 12% per annum; and (b) the equivalent of US\$22,500,000 will come from loans which, for completing these connection payments, would be granted by the Caja de Crédito Agrario, Industrial y Minero to beneficiaries of the project in the form of association credit with the maximum amortization period of six years an interest that could range between 16% and 22% per annum.
- 2.13 The commitment of the Caja de Crédito Agrario, Industrial y Minero of providing the resources for the equivalent of US\$22,500,000 for the granting of these loans to beneficiaries would appear in an agreement signed with ICEL that would be submitted to the Bank before the first disbursement of the resources of the loan. The basis for this agreement has already been agreed upon among the parties concerned (Proposed Resolution, clause 8 (c)(v)).

### III. PROJECT EXECUTION

#### A. Selection Criteria

- 3.01 The criteria for selection of works in the project are presented in Annex III to this proposal. Their principal objectives are: a) to favor inhabitants with very low income levels; b) to give preference to those rural areas with the lowest coverage of electric service and which have the economic and social infrastructure necessary for assuring the most productive use of the electric power; c) to make appropriate use of

---

<sup>1/</sup> By provision of the Colombian law ICEL cannot own more than 95% of the capital of its affiliated electric utilities and consequently in certain cases, a small part, these transfers of resources would have to be made in the form of a loan.



existing electric infrastructure; d) to expand the country's existing capacity for rural electrification to a substantial extent; and e) to execute the works at the lowest possible cost per house (Appendix III, paragraph 3.01).

- 3.02 Prior to the call for bids or initiation of each work or group of works, documentation would be submitted to the Bank enabling it to determine, among other things, whether the established selection criteria have been applied in the choice of the work or group of works in question (Recommendations 1(c)).

B. Technical Aspects

- 3.03 The activities involved in the execution of the project have been divided among ICEL and the regional agencies in accordance with experience in the joint execution of earlier projects, the executing capabilities of each participating agency, the greater familiarity the regional agencies have with new resources available in each region for execution of the project, the desirability of centralizing the procurement of the major part of the equipment and materials, and the orientation, coordination and general supervision required for the execution of the project.
- 3.04 The division of the major activities is basically as follows: ICEL. review of preliminary designs and selection of the works for which final designs have to be prepared; review and selection of designs and determination of the works to be carried out; preparation of lists of equipment and materials needed; bidding, contracting, receipt, storing and distribution of the equipment and materials; orientation, coordination and supervision of activities at regional level; b) Regional executing agencies. identification of groups of rural houses for possible inclusion in the subproject under the responsibility of each; preparation of preliminary and final designs; promotional activities to attract prospective beneficiaries, and assistance to them in obtaining loans from the Caja de Crédito Agrario, Industrial y Minero; liaison with the Departmental Coffee Growers' Committees; bidding and contracting operations pertaining to works and, in some cases execution of works by force account; and supervision of contractors. 1/
- 3.05 Before or slightly after the start of the activities described above, ICEL would enter into an agreement with each regional executing agency setting forth provisions to govern the relations between the two parties in the execution of all the works to be carried out within the jurisdiction of each agency. After such works have been defined to the extent necessary for bidding or for starting construction, ICEL and the agency would sign an execution contract.

---

1/ Further information on the execution of works by force account is given in the Chapter on Special Aspects of this proposal.

- 3.06 The provisions of and the term for submitting the text of these agreements and contracts are proposed in Appendices I and II to this proposal. A further condition is that disbursements from the Bank's loan for each subproject are not to begin until the pertinent agreement has been submitted to the IDB. It will be noted that the provisions include the following conditions: a) presentation to the Bank before the first disbursement of the loan of the pertinent model contract and four of these agreements, which is approximately 30% of the total number of agreements envisaged, the purpose being to demonstrate that agreement has been reached by that time on the execution of a significant number of works, and b) the rest of the agreements must be submitted within 12 months of the effective date of the loan contract, and any regional agencies that have not signed the pertinent agreements with ICEL by that time will be excluded from participating in the project. (Proposed Resolution, clauses 8(c) (ii) (iii); and Recommendations, 8).
- 3.07 The project would be carried out in three stages, 1/ primarily for the purpose of assuring the best use of executing capacity at regional level. The bulk of activity is scheduled for the second stage, with the electrification of 52,000 houses and an investment equivalent to US\$60,000,000. The targets for the first and third stages would be the same for both: electrification of 39,000 houses and an investment of US\$45,000,000 equivalent at each stage. (Appendix III, Paragraph 2.03)
- 3.08 Assuming that the loan contract is signed in March 1980 and the operation is declared eligible for disbursements six months later, the works for the respective stages would begin in December of the years 1980, 1981 and 1982. The construction period for each stage is conservatively estimated at 11 months, but in practice may be substantially shorter. Consequently, a period of three years will be set for physical initiation of all the works. This is a special issue and will be discussed later in this proposal. (Proposed Resolution, clause 7).
- 3.09 Designs are already available for the first stage of project execution. These represent 30% of all the designs needed for complete execution of the project. The designs for the second and third stages will be completed, respectively, 18 and 5 months before the dates established for initiation of the works for those stages. The preliminary designs for the second and third stages are at 50% of completion and will be finished in about five months' time.
- 3.10 The project designs were prepared in accordance with ICEL's established standards for rural electrification, as recommended in a study made in 1973 by a consortium of specialized consulting firms. These standards are the ones being applied by ICEL in the Rural Electrification Subproject included in the Integrated Rural Development Project (DRI) partially financed by Loan 475/SF-CO.

---

1/ These are well-defined phases within the project execution. The word "stages" rather than "phases" is used for consistency with the terminology used by ICEL in documents attached to the Project Report.

- 3.11 Bidding on equipment and materials would be conducted at three different times and each operation would group together the requirements for one of the three stages of project execution. The same holds true for bidding on the award of construction contract. The dates of the invitations to bid and the amounts of each bidding package are as follows: (a) Equipment and materials: December, 1979, the equivalent of US\$21,000,000; November, 1980, the equivalent of US\$23,000,000; November, 1981, the equivalent of US\$22,000,000; (b) Construction: July, 1980, 1981 and 1982, amounts equivalent respectively to US\$12,800,000, US\$17,100,000 and US\$12,800,000. The documents for the invitation to the first call for bids for equipment and materials have already been submitted to the Bank.
- 3.12 The Project Monitoring System (PMS) would be used to provide information on the advance of the project and determine any measures necessary for avoiding or solving delays in project execution.

C. Institutional Aspects

- 3.13 It is considered that, once the Rural Electrification Office has been restructured as indicated in the following paragraph, the organizational structure, staff endowment and operational capability of ICEL will be adequate for the agency's objectives.
- 3.14 ICEL's Rural Electrification Office would act as executing unit for the proposed project, orienting, coordinating and supervising the activities of the executing agencies at regional level. In order to ensure that these duties will be discharged as efficiently as possible, ICEL has decided to take the following steps to strengthen the Rural Electrification Office: (a) raise the rank of the office, which is now a unit of the Technical Subdepartment, to that of an autonomous unit with divisional rank reporting directly to the Manager; (b) increase its staff to a total of 40, including 25 engineers, 13 of whom would work at the construction sites and be assigned to the participating regional agencies; and (c) organize the duties of the office in accordance with the following categories: promotion and planning, design, coordination of works, bidding on contracts; local coordinators, coordination of warehouses, and financial and accounting functions.
- 3.15 Submission of evidence to the Bank that the steps described in paragraph 3.14 have been taken would constitute a condition precedent to the first disbursement of loan funds (Proposed Resolution, clause 8 (c)(i)).
- 3.16 No problems are expected in connection with the institutional or operational capacity of the regional executing agencies to carry out the activities assigned to them under the proposed project. This judgment takes account of the wide geographic dispersion of the works to be carried out, the execution of the project in three stages, and the support that the regional agencies will receive from ICEL.

D. Financial Aspects

- 3.17 ICEL has followed a financing policy under which resources are allocated to economic development investments, primarily equity investment in its affiliates and construction of electrification works. These investment have been financed out of government resources and the proceeds of long-term borrowings. ICEL is therefore more a financial and development agency than an institution with cash generation of its own. This explains why, as indicated, the funds to be applied by ICEL to execution of the project will come from outside sources and why the service of the debt arising from the proposed loan is to be paid with funds from the national budget.
- 3.18 The ICEL-affiliated electric companies that would participate in the proposed project have been experiencing a significant increase in internal cash generation. They have also secured substantial amounts of external funds for their investment programs. These funds have come mainly from financial support appropriations of departmental and municipal governments and from direct and indirect borrowings.
- 3.19 Of the 11 electric companies referred to above, 2 are operating at a loss, 4 have a marginal profitability of less than 5%, 4 have profitabilities in the vicinity of 8 to 11%, and 1 reports a profitability of 20.5%. The rates of return, however, are calculated in every case on the unvalued cost of fixed assets and should therefore be considered with reservations.
- 3.20 The aspects indicated in the two preceding paragraphs were taken into account in determining the rate clause that would be included in the eventual loan contract, which is recommended in the chapter on Special Aspects of this Proposal.

E. Legal Aspects

- 3.21 The major works included in the project will require the use of lands alongside the roads providing access to the communities where electrification work is to be done. According to existing law, it will be necessary to obtain a right of way for the power lines to be installed. This can be readily obtained.
- 3.22 If in some exceptional cases it should be necessary to install a substation on private land, ICEL, in accordance with the law, can resort to the legal mechanism of having the necessary land declared in the public domain, which is the initial step for expropriating it. The proceedings are quick and can, in no event, place obstacles in the way of project execution, since ICEL has authority to receive the necessary land and the only question would be the value of the land expropriated.

- 3.23 The loan contract would have to include a commitment by the borrower to submit to the Bank, prior to the call for bids or the start of construction, evidence of the legal possession of the necessary rights to the land required for construction of the works (Recommendation 1 (b)).

#### IV. PROJECT JUSTIFICATION

##### A. Technical Feasibility

- 4.01 ICEL and its affiliated electric companies have satisfactorily executed a number of projects financed in part with Bank funds, including the ICEL-IDB Plan for which Loans 211/OC-CO and 290/SF-CO were provided and the rural electrification subproject being executed as part of the Integrated Rural Development Program for which Loan 475/SF-CO was granted. The Corporación Autónoma Regional del Cauca (CVC) and the Central Hidroeléctrica de Caldas (CHEC) have experience in the execution of projects financed in part by the IDB. In addition, 10 of the regional executing agencies for the project under consideration have carried out rural electrification projects in which the Departmental Coffee Growers' Committees and/or the Caja de Crédito Agrario, Industrial y Minero have participated.
- 4.02 No problems are expected to arise in connection with the supply of materials needed or the availability of labor for the work. Moreover, it is anticipated that construction firms will be available to accomplish the jobs during the established terms, except for jobs that may not be attractive to private contractors because of remoteness from the rest of the work to be done. Concerning these latter jobs, because of the geographic dispersion and due to the fact that the project will be executed in three stages, no possibility is foreseen of concentrating those to be executed by force account. It is felt, however, that the regional executing agencies will be able to perform these jobs directly.
- 4.03 It is concluded that the proposed operation is technically and operationally feasible in the light of the information in the preceding two paragraphs. This conclusion is also based on the design standards, the availability of designs, the division of activities, and the reorganization of the ICEL's executing unit referred to in other chapters of this Loan Proposal.

##### B. Financial Feasibility

###### 1. Local Contribution

- 4.04 The contribution of local counterpart funds which, as already stated will come from various sources, is regarded as feasible in view of the following facts:
- a) The high priority that the Government has assigned to the electric sector in its development plans;

- b) The top priority assigned in the electric-sector development program to expansion of service to meet the needs of currently neglected areas, urban as well as rural;
- c) The relatively small impact of the contribution expected from the national budget. This contribution, in the equivalent of US\$33,000,000, is equal to only 1.4% of the total amount of capital outlays included in the National Budget for 1979;
- d) The fact that the average yearly contribution equivalent to US\$5,600,000 expected from FEDERECAFE for the project under consideration is less than the average investment of FEDERECAFE in rural electrification in the last three years, which amounted to the equivalent of US\$6,900,000 per year;
- e) The fact that the total contribution expected from ICEL's affiliated electric companies is US\$11,960,00 equivalent, only 5% of the total amount of US\$229,700.000 estimated as cash generation of the electric companies during the project execution period. Moreover, as already indicated, these funds will be contributed mostly by the departmental and municipal governments;
- f) The finding that the future financial effort of the departmental and municipal governments for execution of the total investment program of ICEL's affiliated electric companies will be within this historic range of contributions by those government to the electric sector;
- g) in the case of the contribution by ICEL for the equivalent of US\$4 million, which represents the cost of designs and of the contributions of CVC and DAINCO for amounts that are equivalent respectively to US\$790 million and US\$750 million: (1) the first two entities would finance their investments with loans that are in an advanced stage of processing and that (2) the contribution of DAINCO accounts for only 2.2% of the last budget of that entity.

4.05 The financial plan for the proposed operation reflects the fact that the investments from each individual source would have a multiplier effect. In the case of the government, the additional investments would represent an amount 1.2 times the contribution from the national budget. The contribution from the regional agencies would be supplemented by an investment from other sources amounting to 4.4 times that contribution. This multiplier effect is regarded as an important additional incentive at the national and regional level for the provision of the contributions from the Government and the regional agencies, including, in the latter case, the resources that would come from departmental and municipal governments.

4.06 In order to assure a timely determination of the financial requirements of ICEL and the participating electric company, the borrower would submit to the Bank each year its budget of income and expenditures and the

projected cash flow statements for those companies. (Recommendations, 6 and 7).

## 2. Contributions from beneficiaries

- 4.07 The contributions from the beneficiaries are also considered feasible for the equivalent of US\$27 million that would make it possible to complete the financing of all of the works, in view of the following: (a) the small amount, equivalent to US\$208, of the contribution per home provided with electricity; (b) the fact that this contribution, based on an average of 6.35 inhabitants per home, represents the contribution per person of only US\$32.75; (c) the facilities for the payment in two parts of the contribution, as follows: the equivalent of US\$34 within two years that would be granted by the electric utilities and the equivalent of US\$174 in the period of up to six years pertaining to loans that the beneficiaries could obtain from the Caja de Crédito Agrario, Industrial y Minero; and (d) the commitment of the latter entity of earmarking for the granting of those loans to beneficiaries the equivalent of US\$22,500,000. That contribution comprises, in total, only 4% of the total amount of the loan portfolio of the Caja and, in terms of the average annual investment it will represent during execution of the project, less than 6% of the average annual increase in the level of placements of the Caja in the last two years.

### C. Economic Justification

- 4.08 The economic profile of the project is attractive: its internal rate of return is 13.1%, and its present net value US\$9.8 million. Considering all the uncertainties surrounding the project, the effect on its economic indicators would probably be that of increasing the values estimated for internal rate of return and present net value.
- 4.09 ICEL proposes to undertake a program to educate the beneficiaries in the use of energy resources. The accomplishment of that program, designed to assure the improvement of living conditions and increase the levels of productivity, has not been considered in the economic evaluation of the project. Execution of the program will therefore make it possible to improve the economic profile of the proposed project even more, particularly since the economic evaluation showed that the project per se, without that educational program, would have no substantial effect on the introduction of services based on the use of electricity or on the rate of exodus from rural areas.
- 4.10 The education program mentioned above would be submitted to the Bank within 12 months from the effective date of the loan contract. (Recommendations, 8).
- 4.11 The borrower will also make an ex post evaluation of the project's socioeconomic impact, covering, inter alia, the items specified in Appendix III to this proposal. The times at which the report on that evaluation, as well as the initial baseline data and a description of the

methodology for compiling and processing data for the periodic comparisons, are indicated in Appendix II to this proposal. (Recommendations, 3, 4 and 5).

D. Use of Resources of the Fund for Special Operations

- 4.12 Pursuant to the agreement reached in principle with Colombia in relation to the definition of the level of low income of its population, that level pertains to the inhabitants whose annual per capita income is not more than 25,000 Colombian pesos. <sup>1/</sup> Ninety per cent of the inhabitants in the project area have an annual average income of not more than 25,000 colombian pesos, with that group including 80.4% of the population whose annual per capita income does not exceed the figure of 15,000 Colombian pesos. Consequently, 9 of every inhabitants in the project area come within the definition of low income agreed upon in principle with Colombia, with the income of 8 of those 9 persons being substantially less than 25,000 Colombian pesos.
- 4.13 Obviously one cannot prevent connection to the service of persons with income exceeding the level of 25,000 colombian pesos at the year mentioned previously. This group, however, pursuant to the rules that, as indicated, would be established in the eventual loan contract: (1) cannot exceed 12% of the total beneficiaries of the project, and (2) will make payments for connection to the service that will range between 13% and 100% of the cost per home of the pertinent system.
- 4.14 By virtue of the above, the low-income inhabitants would possibly constitute in actual practice 90% of the beneficiaries of the project but they certainly would not represent less than 80% of those beneficiaries. Furthermore, the low-income beneficiaries will pay for connection to the service only 18% of the cost per home of the respective system, whereas those with higher income will pay between 30% and 100% of that cost. Consequently, the benefits resulting from the granting of the loan will favor low-income inhabitants to a greater extent than they represent in the total number of beneficiaries.
- 4.15 The final conclusion, therefore, is that the loan recommended will benefit 100% of the inhabitants of the project area included in the definition of low income that the Bank has agreed upon in principle with Colombia.

V. EVALUATION OF EARLIER LOANS TO ICEL

A. Loan 475/SF-CO

- 5.01 Loan 475/SF-CO is helping to finance the integrated rural development program being executed in the Departments of Boyacá and Santander. The

---

<sup>1/</sup> The amounts in colombian pesos in this and the remainder paragraphs of the present section D are expressed at prices of September 1979.



borrower is the Republic of Colombia, and the administrator is Caja de Crédito Agrario, Industrial y Minero. This loan, in the equivalent of US\$164,000,000, was approved November 23, 1976, and the contract with the IDB was signed December 16 of the same year. ICEL, directly and through two of its affiliated electrification companies, is executing the rural electrification component of that project. The cost of the subproject is the equivalent of US\$16,840,000, representing 6.3% of the total project cost. The funds from the IDB loan applicable to the subproject amount to the equivalent of US\$4,800,000, i.e., 7.5% of the total loan amount.

- 5.02 The subproject called for construction of approximately 1,500 km of medium-voltage distribution feeder lines to serve about 12,000 beneficiaries. Actual work was not started within the period originally set for the purpose, which ended December 16, 1978, and it was necessary to extend the period for one year.
- 5.03 Twenty seven percent of the project works are finished and another 50.4% are under way. The latter, together with the finished jobs, would provide service to 68.2% of the estimated number of users. The 22.6% of the works yet to be started would provide service to 31.8% of the subproject's beneficiaries. Performance of this pending work will require an extension of the present period for physical initiation, which expires December 16, 1979. These works, however, will not take long to carry out and therefore it will not be necessary to extend the current period for the last disbursement of the loan, expiring June 16, 1982.
- 5.04 Overall project advance has been hampered by, among other things, sluggish processing at the borrower and administrator level because of the massive paperwork required for the execution of activities. At the project level, this problem seems to have affected the morale of the participating electrification companies. As for ICEL staff limitations and an inappropriate reporting relationship of the executing unit have impaired the latter's efficiency. As previously stated, ICEL, proposes to institute a reorganization of the unit and supply it with the personnel for solving this problem.
- 5.05 Since, as indicated, only 27% of the project works have been completed, it is still too soon to attempt to verify compliance with the rate clause for this loan. The other clauses of the loan contract are being satisfactorily complied with.

B. Loans 211/OC-CO and 290/SF-CO

- 5.06 These loans, for a total equivalent to US\$25,000,000, partially financed a project with a cost originally estimated at the equivalent of US\$42,950,000 to provide necessary electric infrastructure and build or remodel the electric power distribution systems in 127 populated centers located in the area of influence of 12 ICEL affiliated electrification companies. The operation, in which ICEL is the borrower, was approved

by the Bank on February 11, 1971 and the loan contracts were signed May 28 of that year. The physical targets in the execution plan originally considered by the Bank were later reformulated. The reformulation consisted essentially of increasing the length of the subtransmission lines from 1,619 km to 2,000 km, increasing the number of transformer substations from 17 to 32, and reducing the number of systems to be constructed and/or improved from 127 to 112.

- 5.07 The actual project cost was 8.3% lower than the cost originally estimated. 92.4% of the amount of the loans was disbursed. The local contribution was 13.1% greater than originally foreseen, amounting to the equivalent of US\$19,899,000.
- 5.08 Execution, originally estimated at four years, took seven years. This extension of the period was due to: non-compliance by suppliers and contractors, the time required for promulgating governmental decrees established rules for bidding and contracts, delays in bidding and contract procedures because of the implementation of those rules, heavy rains in the latter part of 1975, and a slowdown in execution as a result of the rise of fuel prices in 1978.
- 5.09 As required by the contracts for these loans, the borrower established a project executing unit, a subdepartment in charge of affiliates, and planning and internal audit unit. The project executing unit, however, as already indicated, was not given an appropriate reporting relationship. ICEL has decided to correct this situation.
- 5.10 At certain times there were delays in compliance with clauses in the loan contract. However, except for the rate provision mentioned in the following paragraph all the contract clauses were fulfilled to the Bank's satisfaction.
- 5.11 The Junta Nacional de Tarifas approved increases in the rates of ICEL electrification affiliates that signified a rise of about 300% beginning in 1972. Despite these increases, some electrification companies are still operating at a loss or obtaining only a marginal profit. Actually, in 1977 three of the 12 electrification companies participating in the project suffered losses and another five obtained only marginal profitability of less than 4% on net assets in service. But in all these cases the profitability has been calculated on the unreevaluated cost of fixed assets and should therefore be regarded with reservations. The electrification companies have complied with their obligations.
- 5.12 The situation with respect to compliance with rate clauses in 1978 may be considered similar to that in 1977.

C. Loan 107/OC-CO

- 5.13 Loan 107/OC-CO for the equivalent of US\$3,200,000, granted to ICEL, was approved December 3, 1964. Its purpose was to help in finance an expansion of one of the generating plants in the service of Centrales Eléctricas del Norte de Santander, S.A., and interconnecting that plant with the Ocaña and Pamplona plants and with the system of the Compañía de Administración y Fomento Eléctrico (CADAFE) of Venezuela. Total project cost was estimated at the equivalent of US\$4,878,000, with the loan financing 65%. The disbursement period was set at four years.
- 5.14 The project as originally structured was completed in 1979 with a cost for imported goods lower than that which was scheduled to be financed from the loan. As a result of that saving, there was a surplus of foreign currency in the loan. This surplus, with the Bank's authorization, was used for the expansion of subtransmission and distribution lines in order to cover additional needs in neighboring communities. This additional work was satisfactorily completed in 1973.

D. Loan 106/OC-CO

- 5.15 This loan, for the equivalent of US\$8,000,000, was approved November 19, 1964. Its purposes was to help finance a project that called for harnessing the Prado River for the generation of electricity. The original project included basically the following work: (a) construction of a dam 70 meters high, (b) installation of a 36 MW generating plant consisting of three units, (c) installation of a step-up substation; and d) construction of a 114 KW transmission system and related subtransmission and distribution systems. The total project cost was estimated at the equivalent of US\$20,839,000, and the IDB loan financed 38.4% of that cost.
- 5.16 All the works in the project were completed, with physical facilities exceeding the original targets, in the first half of 1973. The protracted period of execution included delays resulting from: (a) disagreements between the two firms of consulting engineers originally hired to prepare the plans and final designs; (b) slowness in the allocation of the national counterpart funds owing to a US\$13,000,000 rise in projects costs.

VI. SPECIAL ASPECTS

A. Period for Physical Initiation of Subprojects

- 6.01 Project execution has been divided into three phases, primarily to ensure the best possible use of executing capacity at regional level and thereby substantially reduce of overutilization of that capacity. This division into stages, however, makes it necessary for the Bank to allow a three-year period from the effective date of the contract for physical initiation of all the subprojects.

- 6.02 It will be noted that, according to the estimate of construction times, there would be an adequate margin of four months from scheduled completion of third-stage works and March 19, 1984, when the four-month period proposed for disbursements from the loan expires, this period being normal for global multiple works projects. The construction period, conservatively estimated may in practice turn out to be significantly shorter, in which case the margin between completion of the works and the deadline for the last disbursement of the loan would be longer.
- 6.03 The division by stages would help to provide greater flexibility in the execution of the project and make it possible: (a) to review the physical targets for each region as each stage is completed; and (b) adjust the programming for work not yet begun on the basis of experience in the construction of those executed first.
- 6.04 For the reasons given above it is felt that the Bank would be justified in this case in allowing a three-year period for physical initiation of the subprojects (Resolution, clause 7). In any event, the startup of the works of the third stage would be after the startup of the works on the first and second stages, by virtue of the clause in the loan contract that would require demonstrating to the Bank before 24 months have elapsed from the effective date of the loan contract and before resources from the financing can be disbursed for the third stage, that the works have been begun on the two preceding stages (Recommendations, 9).

B. Work by Force Account

- 6.05 Some projects works might not be of interest to private contractors because the sites are in remote locations. Accordingly, they would have to be executed by force account. Owing to the wide geographic dispersion of the works and the division of the project into stages, it is not anticipated that it would be possible to concentrate all the works to be done by force account. It is felt that the regional executing agencies would be able to perform these jobs directly, particularly in view of the experience with this type of execution and the fact that the work involved is not complex and is easy to do. It should also be mentioned that the execution of works by force account would make it possible to apply locally available intermediate technology. It is therefore proposed that the loan contract include an authorization to accomplish work by force account up to an amount that, it is estimated, would not exceed the equivalent of US\$12,000,000 in local counterpart funds. (Resolution, clause 8 (f)).

C. Recognition of Expenditures Made Prior to Signature of the Contract

- 6.06 It is recommended that the Bank be authorized to recognize as part of the local contribution to the project, engineering costs of up to the equivalent of US\$2,500,000 incurred by ICEL before the date of the loan

contract but after May 22, 1979, the date of submission of the loan application to the Bank, provided that in incurring such expenditures requirements substantially similar to those set forth in the Resolution and the Loan Contract have been fulfilled (Recommendations, 2).

D. Rate Clause

- 6.07 The rates charged for electric service in the rural regions in which the project will be executed depend basically upon the financial capacity of the population of each region. The extent to which the revenue from these rates covers the costs of each system and provides or does not provide an adequate rate of return on the investment depends upon how high those costs are. These costs can vary substantially from one electric utility to another, primarily because of differences in the generating costs or in the obtention of the energy supplied and smaller or larger unit costs for operating the system.
- 6.08 As expressed earlier, the operating results are not the same in the eleven electric utilities affiliated with ICEL that would participate in the project. In effect, as indicated elsewhere in this proposal, four of those eleven utilities suffer losses, two have a rate of return of less than 5% on total fixed assets and four of them have rates of return between 8% and 11% and the rate of return is 20.5% in one case. The electric utilities also depend considerably upon external sources for the financing of their investments, including contributions from regional governments.
- 6.09 It should be pointed out that the rates of return mentioned in the paragraph preceding were calculated on the not revalued cost of the fixed assets and consequently, based on the figures resulting from a revaluation of those assets, the rate of return percentages will be substantially lower than reported. This revaluation will be made soon and will be aimed basically at; (a) providing an adequate measure of the effects of the rate increase policy already implemented in the Colombian electric sector; (b) having suitable information for the future establishment of the rate levels.
- 6.10 The rate increase policy in effect in the Colombian electric sector brought about an increase in rates of 45.7% in real terms in only 3 years, from 1974 to 1977. This effort should be considered significant since from 1970 to 1974 the rate in real terms had deteriorated by 45.9%, reaching in 1974 only 54.1% of the rate existing in 1970. As the result of the recovery referred to, the rate in 1977 reached in real terms 78.8% of what it was in 1970. In the immediate future there will continue to be automatic monthly rate increases which are already in effect and which represent in current terms increases of 27% annually. In view of the slowing down that has already begun to be noted in inflation, these increases in real terms are and will continue to be increasingly more significant than those obtained in the last few years.

- 6.11 ICEL considers that, as an effect of the rate increases indicated and based on the preliminary calculations it made of the amounts resulting from a revaluation of assets, the regional entities indicated ahead would be able to attain by no later than 1985 the following minimum annual rates of return on investment in net revalued fixed assets: Caldas, Norte de Santander and Tolima, 6%; Santander, Huila and Boyacá, 3.5%; Antioquia and Cundinamarca, 1.5%; and Cauca, Chocó and Nariño, 0.5%. Concerning the remaining systems included in the subproject that DAINCO would execute, ICEL has stated that they were operating at high costs because of regional characteristics and it therefore felt that the objective of the rates in those systems could basically not go beyond coverage of the costs without expecting any reasonable rate of return.
- 6.12 What was stated in the preceding paragraphs served as justification for the recommendation of the rate clause and other conditions on rates to be included in the eventual loan contract. The coverage of rate of return levels would only be stipulated in the case of the electric utilities with a possibility of obtaining profits and this coverage will be limited to the operating costs in the case of the utilities for which there is no reasonable expectation that they will obtain profits. The loan contract would also establish that the borrower and the guarantor shall adopt the necessary measures to obtain the necessary resources required for timely servicing of all of the obligations of the pertinent utility (Proposed Resolution, Clause 8(d) and 8(e)).
- 6.13 The proposed rates of return pertain to those which, according to the estimates of the ICEL, would be reached by no later than 1985. The pertinent calculation must be made based on the investment in net revalued fixed assets, according to the methodology agreed upon by ICEL and the Bank. That methodology, described in Annex 25 of the Project Report, was the one used by ICEL in the estimates referred to earlier. (Appendix III, paragraph 7.010.
- 6.14 Lastly, the loan contract should stipulate that within 180 days following the close of fiscal year 1980 the borrower shall submit to the Bank data indicating the rate of return obtained for each affiliated entity of the borrower participating in the project, calculated on the pertinent investment in net revalued fixed assets. Based on the rate of return thus established and for those cases in which the rates referred to in the preceding paragraph have not been achieved, the Bank and the borrower shall agree by no later than September 30, 1981 on a schedule for gradual increase in the rates of return so that within the maximum period of 5 years up to 1985, these rates can be attained. (Recommendations 10).

PROPOSED RESOLUTION

COLOMBIA. LOAN /SF-CO TO THE INSTITUTO COLOMBIANO  
DE ENERGIA ELECTRICA (ICEL)  
(Rural Electrification Project)

The Board of Executive Directors:

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Instituto Colombiano de Energía Eléctrica (ICEL) as borrower, and the Republic of Colombia as guarantor, for the purpose of granting the former a financing to cooperate in the execution of a rural electrification project. This loan shall be subject substantially to the following terms and conditions:

1. Amount and currencies: Up to US\$50,000,000 or its equivalent thereof in other currencies that are part of the Fund for Special Operations, of which amount: (a) up to US\$35,000,000, or the equivalent in other currencies (except that of Colombia) to pay for goods and services acquired through international competition in the member countries of the Bank and for such other purposes as may be specified in the loan contract; and (b) up to the equivalent of US\$15,000,000 in Colombian pesos to cover local expenses. Payments of principal and interest shall be made in the respective currencies disbursed.
2. Source of funds: The Fund for Special Operations.
3. Guarantee: The joint and several guarantee of the Republic of Colombia.
4. Credit fee: 1/2 of 1% per annum on the undisbursed portion of the amount specified in paragraph (a) of clause 1 of this Resolution, commencing to accrue 12 months after the date of this Resolution. Payment shall be made in dollars of the United States of America on the same dates as the interest.
5. Amortization: The borrower shall amortize the loan in a period of 30 years from the date of the contract, by means of semiannual consecutive and, insofar as possible, equal installments. The first installment shall be paid 7-1/2 years after the date of the contract.

6. Interest: 2% per annum, payable semiannually on principal amounts outstanding. The first payment shall be made 6 months after the date of the contract. At the request of the borrower, resources of the loan may be used to pay interest during the period of disbursement thereof.
7. Physical initiation and disbursement: Physical initiation of all the subprojects shall have commenced within a period of 3 years after the effective date of the contract, and total disbursement of the financing shall be made within a period of 4 years after the effective date of the contract.
8. Special conditions:
  - (a) The resources of the loan shall be utilized in their entirety by the borrower through its subsidiary electric companies, the Departamento de Intendencias y Comisariías (DAINCO), and the Corporación Autónoma Regional del Vallen del Cauca (CVC) (collectively referred to herein as the "regional executing agencies"). If modifications in the legal provisions or in the basic regulations concerning the borrower and/or the regional executing agencies are approved which, in the opinion of the Bank, may substantially affect the project, the Bank may take such measures as it deems appropriate in accordance with the provisions to be set forth in the loan contract. (3.32)
  - (b) The resources of the loan shall be used to participate in the execution of a project, the cost of which is estimated in the equivalent of US\$123,000,000 and, in no case, shall the participation of the resources of the loan exceed 40.65% of the total cost of the project. Consequently, the loan and guarantee contracts shall contain such provisions as the Bank deems appropriate to ensure that such national resources as may be necessary, in addition to the loan, for the complete execution of the Project shall be duly provided, according to a schedule of investments satisfactory to the Bank, in an amount estimated at the equivalent of US\$73,000,000, which shall include: (i) US\$33,000,000 chargeable to the national budget; (ii) US\$22,500,000 from on a nonreimbursable contribution from the Federación Nacional de Cafeteros de Colombia; (iii) US\$13,500,000 in contributions from the participating regional executing agencies; and (iv) US\$4,000,000 to be contributed by the borrower. (3.18)(3.24)
  - (c) Prior to the first disbursement of the financing, the borrower shall present to the satisfaction of the Bank:



- (i) Evidence of having established and organized a special unit for the execution of the project within its own organization, with an appropriate rank and adequate staff, and that the unit is operating with satisfactory technical, financial, administrative and accounting capabilities. (3.38)
- (ii) The draft general agreement on project execution to be entered into with the participating regional executing agencies shall, among other matters, cover: (1) the mutual obligations of the borrower and the agencies previously referred to as regards implementation of the corresponding subproject; (2) the delegation of authority from such agencies to the borrower in order to enable it to oversee, coordinate and supervise execution of the respective subproject; (3) the obligation of these agencies, to capitalize or transfer to the borrower deed of ownership of the works or to pay for the investment made by the borrower; (4) the rules applicable to the preparation of studies, designs and work execution; and (5) such conditions as the communities and users must meet in order to be included in the project. (3.48)
- (iii) Copies of agreements entered into with at least four of the participating regional executing agencies. (3.48)
- (iv) Copy of the agreement entered into between the borrower and the Federación Nacional de Cafeteros de Colombia, in which the latter undertakes to effect the contribution to which reference is made in subparagraph 8 (b)(ii). (3.28)
- (v) Copy of the agreement entered into between the borrower and the Caja de Crédito Agrario Industrial y Minero, in which the party undertakes to make loans to the beneficiaries of the project. (3.31)
- (d) The borrower and the guarantor shall take appropriate measures acceptable to the Bank, in order that the rates for the provision of electric energy by the respective subsidiary companies of the borrower, participating in the project: (i) produce revenues at least sufficient to cover all the operating expenses of the respective systems, including those related to administration, operation, maintenance and depreciation; and (ii) yield a reasonable return on the fixed assets of the respective systems. If the application of the foregoing does not generate sufficient resources to cover the timely service of all the obligations of the respective subsidiary companies, the borrower and the guarantor shall take measures as necessary to obtain the additional resources required to achieve that purpose. (3.78)

- (e) The borrower and the guarantor shall take appropriate measures acceptable to the Bank, in order that the rates for the provision of electric energy by the electric companies participating in the subproject to be executed by DAINCO, produce revenues at least sufficient to cover all the operating expenses of the respective systems, including those related to administration, operation, maintenance and depreciation. If the application of the foregoing does not generate sufficient resources to cover the timely service of all the obligations of each above referred electric company, the borrower and the guarantor shall take measures as necessary to obtain the additional resources required to achieve that purpose. (3.78)
  - (f) In the acquisition of machinery, equipment and other materials for the project, and in the awarding of contracts for the execution of the works, the system of public bidding shall be followed in each case in which the value of such acquisitions or contracts exceeds the equivalent of US\$100,000. Bidding shall be subject to the procedures to be appended as an annex to the loan contract. (3.63)
  - (g) The provisions of paragraph (e) above notwithstanding, construction of civil works, facilities and installation of the transmission equipment, up to the equivalent of US\$12,000,000 chargeable to the additional national resources referred to in paragraph 8 (b) above, may be done by the borrower by means of force account. (3.62)
  - (h) The Bank shall establish such inspection procedures as it deems necessary to assure the satisfactory execution of the project, and the borrower, the guarantor and the participating executing agencies shall extend all cooperation which is required for the most effective accomplishment of this purpose. From the amount of the loan, the sum of US\$150,000 and the equivalent of US\$350,000 in Colombian pesos shall be allocated for credit to the general income accounts of the Bank to meet expenses of general inspection and supervision. (3.18)
9. Conditional provision: This resolution shall enter into force only when the Board of Executive Directors shall have determined, by means of a resolution, that the Bank has sufficient resources in the Fund for Special Operations to cover the loan authorized pursuant to this resolution.

## RECOMMENDATIONS

- A. It is recommended that the following provisions be included in the loan contract in addition to those set forth in the resolution and that they be performed to the satisfaction of the Bank:
1. Prior to the call for bids for each work or group of works or, if a call for bids should not be applicable, prior to the initiation of such works, the borrower shall undertake to present to the Bank:
    - (a) The plans, specifications and documents required for construction, including the contract models as well as the specific execution contract between the borrower and the respective regional executing agency and, if appropriate, the documentation corresponding to the invitation for bids. (3.50)
    - (b) Evidence of having legal possession of or the necessary rights to the land on which the works of the project shall be constructed. (3.70)
    - (c) Evidence that it has been complied with the provisions of paragraphs III and IV of Appendix III hereto. (3.50)
  2. The Bank may recognize as part of the local contribution to the project, engineering expenses up to an amount equivalent to US\$2,500,000, made by the borrower before the date of the loan contract but after May 22, 1979, provided that requirements substantially similar to those set forth in the respective resolution and in the loan contract have been fulfilled. (3.65)
  3. Within 12 months of the effective date of the contract, the borrower shall present to the Bank:
    - (a) the initial basic data, the categories of which are set forth in paragraph 7.01 of Appendix III hereto (3.82); and
    - (b) a description of the system to be used in compiling and processing data to be employed in making annual comparisons with the initial basic data to assess the results achieved in the execution of the project. (3.82)
  4. Beginning with the first year after the date of the last disbursement of the financing, and continuing annually for three years, the borrower shall submit to the Bank the annual comparative data mentioned in paragraph 3 above. (3.83)

5. At the end of the third year after the date of the last disbursement, the borrower shall present an ex-post evaluation report of the results of the project, based on the methodology and guidelines agreed upon with the Bank. (3.84)
6. Within the first 60 days of each calendar year during the execution of the project, the borrower shall present to the Bank an income and expenditure budget duly approved by its Board of Directors. (4.46)
7. Within 60 days after the end of each fiscal year, starting in fiscal year 1981, the borrower shall present to the Bank a projected cash flow statement of its participating electric companies; showing in reasonable fashion that in that year the electric company shall have at its disposal the necessary resources to participate in the project. (4.61)
8. Within 12 months after the effective date of the loan contract, the borrower shall present to the Bank:
  - (a) copy of the operation agreements entered into with the participating regional executing agencies other than those referred to in paragraph 8 (c)(iii) of proposed resolution. In all cases, prior to first disbursement of the financing for a given subproject, the borrower shall have presented to the Bank a copy of the agreement entered into with the respective participating agency in whose service area the subproject shall be executed; and
  - (b) an education plan for socioeconomic purposes, the principal object of which shall be to guide the beneficiaries of limited means as to the best means of making use of energy resources. (3.48)(3.78)
9. Within 24 months from the effective date of the loan contract, and in order to allow continuing disbursement of the resources of the financing for those subprojects not yet started up, the borrower shall demonstrate to the Bank that those subprojects corresponding to the first and second stages of the project referred to in paragraph 2.03 of Annex A have been started. (3.56)
10. Within 180 days after the end of the 1980 fiscal year, the borrower shall present to the Bank data indicating the rates of return obtained during said fiscal year, computed on the revalued net fixed assets of the respective electric systems of each regional executing agency subsidiary of the borrower participating in the project. On the basis of the rates of return thus verified, and for those cases when the rates referred to in paragraph 7.01 of Annex A of the Loan Contract has not been met, the Bank and the Borrower, not later than September 30, 1981, shall agree upon a calendar for the gradual increase of said rate of return, in order that within a maximum period of 5 years from the date of the end of the fiscal year referred to above, the corresponding rates of return shall be obtained. (3.80)

11. For purposes of verifying the compliance with the tariff clause by each subsidiary electric company of the borrower the financial statements of the borrower, referred to in recommendation 12, shall include a summary statement of the results and cash flow of such subsidiary electric companies. (3.78)
  12. The financial statements of the borrower during the life of the loan contract, and the financial statements of the project during its execution, shall be presented annually to the Bank certified by the Contraloría General de la República. The first financial statements shall be those for the fiscal year in which construction of the project is initiated. (4.18)
- B. An annex substantially similar to Appendix III (The Project) to this document shall be included in the loan contract.

THE PROJECT  
(Annex A to Loan Contract)

I. Purpose

- 1.01 The purpose of the Project is to improve living conditions in rural areas of Colombia by supplying electric energy to about 130,000 rural homesteads, benefitting about 800,000 low-income inhabitants.
- 1.02 The Project shall replace the use of other energy resources with lower-cost electric energy to the beneficiaries and facilitate the introduction of diverse services to the population in the rural areas.

II. Description of the Project

- 2.01 The Project shall be carried out in rural areas comprising about 15 out of the 22 departments, five intendencias and in five of the six comisarias ("small territories") into which the country is divided. The Project service area shall measure about 80,000 square kilometers.
- 2.02 The works of the Project shall be combined into subprojects, a subproject being understood to mean the combination of activities and works to be implemented by each one of the regional agencies that will take part in the implementation of the Project. These regional agencies would be: Electrificadora de Antioquia, S. A.; Electrificadora de Boyacá, S.A.; Central Hidroeléctrica de Caldas, S. A.; Centrales Eléctricas del Cauca, S. A.; Electrificadora de Cundinamarca y Meta, S. A.; Electrificadora del Chocó, S. A.; Electrificadora del Huila, S. A.; Centrales Eléctricas de Nariño, S. A.; Centrales Eléctricas del Norte de Santander, S. A.; Electrificadora de Santander, S. A.; Electrificadora del Tolima, S. A.; Corporación Autónoma Regional del Cauca (CVC); and Departamento Administrativo de Intendencias y Comisarias (DAINCO).
- 2.03 The Project execution shall be carried out in three stages in which the number of homesteads to be connected to the electric system shall be approximately as follows:
- (a) First Stage 39,000 homesteads;
  - (b) Second Stage 52,000 homesteads; and
  - (c) Third Stage 39,000 homesteads.

### III. Criteria for Selection

3.01 The selection of the subProjects shall meet the following criteria:

- (a) At least 80% of the beneficiaries of each group of works: (i) shall have a personal income of up to Col\$25,000 a year or live in homesteads in which the total assets of the residents thereof do not exceed Col\$500,000; a/ and (ii) shall not require an electric energy supply of more than 2.5 Kva;
- (b) The beneficiary communities shall not have more than 2,500 inhabitants and shall be located in areas with little electric service coverage; and
- (c) The works associated with each subProject shall be installed at a reasonable construction cost per beneficiary homestead.

### IV. Beneficiaries

- 4.01 Beneficiaries who meet the requirements set forth in subparagraphs 3.01 (a)(i) and (ii) may be connected to the system by paying only 18% of the cost per homestead of the respective electric system. This percentage--share comprises 3% of the cost per homestead, payable to the regional executing agencies of the Project over a period of up to two years, at no more than 12% annual interest; and 15% of this cost, for which the beneficiaries, with the cooperation of the respective regional executing agency, may arrange financing by the Caja de Crédito Agrario, Industrial y Minero, through loans offered under a partnership credit system.
- 4.02 Beneficiaries whose income or assets exceed the aforementioned limits, or who must satisfy a maximum electric energy demand in excess of 2.5 KVA, per homestead, shall pay for their connection to the respective electric systems, percentage-shares ranging from 30% to 100%, according to their income, assets or electric energy demand.
- 4.03 Funds deriving from the contributions of individual users in excess of 18% of the cost per homestead, as set forth in the foregoing paragraphs, shall be used to furnish electric service to homesteads in addition to the 130,000 homesteads specified in Section I herein. In determining the facilities in which these resources shall be invested, the selection criteria mentioned in Section III herein shall apply.

---

a/ The limits on income and assets are rounded off at June 1979 prices and shall be adjusted each year on the basis of indexes acceptable to the parties.

V. Cost of the Project

5.01 The total cost of the Project is estimated in the equivalent of US\$123,000,000, according to the following cost and financing table:

(In US\$ thousands or equivalent)

	COST OF THE PROJECT		PROJECT FINANCING			
	<u>Amount</u>	<u>%</u>	<u>BANK</u>	<u>LOAN</u>	<u>/SF-CO</u>	<u>Local</u>
			<u>Total</u>	<u>Foreign</u>	<u>Local</u>	<u>counter</u>
				<u>exchange</u>	<u>currency</u>	<u>part 1/</u>
1. <u>Engineering and Management</u>						
1.1 Engineering & Supervision	7,900	6.4	-	-	-	7,900
1.2 Management	7,900	6.4	-	-	-	7,900
Subtotal	<u>15,800</u>	<u>12.8</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>15,800</u>
2. <u>Direct Costs of Construction</u>						
2.1 Materials and Equipment	65,400	53.2	47,220	33,050	14,170	18,180
2.2 Construction	16,800	13.7	-	-	-	16,800
2.3 Indoor installations	10,900	8.9	-	-	-	10,900
2.4 Transportation and Insurance	11,200	9.1	-	-	-	11,200
Subtotal	<u>104,300</u>	<u>84.9</u>	<u>47,220</u>	<u>33,050</u>	<u>14,170</u>	<u>57,080</u>
3. <u>Finance Charges</u>						
3.1 Interests	2,280	1.9	2,280	1,600	680	-
3.2 Credit fee	120	0.1	-	-	-	120
3.3 Inspection and Supervision	500	0.3	500	350	50	-
Subtotal	<u>2,900</u>	<u>2.3</u>	<u>2,780</u>	<u>1,950</u>	<u>830</u>	<u>120</u>
Total	123,000 <sup>a/</sup>	100.0	50,000	33,050	15,000	73,000
	=====	=====	=====	=====	=====	=====
Percentages	(100.0)		(40.7)			(59.3)

<sup>a/</sup> The contributions to be made by the beneficiaries in order to be connected to the electric system, estimated in the amount of the equivalent of US\$27,000,000 shall be added to this sum, in order to complete the financing of all the works.



VI. Procurement of Goods and Services

- 6.01 When such goods and services as are procured or contracted for by means of call for bids are either fully or partly being financed with the Loan proceeds in foreign exchange, the procedures and specific conditions governing the invitations for bids shall allow suppliers and contractors originating in member countries of the Bank to freely participate. Consequently, the mentioned procedures and/or specific conditions shall contain no conditions that shall either impede or restrict the supplying of goods or the participation of contractors originating in those countries.

VII. Rates for Services and Rate of Return

- 7.01 In view of the purposes set forth in clause 8 (d) of the proposed resolution (Section 6.01), the rates for the provision of electricity from the electric system of each regional executing agency subsidiary of the borrower, shall be established so as to yield not later than the year 1985 at least the following rates of return on revalued net fixed investment in the system; (a) 6% in the case of the subsidiaries of (i) Caldas; (ii) Norte de Santander, and (iii) Tolima; (b) 3.5% in the case of the subsidiaries of (i) Santander, (ii) Huila, and (iii) Boyaca; (c) 1.5% in the case of the subsidiaries of: (i) Antioquia, and (ii) Cundinamarca; and (d) 0.5% in the case of the subsidiaries of (i) Cauca; (ii) Chocó and (iii) Nariño. The computation of such rate of return shall be established in accordance with the methodology agreed upon with the Bank. 1/

VIII. Socioeconomic Evaluation of the Impact of the Project

- 8.01 In order to assess the socioeconomic impact of the Project, an a posteriori evaluation thereof shall be made and cover, among other, the following matters: (1) Costs: (a) investment costs; (b) operating and maintenance costs; (c) management costs (meter reading, billing and collection); (d) energy buying costs; and (e) user's costs per individual homestead; 2. Benefits and Beneficiaries: (a) substitutions made in consumption; (b) evaluation of the consumption and the load per customer by volume and monthly amount, and by income category; (c) fixed contributions by the users to meet Project and installation costs, by income category; (d) assessment of the consumption capacity by income category; (e) number of connected customers by homestead and by electric company; (f) non-homestead uses; (g) social and community services introduced after the Project.
- 8.02 The initial basic data for this assessment may be obtained by the census the borrower has decided to make in the Project area.

---

1/ See Annex 25 of the Project Report.